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April 25, 2011

REPLY TO
ATTENTION OF

Directorate of Public Works

Mr. James Bearzi
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303

SUBJECT: Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)

Dear Mr. Bearzi:

Enclosed for your review is the report submittal titled: *Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16) White Sands Missile Range, New Mexico, March 2011.*

This status report is being submitted in response to New Mexico Environmental Department's (NMED) request during the March 24, 2010 meeting between representatives of the NMED and White Sands Missile Range (WSMR). The purpose of the status report is to update the NMED on the data collected since submittal of the *Corrective Action Implementation Work Plan* dated September 2007 and to present information to demonstrate that the site meets the requirements for Corrective Action Complete with Controls. This site is listed in Table 4-1 of WSMR's December 2009 RCRA Permit.

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Should you have any questions regarding this matter, please contact Mr. Benito Avalos of our Environmental Compliance Branch at (575) 678-2225.

I am forwarding this letter with enclosure (1 print copy w/CD) to Mr. Dave Cobrain, NMED-HWB; and without enclosure to Mr. John Kieling, NMED-HWB; Mr. Chuck Hendrickson, EPA Region VI; and, Ms. Laurie Rodriguez, ARACDIS-US, Inc.

Sincerely,

Thomas A. Ladd

Thomas A. Ladd
Director, Public Works

Enclosure

REPORT DOCUMENTATION PAGE

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1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
17-03-2011	Final	January 2009 through March 2011

4. TITLE AND SUBTITLE
Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site

5a. CONTRACT NUMBER
W91ZLK-05-D-0015

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)
Golden, Kimberly
Rodriguez, Laurie W.

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
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8. PERFORMING ORGANIZATION REPORT NUMBER
GP08WSMR.0C16.F.03_17_2011

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
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10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

13. SUPPLEMENTARY NOTES

14. ABSTRACT
This status report summarizes data collected in 2009 and 2010 to supplement earlier data collected from the site. It includes updated human health and ecological risk assessments and documents a risk evaluation for vapor intrusion. The supplemental data were evaluated to determine whether remedies described in the Corrective Measures Implementation Work Plan, approved by the NMED in January 2008, are relevant and appropriate. Findings support the conclusion that conditions at the site do not represent any current risks to human or ecological receptors. Hypothetical future risks associated with vapor intrusion are possible but can be managed with a land use control to prevent construction of a building with no vapor barrier over the release area. The report recommends that long-term groundwater monitoring of four regional aquifer monitoring wells be continued on an annual basis and include sampling for BTEX and MTBE. The report concludes that the site is eligible for Corrective Action Complete with Controls and that implementation of the CMI Work Plan is not warranted or appropriate.

15. SUBJECT TERMS
SWMU 197, CCWS-16, Former HELSTF TSA, CMI Work Plan, Risk Assessments, Vapor Instrusion, BTEX, MTBE, Long-Term Monitoring, Corrective Action Complete with Controls, Land Use Controls, Regional Groundwater

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Benito Avalos
unclassified	unclassified	unclassified			19b. TELEPHONE NUMBER *(Include area code)* 575-678-1007

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Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)

White Sands Missile Range, New Mexico

March 17, 2011

ARCADIS

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Status Report for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)

White Sands Missile Range, New Mexico

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GP08WSMR_0C16_F_1_03152011

Date:
March 17, 2011

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List of Acronyms

AST	Aboveground Storage Tank
BERA	Baseline Ecological Risk Assessment
bgs	Below Ground Surface
BTEX	benzene, toluene, ethylbenzene, xylenes
CAC	Corrective Action Complete
CFR	Code of Federal Regulations
CMI	Corrective Measures Implementation
COC	Constituents of Concern
COPC	Constituents of Potential Concern
COPEC	Constituent of Potential Ecological Concern
ELCR	Excess Lifetime Cancer Risk
ft	Feet
gal	Gallon
HELSTF	High Energy Laser System Test Facility
HHRA	Human Health Risk Assessment
HI	Hazard Index
HWB	Hazardous Waste Bureau
IDW	Investigation-Derived Waste
K	Hydraulic Conductivity
LNAPL	Light Non-aqueous Phase Liquid
LTM	Long-Term Monitoring
MCL	Maximum Contaminant Level
µg/L	micrograms per liter
mg/L	Milligrams per Liter
mL	Milliliters
MTBE	Methyl Tertiary Butyl Ether

NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMGQB	New Mexico Groundwater Quality Bureau
NMSSL	New Mexico Soil Screening Levels
PID	Photoionization Detector
RBDMP	Risk-Based Decision Making Process
RBSL	Risk-Based Soil Levels
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SLERA	Screening Level Ecological Risk Assessment
SMCL	Secondary Maximum Contaminant Levels
SSL	Soil Screening Levels
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compounds
SWMU	Solid Waste Management Unit
TDS	Total Dissolved Solids
THEL	Tactical High Energy Laser
TPH	Total Petroleum Hydrocarbons
TPH-GRO	Total Petroleum Hydrocarbon-Gasoline Range Organics
TSA	Technical Support Area
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WQCC	Water Quality Control Commission
WSMR	White Sands Missile Range
WTS	Work Plan for this Site

Executive Summary

This report provides information regarding corrective action activities at the High Energy Laser System Test Facility (HELSTF) Technical Support Area (TSA) Gasoline Spill Site (Solid Waste Management Unit [SWMU] 197, Compliance Cleanup Waste Site [CCWS]-16) at White Sands Missile Range (WSMR). Assessment activities were previously completed at this Site. The New Mexico Environment Department (NMED) approved, with direction, the Corrective Measures Implementation (CMI) Work Plan for this Site (WTS, 2007) in a letter dated January 16, 2008 (NMED, 2008). As discussed herein, the CMI Work Plan was not implemented; however, supplemental data collection and risk assessment were conducted. The purpose of this report is to document the supplemental work and to demonstrate that the Site is eligible for Corrective Action Complete (CAC) with Controls.

The former gasoline fueling station consists of a concrete pad and pump island with one fuel dispenser that was supplied by an underground fuel line connected to a 3,000 gallon (gal) aboveground storage tank (AST). On March 16, 2000, WSMR reported a release of unleaded gasoline to the New Mexico Groundwater Quality Bureau (NMGQB) (Ladd, 2000). The initial estimated fuel loss was 750 gal; however, a review of the fuel deliveries and consumption records indicated that the final loss was estimated to be 1,485 gal. After the system was evaluated, it was determined that the release occurred along the underground supply line running from the AST to the dispenser island. Following shutdown of the system in March 2000, the AST was emptied, the pump was removed, and the system was never used again (MEVATEC, 2002).

A Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) was conducted between 2000 and 2004 and documented in two reports: *HELSTF Technical Support Area Petroleum/Oil/Lubricants Station Investigation* report (MEVATEC, 2002), and the *RCRA Facility Investigation, High Energy Laser Systems Test Facility, Technical Support Area Fuel Spill* report (North Wind, 2004). Risk evaluations were performed in conjunction with the RFI using the Risk-Based Decision Making Process (RBDMP) developed by the NMED Underground Storage Tank Bureau (NMED, 2000). Findings from that assessment indicated that the only potentially complete exposure pathway for humans was short-term future land use for temporary construction workers who might be exposed to contaminants in soils at depths greater than 25 feet below ground surface (ft bgs). The risk assessment concluded that the constituent concentrations encountered in soil deeper than 25 ft would not result in unacceptable human health risks. Because of the depth of

contamination, ecological exposure pathways were determined to be incomplete (North Wind, 2004).

A Soil Vapor Extraction (SVE) pilot study was conducted during July 2000. The results of the pilot study indicated that SVE would be an effective method of remediation at the facility, specifically at well HVW-01. A SVE system was installed on October 16, 2000 for long-term remediation and was operated continuously through February 24, 2001. WSMR estimated that approximately 1,790 gal of gasoline were removed by the SVE system. Subsurface concentrations of total petroleum hydrocarbon-gasoline range organics (TPH-GRO), benzene, and toluene were significantly reduced by the SVE operations.

In a letter dated November 21, 2006, the NMED stated that the remediation was incomplete and contaminated media were still present at the Site at levels above the residential and industrial New Mexico Soil Screening Levels (NMSSLs). The NMED required WSMR to submit a CMI Work Plan for NMED approval that would describe additional remediation activities to reduce contaminant concentrations in the subsurface. The NMED recommended that a modified version of the SVE system be used as a method of remediation since the approach was already shown to be effective (Frishkorn, 2006). The *Final Corrective Measures Implementation Work Plan, HELSTF Technical Support Area Fuel Spill CCWS 16 (SWMU 197)* was submitted to the NMED in September 2007 (WTS, 2007). The NMED approved the CMI Work Plan with direction in a letter dated January 16, 2008 (Frishkorn, 2008).

The following supplemental work was conducted since NMED approval of the CMI Work Plan:

- In March 2009, six wells (HVW-05 through HVW-10) were installed in the zone of saturated soils (HVW-05 through HVW-10). Soil samples were collected from saturated soils (from 16 to 31 ft bgs) for characterization purposes. No gasoline constituents were detected above the SSLs (Soil Screening Levels). Some constituents were detected above the dilution attenuation factor (DAF 1) standards. Light non-aqueous phase liquid (LNAPL) was encountered in some of the wells and was sampled. The product analyses confirmed that the product was slightly weathered gasoline, which most resembled an 87 octane gasoline.

- Groundwater samples were collected from the Regional Aquifer monitoring wells (HMW-48, HMW-49, HMW-50 and HMW-52) in 2009 and 2010. With the exception of Methyl Tertiary Butyl Ether (MTBE), detected only in Well HMW-52, no gasoline

constituents have ever been detected in any regional groundwater samples. Concentrations of MTBE in HMW-52 are an order of magnitude below the NMED Tapwater Standard of 125 micrograms per liter (µg/L) and have decreased over time, indicating that there is little or no additional contaminant mass entering the Regional Aquifer.

- Hydraulic testing was conducted to further develop the understanding of the hydrogeologic conditions. Results from the tests indicated that little or no hydraulic connectivity exists between wells screened in the shallow saturated soils, further supporting the conclusion that lateral groundwater flow within the vadose zone is very limited.

- Product recovery testing was performed in late 2009 and early 2010 to assess the recoverability of LNAPL. Results from the testing showed that product recoverability is negligible.

- Updated risk assessments were performed to supplement the 2004 risk analysis with more recent data and to evaluate potential vapor intrusion pathways because vapor intrusion was not considered in the earlier work. The updated risk assessment concluded that there are no current complete human exposure pathways at the Site and, therefore, there are no current risks to human health. Hypothetical future risks would be associated with workers or residents exposed to volatile organic compounds (VOCs) in soil and water in saturated soils through vapor migration into indoor air if a building were constructed immediately over the release area without a vapor barrier. The Screening Level Ecological Risk Assessment (SLERA) and a Baseline Ecological Risk Assessment (BERA) indicated that potential current and future impacts are unlikely to occur for ecological receptors.

Conclusions

Based on the findings of the supplemental work, the following conclusions are made:

- The upper 10 feet of affected soils (the depth considered for direct human or ecological receptor exposure) have already been remediated to concentrations below cleanup levels and, therefore, no further SVE is required.

- The highest residual gasoline constituent concentrations are located in fine-grained, saturated sediments located 20 to 35 ft bgs. The complex hydrogeologic

conditions and lack of hydraulic connectivity for water within the interbedded soils indicate that sparging/biosparging are impracticable and will not be effective.

- Vadose zone water is anthropogenic and is generally not a sustainable water resource because of its limited occurrence. Potable water for the TSA and HELSTF Areas originates from water wells located several miles from the Site near the basin margins and is piped to the areas via WSMR's water distribution system. This will remain the source of potable water for the TSA and HELSTF area into the foreseeable future.

- The lateral extent of the product is limited to a relatively small area. Product volume is stable and the recoverability of the product is negligible.

- The source of the spill was removed in March 2000. There are no other sources of gasoline in the area. Dissolved constituent concentrations in the shallow water appear to be stable. With the exception of MTBE, which is present in only one downgradient regional well (HMW-52) at decreasing concentrations, all well below the NMED Tapwater Standard, no gasoline constituents have been detected in regional groundwater during the 10 years following the spill.

- There is no risk of direct exposure to the vadose zone water, and there are no constituents in the regional water that exceed cleanup levels. There are future risks associated with inhalation from vapor intrusion for hypothetical construction and residential scenarios, but these will be addressed through institutional controls.

- Based on conditions described above, remediation technologies proposed in the approved CMI Work Plan (biosparging or air sparging coupled with SVE) are not appropriate or warranted and the Site is eligible for CAC with Controls.

Recommendations

Based on the information provided in this report, corrective action has been completed and WSMR requests NMED concurrence that the Site is eligible for CAC with Controls.

1. Introduction

This report provides information regarding the corrective action activities at the HELSTF TSA Gasoline Spill Site (SWMU 197), (CCWS-16) at WSMR. NMED approved, with direction, the CMI Work Plan for this Site (WTS, 2007) in a letter dated January 16, 2008 (NMED, 2008). As discussed herein, the CMI Work Plan was not implemented; however, supplemental field work and a supplemental risk assessment were conducted. The purpose of this report is to document, in a comprehensive summary, all of the supplemental work that has been completed to date and to further substantiate that the Site is eligible for CAC with Controls.

2. Background Information

The HELSTF TSA is located approximately 20 miles east-northeast of WSMR Main Post Headquarters on US Highway 70 in Otero County, New Mexico and approximately two miles southeast of the main HELSTF operations area (Figure 2-1). The HELSTF TSA was constructed in 1987 to support the main HELSTF operations area with facilities engineering support and includes an AST that formerly held gasoline, a gasoline fueling island, medical facilities, fire station, cafeteria, maintenance facilities, and staging areas (Figure 2-2).

2.1 Regulatory History

On March 16, 2000, WSMR reported, by telephone, to the NMGQB that there had been a release of unleaded gasoline at the HELSTF TSA (Ladd, 2000). WSMR followed up with a written notification dated March 22, 2000, which informed the NMGQB that WSMR had retained MEVATEC to collect six soil samples by hand auger for laboratory analysis (Ladd, 2000). In a letter dated April 7, 2000, WSMR provided the NMGQB with results of sampling performed in late March 2000. WSMR also requested clarification from the NMED on whether the NMGQB or the Hazardous Waste Bureau (HWB) had primacy over the remediation activities (Ladd, 2000a).

Regulatory oversight for corrective actions was delegated to the NMED HWB and, therefore, all subsequent activities were performed in accordance with the regulations established under Title 20 of the New Mexico Administrative Code (NMAC), Chapter 4.1, Title 40 of the Code of Federal Regulations (CFR) Parts 260-273, and the guidance published by the NMED. Although the Site was not identified as a SWMU, the RFI guidance was chosen as the appropriate mechanism to follow for investigations completed after 2000 (BAE Systems, 2003). A phased approach to

investigating the fuel release was performed in May and June 2000, and an SVE remediation system was installed in July 2000 and operated for a period of four months. An investigation was performed in 2004 to evaluate the effectiveness of the remediation. The 2004 RFI report recommended annual sampling of the Regional Aquifer monitoring wells for a period of 10 years. All investigations and remediation activities were conducted as a Voluntary Corrective Measure under RCRA, as administered by the NMED HWB (North Wind, 2004).

In a letter dated November 21, 2006, the NMED stated that, after review of the *FINAL RCRA Facility Investigation, High Energy Laser Systems Test Facility Technical Support Area Fuel Spill*, dated August 2004, the *FINAL Work Plan for the RCRA Facility Investigation at the HELSTF Technical Support Area* (August 2003), and the report titled *HELSTF Technical Support Area Petroleum/Oil/Lubricants Station Investigation* (January 2002), the remediation was incomplete and contaminated media were still present at the Site at levels above the residential and industrial NMSSLs. The NMED required WSMR to submit a CMI Work Plan for NMED approval that would describe additional remediation activities to reduce contaminant concentrations in the subsurface. In addition, the NMED recommended that a modified version of the SVE system be used as a method of remediation since the approach was already effective (Frishkorn, 2006).

The *Final Corrective Measures Implementation Work Plan, HELSTF Technical Support Area Fuel Spill CCWS 16 (SWMU 197)* was submitted to the NMED in September 2007 (WTS, 2007). The NMED approved the CMI Work Plan with direction in a letter dated January 16, 2008 (Frishkorn, 2008). In 2009, ARCADIS performed supplemental data collection and risk assessments to evaluate current site conditions and determine whether additional remediation was required. The supplemental activities are described in Section 3.

2.2 Operational History

The former gasoline fueling station consists of a concrete pad and pump island with one fuel dispenser that was supplied by an underground fuel line connected to a 3,000-gal AST. The now empty AST, which contained unleaded gasoline, is located approximately 35 feet (ft) west of the dispenser island, within a concrete secondary containment structure (refer to Figure 2-2).

On March 16, 2000, WSMR reported a release of unleaded gasoline to the NMGQB (Ladd, 2000). There was no visual evidence of leaks when the missing fuel was first

detected from the AST. The fuel delivery truck arrived to deliver unleaded gasoline to the fuel point that, according to records, should still have contained 800 gals of fuel. When the driver opened the lid on the 3,000-gal tank, it contained approximately 1 ½ inches of fuel. The driver immediately closed the valves on the tank, shut down the system, and WSMR took the fueling station out of service. The initial estimated fuel loss was 750 gals; however, a review of the fuel deliveries and consumption records estimated the loss to be 1,485 gal. After the system was evaluated, it was determined that the release occurred along the underground supply line running from the AST to the dispenser island. Following shutdown of the system in March 2000, the AST was emptied, the pump was removed, and the system was never used again (MEVATEC, 2002).

2.3 Previous Investigations and Corrective Action

Investigations were conducted in between March and June 2000 to evaluate the environmental impacts from the gasoline release. A SVE system was operated as an interim remedial measure from July 2000 through February 2001 to address soil contamination found during these investigations. The results of the investigations and corrective action conducted in 2000 and 2001 were presented in the *HELSTF Technical Support Area Petroleum/Oil/Lubricants Station Investigation* report, which was submitted to the NMED in January 2002 (MEVATEC, 2002). In 2004, an additional soil and groundwater investigation was conducted to evaluate the effectiveness of the interim remedial measures. The results of the 2004 investigation were summarized in the *RCRA Facility Investigation, High Energy Laser Systems Test Facility, Technical Support Area Fuel Spill* report, which was submitted to the NMED in August, 2004 (North Wind, 2004). The results of these investigations are summarized in this section.

2.3.1 March, 2000 Investigation (MEVATEC, 2002)

On March 17, 2000, WSMR retained MEVATEC to collect six soil samples at three different locations using a hand auger in order to define the extent of the area affected by the gasoline release. The soil samples were sent to the laboratory for analysis of total petroleum hydrocarbon-gasoline range organics (TPH-GRO), benzene, toluene, ethylbenzene, xylenes (BTEX), and MTBE. Elevated concentrations of all constituents analyzed were detected from 3 to 9 ft below ground surface (bgs) at HA-01 (a.k.a. TSA-Pump), located beneath the dispenser pump, and HA-03 (a.k.a. TSA-Blacktop), located east of the dispenser island. The soil analytical results are shown on Table 2-1.

On March 24, 2000, three additional qualitative hand auger borings were completed to determine the extent of contamination based on visual observations and screening of VOCs with a photoionization detector (PID). Based on the initial analytical and qualitative results obtained from the hand auger borings, it was estimated that the plume's radius was approximately 16 to 18 ft horizontally and vertical extent exceeded 18 ft. It was determined that a full-scale soil and groundwater investigation was warranted.

2.3.2 May-June, 2000 Investigation (MEVATEC, 2002)

During May and June 2000, a soil and groundwater investigation was conducted, including the drilling and sampling of nine soil borings (SB-01 through SB-09) to about 40 ft bgs, installation of four vapor recovery wells (HVW-01 through HVW-04), and installation and sampling of three regional groundwater monitoring wells. The locations of the soil borings and vapor recovery wells are shown on Figure 2-2.

Soil samples were collected from five ft intervals for analysis of TPH-GRO, BTEX, and MTBE by Trace Analysis, Inc. Ten percent of the soil samples were split and sent to PDP Analytical Services for quality assurance purposes. The results of the soil analyses are presented on Table 2-1. The highest gasoline constituent concentrations were detected in a smear zone directly beneath the dispenser island (the point of release), at approximately 17 ft bgs. The soil borings advanced during the May 2000 investigation provided delineation of impacts in soil and the report concluded that soil impacts from the release of fuel from the supply piping had not exceeded a depth of 30 ft bgs.

During the investigation, WSMR determined that interim remedial action using SVE may be required. Therefore, vapor recovery wells HVW-01, HVW-02, HVW-03, and HVW-04 were completed in soil borings SB-01, SB-02, SB-05, and SB-08, respectively. HVW-01 was screened at 15 to 20 ft bgs, above the center of the plume, and HVW-02, HVW-03, and HVW-04 were placed along the suspected perimeter of the plume and were screened between 31 and 36 ft bgs, across a shallow vadose zone. Well construction details for the vadose zone water monitoring wells are provided in Table 2-2.

Only HVW-04 had water in it at the time the wells were sampled in June 2000. BTEX, MTBE, and total petroleum hydrocarbons (TPH) were detected in vadose zone water from HVW-04; concentrations of benzene and toluene exceeded the 2000 Water Quality Control Commission (WQCC) standards. Water quality analyses for vadose

zone water from HVW-04 indicated that total dissolved solids, detected at 26,000 milligrams per liter (mg/L), exceeded the WQCC standard of 10,000 mg/L. Sulfate, chloride, nitrate, and boron also exceeded the 2000 WQCC standards. The 2002 investigation report stated that the elevated concentrations of chloride and nitrate in the water from HVW-04 were consistent with release of domestic wastewater, and also stated that the high concentrations of dissolved ionic species may also be attributable to naturally occurring conditions. The 2000 analytical results for vadose zone water from HVW-04 are provided on Table 2-3.

The NMGQB requested that WSMR evaluate the depth to water, water quality, and direction of flow for the Regional Aquifer in the release area. Three regional groundwater monitoring wells HMW-48, HMW-49, and HMW-50 (originally designated as MW-01, MW-02, and MW-03, respectively) were installed in May 2000. Well construction details for the regional groundwater monitoring wells are provided in Table 2-2. Depth to water in each of the three wells was measured at approximately 90 ft bgs and flow direction in the Regional Aquifer was determined to be to the southeast. Groundwater from the three regional groundwater monitoring wells was sampled and analyzed for water quality parameters, selected dissolved metals, BTEX, MTBE, and TPH-GRO; none of the gasoline constituents were detected. The results of the regional groundwater analyses are presented in Table 2-4.

2.3.3 July 2000 through February 2001 Corrective Action (MEVATEC, 2002)

Based on the results of the 2000 investigation, it was determined that it would be prudent to remediate the gasoline retained in the vadose zone so that the threat of groundwater contamination could be eliminated. A SVE pilot study was conducted in July 2000. The results of the pilot study indicated that SVE would be an effective method of remediation at the facility, specifically at HVW-01. A SVE system was installed on October 16, 2000 for long-term remediation and was operated continuously through February 24, 2001. WSMR estimated that approximately 1,790 gallons of gasoline were removed by the SVE system. In addition, subsurface concentrations of TPH-GRO, benzene and toluene were significantly reduced by the SVE operations.

2.3.4 2004 Soil and Groundwater Investigation (North Wind, 2004)

The purpose of the 2004 soil and groundwater investigation was to further characterize the impacts to subsurface soils and determine the effectiveness of the interim remedial action (i.e., SVE operation) performed in 2000 by MEVATEC. The 2004 investigation

included drilling and sampling nine 42-ft deep soil borings (SB-10 through SB-18) in the vicinity of the nine soil borings completed during the 2000 investigation and drilling and sampling five background soil borings (SB-19 through SB-23). Soil samples were collected from 5-ft intervals in the nine investigation borings for analysis of metals, VOCs, SVOCs, and TPH-GRO. Soil samples were collected from 5-ft intervals for lithologic logging in the five background soil borings and from 10 to12 ft bgs and 20 to 22 ft bgs for total lead analysis.

Two regional groundwater monitoring wells were planned for installation, but the boring for HMW-51, which was to be installed in the source area, was abandoned during drilling to prevent potential cross-contamination from the upper saturated zones to the regional groundwater. Therefore, Well HMW-51 was not installed. Well construction details for the new regional groundwater monitoring Well HMW-52 are included in Table 2-2. Groundwater from the existing regional groundwater monitoring wells and newly installed Well HMW-52 was sampled and analyzed for water quality parameters, BTEX, VOCs, semi-volatile organic compounds (SVOCs), and total and dissolved metals. The investigation soil boring and monitoring well locations are shown on Figure 2-2.

The VOC constituents of concern (COCs) were identified as BTEX and the SVOC naphthalene. The highest COC concentrations were detected in soils ranging in depth from approximately 26 to 31 ft bgs. None of the COCs were detected in the regional groundwater samples. Total dissolved solids (TDS) concentrations in the regional groundwater ranged from 7,200 mg/L to 8,640 mg/L.

The results of the investigation demonstrated that the more porous, poorly graded sands with silt in the upper 25 ft of soil were remediated successfully by the SVE operations. The remaining areas of impact in soil were in the saturated zones within the 25 to 35 ft bgs interval. The concentrations of fuel-related constituents in soil were lower in 2004 than they were in 2000 prior to the remediation, but the constituents had migrated below 25 ft and laterally to the west and northeast. There were no impacts from the fuel release to regional groundwater.

The depth of contamination (greater than 25 ft bgs) eliminated all but one exposure scenario to ecological or human receptors. The only potential exposure scenario identified would be short-term future land use in the area of impacted soil for temporary onsite construction workers if excavation of soil to below 25 ft occurred. However, the 2004 RFI report stated that, even if this scenario occurred, the concentration levels in soil were well within the NMED Underground Storage Tank (UST) Risk-Based Soil

Levels (RBSLs) and NMED HWB's SSLs for future onsite construction workers. The report also stated that site lithology was not conducive to additional vertical migration toward the non-potable Regional Aquifer and is, therefore, protective of the Regional Aquifer. The report recommended No Further Action with continued annual monitoring of the four existing groundwater monitoring wells for BTEX for approximately 10 years.

2.3.5 Annual Regional Groundwater Monitoring

The four regional groundwater monitoring wells have been sampled annually since 2006 and the annual sampling continues. No gasoline constituents have ever been detected over the regulatory standards. MTBE has been detected in groundwater from only one regional monitoring well (HMW-52) at concentrations that are orders of magnitude below the NMED Tapwater Standard. The MTBE concentrations in this well are declining. A comprehensive summary of the regional groundwater analytical results is provided in Table 2-4.

2.4 Environmental Setting and Conceptual Site Model

2.4.1 Description of Regional Geology

The HELSTF TSA is located near the center of the Tularosa Basin, which is located within the Mexican Highland Section of the Basin and Range physiographic province. The basin is the result of tectonic rifting (crustal extension) associated with development of the Rio Grande Rift (linear arm of the Basin and Range physiographic province), which began in the region about 35 million years ago (Seager et al., 1984). The rifting produced north-northwest trending, fault zone bounded valleys (grabens or half-grabens) with large-displacement normal faults. The Tularosa Basin is bound on the western side by the San Andres, Organ Mountain, and Artillery Range fault zones, which represent the largest basin-bounding fault systems and exhibit visible fault scarps related to recent fault activity (<1,000 years ago) on alluvial fans (Seager et al., 1984; Blair et al., 1990; Buck, 1996). The basin is bound on the eastern side by the Almagordo Fault Zone, which experienced recent faulting activity during the Holocene (<10,000 years ago) (Fryberger, 2008).

The San Andres, Organ, and Franklin Mountains (San Andres uplift) located west of the HELSTF TSA are composed of more than 5,000 feet of westward-dipping, Precambrian- Pennsylvanian age bedrock and Cretaceous-Tertiary intrusive rocks (Kottlowski et al. 1956; McLean 1970). The Sacramento and Sierra Blanca Mountains (Sacramento uplift) located east of the HELSTF TSA are composed of more than 3,300

feet of Cambrian-Pennsylvanian and Permian age bedrock (McLean 1970). Over geologic time, dissolution and mechanical weathering of Paleozoic sedimentary series in the basin-bounding mountains (e.g., Permian Yeso Formation) provided the source of gypsum and other evaporite minerals (mineral salts) in the Tularosa Basin.

The Tertiary deposits of the Tularosa Basin record rising mountains that shed coarse detritus into the rapidly subsiding extensional basins via meandering sandy rivers and alluvial fans, which were interrupted at various times by lacustrine episodes that deposited clays, marls and siltstones, particularly during wet periods of the Pleistocene (Seager et al., 1984). Based on regional basin fill thicknesses, more than 2,000 feet of Tertiary basin fill was likely deposited beneath the TSA (Hibbs et al., 1997). Approximately 7,000 years ago, an active eolian deflation basin cut into deposits of the most recent Pleistocene lake (ancient Lake Otero) and redistributed the gypsum to form the present-day dune fields located east and north of Alkali Flats. Alkali Flats and Lake Lucero are the remnant lake bed of ancient Lake Otero (Fryberger, 2008).

A detailed discussion of bedrock outcrops, sediment accommodation, depositional environments, and facies distribution during basin formation is provided in the Phase III RFI for the HELSTF sites (ARCADIS, 2010).

2.4.2 Description of Local Geology

Interpretation of the subsurface geology at the HELSTF TSA is based on soil borings drilled during the 2000 site assessment performed by MEVATEC (MEVATEC, 2002), 2004 RFI performed by BAE Systems (North Wind, Inc., 2004), and 2009 site field work conducted by ARCADIS (discussed in Section 3). The HELSTF TSA is located within the mapped extent of an inactive dune system of eolian gypsum sand associated with the geologically recent aridification of the basin (Fryberger, 2008). However, the associated shallow gypsiferous deposits (defined as the gypsiferous zone), which are observed at the HELSTF Process Area, are not present at the HELSTF TSA. Instead, regional mapping indicates an erosional window through the gypsiferous zone in the vicinity at the HELSTF TSA, exposing older basin floor (i.e., the interbedded zone) at the ground surface (Fryberger, 2008). All HELSTF TSA borehole records consistently document the absence of the gypsiferous zone at the TSA and exclusively indicate a thick, interbedded lacustrine zone. The interbedded zone suggests that the Site was located in a lake margin depositional setting of the Pleistocene between the transitional zone (riverine systems) along the basin margin to the west and the distal facies (lacustrine) toward the basin center. This interval is consistent with the typical non-evaporite lacustrine lithologies of sand, silt, and clay of

Lake Otero (early phase of deposition) and possibly older, pre-Otero pluvial lakes (e.g., Pliocene Lake Cabeza de Vaca) (Allmendinger, 1971).

Geologic cross-sections were constructed using soil borings from the TSA Site to a maximum depth of 115 ft bgs, which is approximately 20 to 25 ft below the Regional Aquifer surface (Figures 2-3 and 2-4). As shown on the cross-sections, a thick, clay-dominated interbedded zone with silt and channel fill sand deposits underlies the Site. Two distinct intervals are present within the interbedded zone: a shallow (0 to approximately 25 ft bgs) interval of laterally continuous higher permeability sand and a deep interval (below approximately 25 ft bgs) of laterally discontinuous sand interbedded with lacustrine clay and silt. Individual channel fill sand deposits in the deep interval typically range in width from 20 to 50 feet and range in thickness from a few feet to 15 feet.

The three-dimensional distribution of the channel fill sands at the Site was likely the combination of stream avulsion, sediment load, tectonic subsidence and paleoclimate. In contrast to the laterally continuous channel fill sand deposits in the shallow interbedded zone, the spatial distribution of channel fill sand deposits in the deep interbedded zone results in significant vertical and lateral anisotropy (Figure 2-4). The downward migration of water within these higher permeability zones is likely limited by the degree of hydraulic connection between vertically stacked channel fill deposits.

2.4.3 Hydrogeology – Regional Aquifer

Regional groundwater in the Tularosa-Heuco Aquifer System is generally brackish to saline (greater than 10,000 mg/L) with increased TDS concentrations toward the basin center and with aquifer depth (Hibbs et al., 1997; Fryberger, 2008). Concentrations of TDS less than 1,000 mg/L in regional groundwater are observed along the basin margins as a result of fresh water recharge from ephemeral and perennial streams that drain the mountains.

Groundwater flow in the Tularosa-Heuco Aquifer System is generally toward the basin center from the basin margins with an axial pattern of southward flow along the western, deepest side of the basin (Fryberger, 2008). The average linear groundwater velocity in the Regional Aquifer is highest in the northern basin (more than 25 feet per day [ft/day]), moderate along the basin margins (approximately 5 ft/day), and lowest in the basin center (less than 1 ft/day) (Fryberger, 2008). Interbasin flow occurs southward into the Hueco Bolson aquifer, which is ultimately discharged to the Rio Grande or downgradient pumping wells. The only known groundwater discharge

locations within the Tularosa Basin occur at Salt Creek and Malpais Spring. There are no known groundwater discharges in the vicinity of the HELSTF TSA.

2.4.4 Local Groundwater Conditions

Groundwater flow in the Regional Aquifer at the HELSTF TSA is toward the southeast with an average hydraulic gradient of approximately 0.002 to 0.003 foot per foot (Figure 2-5), based on water levels collected March 11, 2010. The Regional Aquifer water table is encountered at approximately 90 to 93 ft bgs in the TSA regional groundwater monitoring wells (Table 2-5). Elevated TDS in the regional groundwater at the HELSTF TSA ranges from 7,400 to 33,000 mg/L. TDS, sulfate, and chloride concentrations detected in the TSA regional groundwater exceed the NMED groundwater quality standards (Table 2-4) and the Federal Secondary Maximum Contaminant Levels (SMCLs) in 40 CFR §143.3. In addition, nitrate nitrogen concentrations detected in regional groundwater at the TSA exceed the NMED groundwater quality standard (Table 2-4) and the MCL (Maximum Contaminant Level) in 40 CFR §141.62.

Large contributions of dissolved evaporite components are transported to the Regional Aquifer from the basin-bounding mountain ranges. Published data for the Regional Aquifer indicate groundwater with greater than 1,000 mg/L TDS generally contain calcium, chloride, and sulfate concentrations that naturally exceed regulatory limits established for groundwater quality (ARCADIS, 2010). Based on its geochemistry, the Regional Aquifer is not considered a viable potable water source.

Water is present above the Regional Aquifer surface within the interbedded soils. Reports from previous investigations stated that, based on the elevated concentrations of nitrate and sulfate in this shallow water, the source of the water could be leaking water and wastewater lines that run under and in the vicinity of the gasoline spill site. Water from the saturated soils exhibits elevated TDS concentrations ranging from 3,300 to 12,700 mg/L. In addition, TDS, sulfate, and chloride concentrations in this water exceed the NMED groundwater quality standards (Table 2-4) and the SMCLs in 40 CFR §143.3. Nitrate nitrogen concentrations detected in water from the shallower saturated soils at the TSA exceed the NMED groundwater quality standard (Table 2-4) and the MCL in 40 CFR §141.62. Based on the presence of elevated concentrations of TDS, sulfate, chloride, and nitrate, and because the saturated soils cannot sustain meaningful yield (as described in Section 3.2), the water from these soils is not a viable potable water source.

Saturated intervals generally occurring at 20 to 30 ft bgs were confirmed in existing monitoring wells HVW-01 through HVW-04. Water has been observed as shallow as 16 ft bgs at HVW-01 (Table 2-6). First encountered vadose zone water occurs within silt and channel fill sand deposits of the deep interval of the interbedded lacustrine unit (Figure 2-4). Saturated clay intervals were also observed at several locations (e.g., HVW-05). In general, the channel fill sand deposits in the interbedded lacustrine unit likely represent zones of higher hydraulic conductivity relative to surrounding clay and clayey silts. Due to the contrast in permeability between the channels and the fine-grained clayey matrix, the channels may serve as the primary pathways for migration of water within the interbedded soils. Overall, the observed saturated intervals in the interbedded soils indicate that complex, three-dimensional flow paths likely exist for shallow water at the TSA as a result of anisotropic conditions within the interbedded lacustrine unit.

Water saturation in the in the interbedded soils at the TSA is spatially variable with very limited horizontal connectivity as shown by the results of the slug tests conducted in wells screened in the saturated soils at the TSA (Section 3.2). Three of the wells screened in saturated soils in the TSA Area (HVW-01, HVW-07, and HVW-09) are dry and several of these wells bailed dry during the product recovery testing. Based on site-specific observations and aquifer test results (see discussion in Section 3.2), water in the shallower, interbedded soils at the TSA are not capable of sustaining meaningful yields.

Measured water and product levels and water elevations in the shallow wells are included in Table 2-6. The only wells screened in saturated soils in the TSA Area prior to 2009 were HVW-01, HVW-02, HVW-03, and HVW-04. As shown on Figure 2-6, there are no consistent correlations between water elevations at the shallow wells. Due to the vertical and lateral anisotropy of the vadose zone and resulting cascade-type pattern of vadose zone water migration, conventional two-dimensional water level maps tend to produce highly variable head representations that in turn misrepresent the potential for lateral flow because they cannot represent localized variations in lateral connectivity.

2.4.5 Groundwater Use

Potable water is largely confined to alluvial fans along the mountain ranges in the basin. Water quality decreases as it moves away from the mountain fronts and mixes with slower moving brackish water at the basin interior. The Regional Aquifer beneath the TSA, which is located within the Alkali Flats, does not produce potable water. The

TSA receives water from three supply wells (MAR-1, MAR-2, and MAR-3) located approximately 9 to 9.5 miles to the west along Range Road 7.

The closest pumping well is the THEL-01 well, located approximately 3.2 miles west-southwest of the TSA. Because of the naturally high TDS, this well is used only for fire suppression at the Tactical High Energy Laser (THEL) Site. The THEL-01 water well is not located downgradient from the TSA and would not likely be affected by operations at the TSA. There are no known production wells downgradient of the TSA; further, no future production or supply wells are expected to be installed at or downgradient of the TSA.

Shallow water from saturated soils in the TSA Area is of poor quality and meaningful extraction rates cannot be achieved in wells screened in these soils; therefore, there is no current or expected future use of the existing shallow water.

3. Supplemental Field Work

As stated previously, all assessment activities have been completed at the TSA and the Site is in corrective action. In 2009, ARCADIS and Zia Engineering and Environmental Consultants (Zia) conducted well installations in preparation for implementing the CMI Work Plan that was approved by the NMED for the TSA Site. During the course of installing the wells, soil and shallow water samples were collected. The results of the soil samples confirmed the success of the SVE in remediating the upper 15 to 20 ft of soil. Based on the geology and hydrogeology observed during the well installations, and the analytical results for soil and water, ARCADIS developed a revised geologic and hydrogeologic conceptual site model for the Site, and conducted supplemental testing to confirm current site conditions and further evaluate the viability of the propose remedy.

The following supplemental data collection activities were completed by ARCADIS and Zia in 2009 and 2010:

- March, 2009 - Installation of six wells screened in saturated soils located 22 to 35 ft bgs within the interbedded soils above the Regional Aquifer (HVW-05 through HVW-10);

- April, 2009 – Aquifer testing for shallow wells in the and the HELSTF TSA;

- May, 2009 – Collection of water samples from the newly installed wells and collection of a LNAPL sample;
- September, 2009 – Collection of shallow water and regional groundwater samples;
- November, 2009 – Performance of product bail down tests on three shallow monitoring wells containing LNAPL and collection of two LNAPL samples for characterization purposes; and,
- March to April, 2010 – Performance of a passive product recovery pilot test on three shallow wells containing LNAPL.

A description of the field activities conducted, the results of those activities, and evaluation of the data collected is provided in this section. Detailed descriptions of methodologies implemented are provided in Appendix A.

3.1 Well Installations and Associated Supplemental Sampling

As stated previously, six shallow monitoring wells (HVW-05 through HVW-10) were installed in saturated soils at the TSA in March 2009 in preparation for implementation of the approved CMI. Prior to drilling, utility clearances were obtained. Documentation of these clearances is provided in Appendix B. Soil samples were collected from saturated soils (from between 16 and 31 ft bgs) for characterization purposes during the well installation. Boring and well installation logs for the newly installed wells are provided in Appendix C. Water samples were collected from the newly installed shallow wells in May 2009. With the exception of two dry shallow wells, all shallow wells and one regional groundwater monitoring well (HMW-52) were sampled in September 2009. LNAPL was encountered and was also sampled in May and September 2009. Analytical results for the groundwater and product samples and the data validation reports are provided in Appendix D. The newly installed wells, existing wells, and historical soil borings were surveyed by a licensed surveyor. The 2010 survey data are provided in Appendix E. These activities are described in more detail in Appendix A, and the sampling results are discussed in Section 5.

3.2 Aquifer Testing

The geologic setting for the generalized conceptual model for the HELSTF Process Area and the HELSTF TSA Area is understood to be a complex system of high permeability alluvial/fluvial channel form features surrounded by lower permeability

deposits. In the vadose zone in both areas, saturated conditions may occur locally in higher permeable materials, but there is generally low spatial hydraulic connectivity between high permeability channel form features, resulting in complex water levels, flow paths and contaminant distribution.

Hydraulic testing was conducted on April 27 and April 30, 2009 to further develop the understanding of the hydrogeologic conditions at the Site and provide additional characterization information to support evaluation of remedial objectives and alternatives. Slug tests were performed on all four Regional Aquifer monitoring wells at the TSA (HMW-48, HMW-49, HMW-50, and HMW-52) and at two shallow monitoring wells (HVW-04 and HVW-05). Slug testing provides hydraulic information in the immediate vicinity of a well and is performed by the instantaneous addition or removal of hydraulic head; typically this is done by adding or extracting a known volume, or slug, of water at the tested well. The slug, in effect, increases the hydraulic head at the test well. The hydraulic properties in the immediate vicinity of the well will affect when the well returns to static equilibrium conditions. Detailed descriptions of the slug test methodologies are provided in Appendix A and the data generated by the hydraulic testing is presented in Appendix F.

3.3 Product Recovery Testing

Product recovery testing was performed in November 2009, January 2010, and March 2010 to assess the recoverability of LNAPL present in some of the TSA shallow wells. Approximately one-day product baildown tests were conducted in shallow wells HVW-05, HVW-08, and HVW-10 in November 2009 and one-week product baildown tests were conducted in shallow wells HVW-03, HVW-05, HVW-08, and HVW-10 in January 2010. The tests indicated that only negligible product was recoverable. The methodologies for these tests are provided in Appendix A, and the results of the tests are summarized in Section 5. Data generated by the product recovery tests are presented in Appendix G.

Between March 22 and April 12, 2010, product recovery and monitoring activities were continued. Based on the low recoverability of product demonstrated during the November 2009 and January 2010 product recovery tests, a pilot test using a passive product recovery system was implemented at wells HVW-03, HVW-05, and HVW-08. HVW-10 also had recoverable product, but because HVW-10 is a one-inch diameter well, product was hand bailed from this well during the test. The passive product recovery system selected for the test was the GeoSorb System, consisting of a stainless steel screened/meshed cage assembly containing an absorbent sock, which

was installed in each of the three test wells. Based on the pilot test, passive product recovery is an effective method to address the negligible volume of product that remains in the vadose zone at the HELSTF TSA.

4. Supplemental Risk Assessment Activities

Previous risk evaluations for the TSA Site were performed in 2004 as part of the RFI (North Wind, 2004). The risk analysis was performed according to the RBDMP developed by the NMED Underground Storage Tank Bureau (NMED, 2000). Findings from that assessment indicated that the only potentially complete exposure pathway for humans was short-term future land use for temporary construction workers who might be exposed to contaminants in soils at depths greater than 25 ft bgs. The risk assessment concluded that the constituent concentrations encountered in soil deeper than 25 ft would not result in unacceptable human health risk. Because of the depth of contamination, ecological exposure pathways were determined to be incomplete (North Wind, 2004).

The risk assessments presented in this Status Report were developed to supplement the 2004 risk analysis with more recent data and to evaluate potential vapor intrusion pathways because vapor intrusion was not considered in the earlier work. The human health and ecological risk assessments were performed using the cumulative data set composed of historical data previously submitted to the NMED along with the more recent data presented in this Status Report. The risk assessments were conducted in a manner consistent with current NMED guidance (NMED, 2009a, b) and the United States Environmental Protection Agency (USEPA) Risk Assessment guidance (USEPA, 1989; 1991a,b; 1992a,b; 1993a,b; 1999; 2002a,b; 2003a,b; 2005). A detailed discussion of the risk assessment procedures is included in Appendix H.

5. Summary of Results

Supplemental work was conducted at the Site to further evaluate the applicability and viability of the proposed, approved corrective measures (SVE with air sparging or biosparging). The following discussion summarizes the results for the supplemental work done at the TSA and provides the basis for the conclusions.

5.1 Soil

Soil samples were collected from saturated soils (ranging from 20 to 31 ft bgs) during installation of wells screened in the saturated soils at the Site. The results for these soil

samples and historical soil results were evaluated using criteria established by the USEPA and NMED as follows:

- NMED. Technical Background Document for Development of Soil Screening Levels, Revision 5.0. Hazardous Waste Bureau and Groundwater Quality Bureau, Voluntary Remediation Program. August 2009 (with minor revisions December 2009); and

- USEPA. USEPA Regional Screening Levels. December 2009.

Soil data were screened as follows:

- Results for soil samples collected from the upper 10 ft were compared to NMSSLs. If there were no NMSSLs, the data were compared to the EPA SSLs. Only impacts to soil above risk-based concentrations in the upper 10 ft would represent potential risk to human or ecological receptors.

- All soil data were screened against the NMED DAF of 1 since water in the zone of saturated soils has been affected by the release.

The soil analytical data are summarized in Table 2-1 and presented on Figure 3-1. Analytical laboratory reports for the soil data collected in 2009 are provided in Appendix D-1. Samples were collected from the investigation-derived wastes (IDW) generated during the soil sampling. Documentation of the IDW results is provided in Appendix I. Analytical laboratory reports for historical soil data were provided previously to the NMED and are not reproduced in this report.

As shown in Table 2-1, no gasoline constituents were detected at concentrations exceeding the SSLs. Benzene, ethylbenzene, isopropylbenzene, naphthalene, toluene, and xylenes have been detected in a number of samples at concentrations exceeding the DAF1 value. These DAF1 exceedances generally occurred in samples collected from depths of about 20 to 35 ft bgs. With the exception of benzene detected above the DAF 1 value in the sample collected from 16 to 17 ft bgs in Boring HVW-09, none of the detected exceedances occurred in soils shallower than 20 ft bgs.

5.2 Groundwater

Regulatory standards/screening values were used for characterization of both vadose zone water and groundwater in the Regional Aquifer. In vadose zone water, data were

screened against regulatory standards/screening values in order to characterize current groundwater conditions and to identify constituents of potential concern (COPCs) that may be important with respect to impacts to the Regional Aquifer. However, it is important to note that the vadose zone water does not represent a viable water resource. The regulatory criteria used to evaluate groundwater data included the following:

- Title 20 (Environmental Protection) NMAC Chapter 6 (Water Quality) Part 2 (Ground and Surface Water Protection) Subsection 3103 (Standards for Groundwater of 10,000 mg/L TDS Concentration or Less) (20 NMAC 6.2.3103). These standards are also referred to as the NMED WQCC standards;

- NMED. Hazardous Waste Bureau and Groundwater Quality Bureau, Voluntary Remediation Program, Technical Background Document for Development of Soil Screening Levels, Revision 4.0, June 2006. This publication also provides screening for tapwater levels; and

- USEPA Primary and Secondary Drinking Water Standards, June 16, 2003.

The hierarchy for screening both vadose zone water and Regional Aquifer data sets is presented below:

- Groundwater data were compared to the lowest value of the USEPA MCL (USEPA, 2003a) or NMED WQCC (1995) standards;

- If neither a NMED WQCC nor a USEPA MCL exists for an analyte, then the groundwater data were compared to the New Mexico Tapwater value; and,

- If neither a NMED WQCC, nor a USEPA MCL, nor a New Mexico Tapwater screening value exists for a specific analyte, then the groundwater data were compared to the USEPA Tapwater screening value. The USEPA Tapwater screening values for carcinogenic COPCs were adjusted upward by a factor of 10 to be comparable with the New Mexico Tapwater screening values, which are based on a target risk level of 10^{-5}. These adjustments were made based on guidance from NMED regulatory oversight (Andress, pers. comm. 2009).

5.2.1 Shallow (Vadose Zone) Water

5.2.1.1 Light Non-aqueous Phase Liquid (LNAPL) Occurrence

Measureable LNAPL has been detected intermittently in vadose monitoring wells since early 2009 (refer to Table 2-6 and Figure 3-2). Product levels have ranged from 0.01 to 1.5 ft, with wells HVW-05 and HVW-08 having the largest amounts of product. Product samples were collected in May and November 2009 and submitted for laboratory analyses, as described in Sections 3.1.5 and 3.1.7. The analyses confirmed that the product was slightly weathered gasoline, which most resembled an 87 octane gasoline. The lateral extent of the product is limited to a relatively small area. The analytical results for the product samples are provided in Appendix D-4.

As discussed in Section 3.3, product recovery tests were conducted in November 2009, January 2010, and March 2010. Data and field notes related to the product recovery tests are provided in Appendix G. The maximum quantity of product recovered via bailing or the GeoSorb passive recovery application at any well was approximately 0.23 gallons and recovered volumes were generally less than 0.1 gallon. After product removal, it generally took several days for a recoverable quantity of product to return to the well. In addition, some of the wells bailed dry during the bail-down tests. This information suggests that active product recovery using an engineered system is not practicable. The passive recovery system proved successful in removing the limited volume of product from the wells.

5.2.1.2 Dissolved Constituents in Vadose Zone Water:

The evaluation of the dissolved constituent concentrations in the vadose zone is limited to wells that have not exhibited the presence of free phase product during any of the monitoring events and consistently have a water column in the well: HVW-02, HVW-04, and HVW-06. wells HVW-01, HVW-07, and HVW-09 are typically dry. Because of the presence of free phase product in other vadose zone wells, the results of dissolved aqueous concentrations of constituents are unreliable and may not be representative of true groundwater conditions at these wells.

Only benzene was detected above its regulatory standard in water from HVW-06. Concentrations of the gasoline constituents 1,2,4-trimethylbenzene, benzene, m,p-xylene, MTBE, naphthalene, and o-xylene have been detected above regulatory standards in water samples from HVW-02 and HVW-04; toluene was also detected above the regulatory standard in water from HVW-02.

The analytical data for vadose zone water are summarized in Table 2-3 and the results of VOC analyses are presented on Figure 3-2. Analytical laboratory reports for vadose zone water data collected in 2009 are provided in Appendix D-2. Samples of IDW were collected during the vadose zone water sampling events. Documentation for the IDW characterization is provided in Appendix I. Analytical laboratory reports for historical data were previously provided to the NMED and are not reproduced in this report.

5.2.2 Regional Aquifer

Groundwater samples have been collected from the Regional Aquifer monitoring wells (HMW-48, HMW-49, HMW-50 and HMW-52) since June 2000. No gasoline constituents have been detected above the regulatory standards in any of the samples. With the exception of MTBE, no gasoline constituents have been detected in any samples. MTBE has been detected in samples from HMW-52 since 2007. Concentrations of MTBE in HMW-52 have generally declined over time from 19.9 µg/L in 2007 to 7.91 µg/L in March 2010. All of the MTBE concentrations detected in HMW-52 are an order of magnitude below the NMED Tapwater Standard of 125 µg/L.

Based on these findings, there is no indication that constituents from the vadose zone water have affected the Regional Aquifer at concentrations above regulatory standards. The declining concentrations of MTBE in Well HMW-52 over time suggest that there is little or no additional contaminant mass entering the Regional Aquifer. However, as discussed in Section 7 of this report, continued long-term monitoring is recommended to monitor conditions in the Regional Aquifer.

The analytical data for regional groundwater are summarized in Table 2-4. Analytical laboratory reports for the 2009 and 2010 data are provided in Appendix D-3. Samples of IDW were collected during the regional groundwater sampling events. Documentation for the IDW characterization is provided in Appendix I. Analytical laboratory reports for historical data were previously provided to the NMED and are not reproduced in this report.

5.3 Results of Aquifer Tests

The geologic setting for the generalized conceptual model for the TSA Area is understood to be a complex system of high permeability alluvial/fluvial channel form features surrounded by lower permeability deposits. In the vadose zone, saturated conditions may occur locally in higher permeable materials, but there is generally low

spatial hydraulic connectivity between high permeability channel form features, resulting in complex water levels, flow paths and contaminant distribution.

Hydraulic testing was conducted in late April 2009 in Regional Aquifer wells and in vadose zone wells to further understand the hydrogeologic conditions at the Site and to support evaluation of remedial objectives and alternatives. Details on the testing methodologies are provided in Appendix A, and the data collected during the testing are provided in Appendix F. The results of the hydraulic tests are as follows:

- When slugs were placed in each of the four Regional Aquifer wells, no effects were seen in any of the observation wells during the slug tests, indicating a lack of connectivity.

- Estimates of hydraulic conductivity (K) at Regional Aquifer wells HMW-48, HMW-49, and HMW-50 were approximately 2.8, 1.7, and 2.3 ft/day, respectively. The estimate of K at HMW-52 was considerably less at 0.08 ft/day.

- When slugs were placed in vadose zone wells HVW-04 and HVW-05, with one exception, no response was seen in any of the observation wells (also screened in the vadose zone). There was a very slight response in HVW-10 when the slug was placed in HVW-05, which was only five feet away. These results indicate a lack of connectivity between wells screened in the saturated soils at the TSA.

- The estimated K value for HVW-4 is 15.4 ft/day, and the estimated K value for HVW-5 is 3.1 ft/day, using an average aquifer thickness of 4.2 feet, based on the boring logs for HVW-5 and HVW-10.

5.4 Results of Product Recovery Tests

Product recovery tests were conducted in November 2009, January 2010, and between March 22 and April 12, 2010. Between March 22 and April 12, 2010, passive product recovery pilot tests were conducted using a GeoSorb System in wells HVW-03, HVW-05, and HVW-08; HVW-10 was hand bailed during these tests. The test methodologies are provided in Appendix A and the results of these tests are described below. The data collected during these tests are provided in Appendix G.

5.4.1 November 2009 Product Recovery Tests Summary

The November 2009 tests consisted of approximately one-day product baildown tests in shallow wells HVW-05, HVW-08, and HVW-10, as described in Appendix A. The results are as follows:

- For HVW-05, a total of 154.1 milliliters (mL) of product were removed initially. LNAPL recovery stabilized after 4.5 hours on November 16, 2009 with product thickness measured at 0.15 ft, approximately 35% of the initial product thickness. After approximately 21 hours, the product thickness measured on November 17, 2009 was 0.21 ft, which was approximately 50% of the original product thickness.

- HVW-08 bailed dry, so it was assumed that all product had been removed. A total of 281.9 mL of product were removed initially. LNAPL drawdown stabilized after 2.8 hours on November 16, with product thickness measured at 0.29 ft, approximately 47% of the original product thickness. After approximately 19 hours, the product thickness was 0.53 ft, which was approximately 85% of the original product thickness.

- HVW-10 bailed dry so it was assumed that all product was removed. No measurable product was recovered initially. The test was run for approximately one hour on November 16, with product thickness measured at 0.35 ft, approximately 80% of the original product thickness. After approximately 17 hours, the product thickness was 0.36 ft, virtually unchanged from the previous day.

- The product and water level drawdown data was modeled using AQTESOLV™ to estimate the hydraulic conductivity of the groundwater and LNAPL using the Bouwer-Rice Method (Bouwer and Rice, 1976) and the Cooper Method (Cooper and Jacob, 1946) for comparison (Appendix G). The Cooper Method was not applicable to data collected for HVW-08 and HVW-10. The results of the Bouwer-Rice Method indicated hydraulic conductivity value of approximately 6 x 10^{-5} cm/s. Results for LNAPL-corrected conductivity ranged from 3 x10^{-3} cm/s (HVW-05) to 8 x 10^{-5} cm/s (HVW-10) and 9 x10^{-5} cm/s (HVW-08).

5.4.2 January 2010 Product Recovery Tests Summary

The January 2010 tests consisted of one-week product baildown tests in shallow wells HVW-03, HVW-05, HVW-08, and HVW-10, as described in Appendix A. The results of these tests are as follows:

- Over the three days that product was recovered from each well, a total of 607, 550, 1,424 and 1,000 mL were bailed from HVW-03, HVW-05, HVW-08 and HVW-10, respectively. At each location, the recoverable amount of product decreased with each event.

These test results demonstrate that there is negligible product with limited recoverability in the saturated soils beneath the TSA.

5.4.3 March 2010 Passive Product Recovery Pilot Test Summary

Based on the limited recoverable quantities observed during the November 2009 and January 2010 product recovery tests, it was determined that a passive recovery system would likely be the most appropriate technology for product recovery in the TSA vadose zone wells. Between March 22 and April 22, 2010, a pilot test using the GeoSorb passive product recovery system described in Section 3.3, was implemented at wells HVW-03, HVW-05, and HVW-08. HVW-10 also had recoverable product, but because HVW-10 is a one-inch diameter well, product was hand bailed from this well during the test. Details on the test methodology are provided in Appendix A, and data collected during the tests are provided in Appendix G. The results of the passive product recovery test are as follows:

- At the beginning of the test, HVW-03 had 0.05 ft of product, HVW-05 had 0.22 ft of product, and HVW-08 had 0.44 ft of product. On the third week, when the passive recovery systems were removed, neither HVW-03 nor HVW-05 had recoverable product and only 150 mL were recovered from HVW-08. By week four, none of the product levels in the three wells had fully recovered to their initial levels. At the end of the test, product levels measured were 0.01 ft in HVW-03, 0.03 ft in HVW-05, and 0.2 ft in HVW-08.

- The GeoSorb passive recovery systems were effective in removing product from wells HVW-03, HVW-05, and HVW-08.

- At the beginning of the pilot test, HVW-10 had 0.31 ft of product. A total of 185 mL of product were bailed from HVW-10 during the 3-week test. At the end of the test, HVW-10 had 0.27 ft of product.

Based on the pilot test, passive product recovery is an effective method to address the negligible volume of product that remains in the vadose zone at the HELSTF TSA.

5.5 Risk Assessment Findings

This section of the report summarizes the findings from the supplemental risk assessment work. Detailed discussions of the risk assessment methodologies and findings are provided in Appendix H.

5.5.1 Human Health Risk Summary

The TSA Site is wholly contained within an operating military installation, and based on past, present, and anticipated future land use, it is reasonable to assume that it will remain in military use and will not be developed for commercial or residential development. There are no current complete human exposure pathways at the Site. The entire Site is paved and there are no buildings over the spill site. The affected vadose zone water beneath the Site is anthropogenic and is generally not a sustainable water resource because of its poor quality, limited occurrence and low yield. Potable water for the area originates from water wells located several miles from the Site near the basin margins and is piped to the areas via WSMR's water distribution system. This will remain the source of potable water for the TSA into the foreseeable future.

Findings from the human health risk assessment (HHRA) indicate that the only potentially complete exposure pathways are related to the following hypothetical future exposure scenarios:

- Hypothetical future site worker exposed to VOCs in total soil and saturated vadose zone soil water through vapor migration into indoor air and,
- Hypothetical future resident (adult and child) exposed to VOCs in total soil and saturated vadose zone soil water through vapor migration into indoor air.

5.5.1.1 Soil Exposure via Direct Contact

In accordance with NMED guidance (NMED, 2009a), constituent concentrations in combined surface and subsurface soil (0 to 10 ft bgs) were compared to health-based screening levels and the calculated ratios summed and multiplied by $1x10^{-5}$ for carcinogens or by 1 for non-carcinogens. The total screening risks for carcinogenic effects were less than the NMED target risk of 1×10^{-5}. The total screening hazard indices were less than the NMED target hazard index of 1. The results of this data screening process indicate that after comparison to health-based SSLs for construction

worker exposure, no COPCs were selected for combined surface and subsurface soil at the Site. This demonstrates that the constituent concentrations in combined surface and subsurface soil at the TSA Site are unlikely to result in adverse health impacts to future construction workers via direct contact exposure (i.e., ingestion, inhalation of vapor/dust, dermal). A detailed discussion of this evaluation is presented in Appendix H.

5.5.1.2 Vapor Intrusion Scenarios

All detected VOCs in total soil (i.e., vadose zone) were selected as COPCs for the future vapor intrusion evaluation because there are no NMED or USEPA soil screening levels screening levels that are protective of the vapor intrusion pathway. Saturated vadose zone soil water COPCs were selected by comparing the analytical data with vapor intrusion screening levels for groundwater. The evaluation of risk related to vapor intrusion from total soil is summarized below. A more detailed discussion of this evaluation is presented in Appendix H.

- Under hypothetical future conditions, the excess lifetime cancer risk (ELCR) and hazard index (HI) are within or below acceptable target risk ranges for hypothetical exposure of workers in the Medical Aid Building to indoor air containing VOCs originating from affected soils or saturated vadose zone water.

- The total ELCR value for the future vapor intrusion exposure pathway for the residential scenario is above the acceptable target risk range of 10^{-6} to 10^{-4} for carcinogenic effects. The total HI values for the future vapor intrusion exposure pathway for the site worker scenario and the residential scenario are above the benchmark of 1 for non-cancer hazard, indicating adverse non-carcinogenic effects are possible if all assumptions are met and a building were to be built immediately above the release area with no vapor intrusion barrier.

5.5.2 Ecological Risk Assessment

A SLERA and a BERA were completed to evaluate whether ecological receptors may be adversely impacted by exposure to site-related constituents detected in combined surface and subsurface soil (0 to 10 ft bgs), and to conduct food chain modeling for the Constituent of Potential Ecological Concern (COPEC) identified as bioaccumulative (i.e., cadmium). The results of the SLERA and BERA for direct contact exposure and for food chain modeling indicate there is adequate information to conclude that potential current and future impacts are unlikely to occur for ecological receptors

potentially exposed to constituents in soil. Therefore, no further ecological evaluation is warranted. A more detailed discussion of the ecological risk assessments is presented in Appendix H.

6. Conclusions

The following is a summary of site conditions based on a comprehensive review and evaluation of historical and current data:

- The highest residual gasoline constituent concentrations are located in fine-grained, saturated sediments located 20 to 35 ft bgs. Neither air sparging nor biosparging is effective on these types of sediments. The coarse-grained soils in the upper 20 ft were successfully remediated by the SVE operated in 2000.

- Vadose zone water occurs in the saturated sediments from depths of approximately 20 to 35 ft bgs and extends to approximately 75 ft bgs. It occurs in discontinuous sand lenses that occur at varying depths and in poor hydraulic communication. Results from hydraulic testing and sampling in the vadose zone supports the model of complex geologic architecture and limited hydraulic connectivity of high permeability materials. Meaningful pumping rates cannot be sustained in vadose zone wells and water levels in adjacent monitoring wells are generally unaffected by pumping, indicating a very limited radius of influence at an individual well. The vadose zone water is anthropogenic and is generally not a sustainable water resource because of its limited occurrence. Potable water for the TSA originates from water wells located over nine miles from the Site near the basin margins and is piped to the areas via WSMR's water distribution system. This will remain the source of potable water for the TSA into the foreseeable future.

- Product is present on the vadose zone water in some locations. However, the lateral extent of the product is limited to a relatively small area. Based on recent testing, product volume is stable and/or declining and the recoverability of the product is negligible.

- The source of the spill was removed in March 2000. There are no other sources of gasoline in the area. Dissolved constituent concentrations in the vadose zone water appear to be stable. With the exception of MTBE, which is present in only one downgradient regional well (HMW-52) at a concentration well below the NMED Tapwater Standard, no gasoline constituents have been detected in regional

groundwater during the 10 years following the spill in 2000. MTBE concentrations in HMW-52 are declining.

- There are no current risks to human health or ecological receptors. There are future risks associated with inhalation from vapor intrusion, but these will be addressed through institutional controls.

Based on the site conditions described above, the remediation technologies proposed in the approved CMI Work Plan, dated September 25, 2007 (biosparging or air sparging coupled with SVE) are not appropriate or warranted and the Site is eligible for CAC with Controls.

- Because the upper 10 feet of affected soils (the depth considered for direct human exposure) has already been remediated to concentrations below cleanup levels, no further SVE is required.

- Residual contamination in deeper soils does not represent any risk to human or ecological receptors except for risk associated with a hypothetical future vapor intrusion scenario. Because of the fine-grained nature of these soils and the absence of risk, further remediation of these soils is impracticable and is not warranted.

- The complex hydrogeologic conditions and lack of hydraulic connectivity within the water-bearing vadose zone soils indicate that sparging/biosparging are impracticable and will not be effective.

- Because there is no risk of exposure to the vadose zone water, and there are no constituents in the regional water that exceed cleanup levels, the most appropriate action is continued long-term monitoring of the Regional Aquifer.

7. Recommendations

Based on the information provided in this report, corrective action has been completed and WSMR requests NMED concurrence of CAC with Controls. The proposed controls include the following.

- Long-Term Monitoring (LTM) will be continued and will include collecting samples from the four Regional Groundwater monitoring wells (HMW-48, HMW-49, HMW-50 and HMW-52).

- The wells will be monitored on an annual basis.
- Monitoring will include fluid level measurements from all of the existing vadose zone wells and Regional Aquifer monitoring wells.
- Groundwater samples will be collected from the four regional wells for analytical testing of BTEX and MTBE.
- The LTM data will be presented in the annual facility-wide Groundwater Monitoring Report.
- LTM will be continued until such time that data demonstrate stable or declining dissolved concentrations and the NMED approves a cessation of the LTM.

- A passive product recovery program will be implemented and will include the placement of absorbent socks into the vadose zone wells that contain product. The socks will be replaced on an as-needed basis, at least annually. During each replacement event, the thickness of the product on the sock will be noted and an estimate will be made of the volume of fluids recovered.

- Institutional Controls will be implemented to prevent future exposure of the affected soils to site workers via inhalation of vapors. Specifically, land use controls will be implemented to prevent construction of future buildings over the affected area or will require that any future buildings include vapor barriers.

Upon NMED's concurrence of these recommendations, WSMR will prepare and submit a Corrective Action Completion with Controls Petition to modify the Permit. Once approved by the NMED, the controls will become part of the administrative record. Copies of the petition and supporting information will also be maintained by WSMR's Public Works Department. Signs will be erected in the TSA Area indicating that the area is subject to land use controls and that further information is available from WSMR's Public Works Department.

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Tables

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-PUMP 3'-2" 03/17/00	TSA-PUMP 8.5'-9.0' 03/17/00	TSA-LINE 6'-6" 03/17/00	TSA-LINE 8.5'-9.0' 03/17/00	TSA-BLACKTOP 3.5'-4.0' 03/17/00	TSA-BLACKTOP 9.0'-9.5' 03/17/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-PUMP 3'-2" 03/17/00	TSA-PUMP 8.5'-9.0' 03/17/00	TSA-LINE 6'-6" 03/17/00	TSA-LINE 8.5'-9.0' 03/17/00	TSA-BLACKTOP 3.5'-4.0' 03/17/00	TSA-BLACKTOP 9.0'-9.5' 03/17/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-PUMP 3'-2" 03/17/00	TSA-PUMP 8.5'-9.0' 03/17/00	TSA-LINE 6'-6" 03/17/00	TSA-LINE 8.5'-9.0' 03/17/00	TSA-BLACKTOP 3.5'-4.0' 03/17/00	TSA-BLACKTOP 9.0'-9.5' 03/17/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	15000	29000	<50	<50	<50	23000

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-PUMP 3'-2" 03/17/00	TSA-PUMP 8.5'-9.0' 03/17/00	TSA-LINE 6'-6" 03/17/00	TSA-LINE 8.5'-9.0' 03/17/00	TSA-BLACKTOP 3.5'-4.0' 03/17/00	TSA-BLACKTOP 9.0'-9.5' 03/17/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	**320**	**280**	*0.052*	*<0.050*	*0.150*	**210**
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-PUMP 3'-2" 03/17/00	TSA-PUMP 8.5'-9.0' 03/17/00	TSA-LINE 6'-6" 03/17/00	TSA-LINE 8.5'-9.0' 03/17/00	TSA-BLACKTOP 3.5'-4.0' 03/17/00	TSA-BLACKTOP 9.0'-9.5' 03/17/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	**570**	**560**	*<0.050*	*<0.050*	*<0.050*	**340**
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	*1800*	*1600*	0.120	0.058	0.260	*1200*
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*75*	*34*	*<0.050*	*<0.050*	*0.054*	*25*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	**1700**	**1700**	<0.050	<0.050	<0.050	*990*

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 1.5-2.0 05/02/00	TSA-SB-01 6.5-7.0 05/02/00	TSA-SB-01 11.5-12.0 05/02/00	TSA-SB-01 (PDP) 11.5-12.0 05/02/00	TSA-SB-01 16.5-17.0 05/02/00	TSA-SB-01 21.5-22.0 05/02/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 1.5-2.0 05/02/00	TSA-SB-01 6.5-7.0 05/02/00	TSA-SB-01 11.5-12.0 05/02/00	TSA-SB-01 (PDP) 11.5-12.0 05/02/00	TSA-SB-01 16.5-17.0 05/02/00	TSA-SB-01 21.5-22.0 05/02/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 1.5-2.0 05/02/00	TSA-SB-01 6.5-7.0 05/02/00	TSA-SB-01 11.5-12.0 05/02/00	TSA-SB-01 (PDP) 11.5-12.0 05/02/00	TSA-SB-01 16.5-17.0 05/02/00	TSA-SB-01 21.5-22.0 05/02/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	22	1400	2500	600000J	24000	6500

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 1.5-2.0 05/02/00	TSA-SB-01 6.5-7.0 05/02/00	TSA-SB-01 11.5-12.0 05/02/00	TSA-SB-01 (PDP) 11.5-12.0 05/02/00	TSA-SB-01 16.5-17.0 05/02/00	TSA-SB-01 21.5-22.0 05/02/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.250*	**16**	**34**	**49000**	*360*	*110*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 1.5-2.0 05/02/00	TSA-SB-01 6.5-7.0 05/02/00	TSA-SB-01 11.5-12.0 05/02/00	TSA-SB-01 (PDP) 11.5-12.0 05/02/00	TSA-SB-01 16.5-17.0 05/02/00	TSA-SB-01 21.5-22.0 05/02/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.130*	**70**	*95*	*250000*	*780*	*240*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.750	*160*	*270*	*610000*	*2400*	*770*
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*0.270*	*4.1*	*7.7*	*<30000*	*72*	*22*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	*0.450*	*220*	*300*	*750000*	*2400*	*740*

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 26.5-27.0 05/02/00	TSA-SB-01 31.5-32.0 05/02/00	TSA-SB-01 36.5-37.0 05/02/00	TSA-SB-01 (PDP) 36.5-37.0 05/02/00	TSA-SB-01 41.5-42.0 05/02/00	TSA-SB-02 1.5-2.0 05/04/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 26.5-27.0 05/02/00	TSA-SB-01 31.5-32.0 05/02/00	TSA-SB-01 36.5-37.0 05/02/00	TSA-SB-01 (PDP) 36.5-37.0 05/02/00	TSA-SB-01 41.5-42.0 05/02/00	TSA-SB-02 1.5-2.0 05/04/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 26.5-27.0 05/02/00	TSA-SB-01 31.5-32.0 05/02/00	TSA-SB-01 36.5-37.0 05/02/00	TSA-SB-01 (PDP) 36.5-37.0 05/02/00	TSA-SB-01 41.5-42.0 05/02/00	TSA-SB-02 1.5-2.0 05/04/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	31	<20	23	0.200J	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 26.5-27.0 05/02/00	TSA-SB-01 31.5-32.0 05/02/00	TSA-SB-01 36.5-37.0 05/02/00	TSA-SB-01 (PDP) 36.5-37.0 05/02/00	TSA-SB-01 41.5-42.0 05/02/00	TSA-SB-02 1.5-2.0 05/04/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.160*	*<0.050*	*<0.050*	*<0.850*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-01 26.5-27.0 05/02/00	TSA-SB-01 31.5-32.0 05/02/00	TSA-SB-01 36.5-37.0 05/02/00	TSA-SB-01 (PDP) 36.5-37.0 05/02/00	TSA-SB-01 41.5-42.0 05/02/00	TSA-SB-02 1.5-2.0 05/04/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.085*	*<0.050*	*<0.050*	*<0.850*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.490	<0.050	<0.050	0.580J	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.050*	*<1.0*	*<1.0*	*<0.850*	*<1.0*	*<1.0*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	*0.210*	<0.050	<0.050	*0.360J*	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 6.5-7.0 05/04/00	TSA-SB-02 11.5-12.0 05/04/00	TSA-SB-02 16.5-17.0 05/04/00	TSA-SB-02 (PDP) 16.5-17.0 05/04/00	TSA-SB-02 21.5-22.0 05/04/00	TSA-SB-02 26.5-27.0 05/04/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 6.5-7.0 05/04/00	TSA-SB-02 11.5-12.0 05/04/00	TSA-SB-02 16.5-17.0 05/04/00	TSA-SB-02 (PDP) 16.5-17.0 05/04/00	TSA-SB-02 21.5-22.0 05/04/00	TSA-SB-02 26.5-27.0 05/04/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 6.5-7.0 05/04/00	TSA-SB-02 11.5-12.0 05/04/00	TSA-SB-02 16.5-17.0 05/04/00	TSA-SB-02 (PDP) 16.5-17.0 05/04/00	TSA-SB-02 21.5-22.0 05/04/00	TSA-SB-02 26.5-27.0 05/04/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<20	<20	<0.26	16000	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 6.5-7.0 05/04/00	TSA-SB-02 11.5-12.0 05/04/00	TSA-SB-02 16.5-17.0 05/04/00	TSA-SB-02 (PDP) 16.5-17.0 05/04/00	TSA-SB-02 21.5-22.0 05/04/00	TSA-SB-02 26.5-27.0 05/04/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.0052*	*180*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 6.5-7.0 05/04/00	TSA-SB-02 11.5-12.0 05/04/00	TSA-SB-02 16.5-17.0 05/04/00	TSA-SB-02 (PDP) 16.5-17.0 05/04/00	TSA-SB-02 21.5-22.0 05/04/00	TSA-SB-02 26.5-27.0 05/04/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.075*	*<0.075*	*<0.075*	<0.0052	*490*	*<0.075*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.175	<0.175	<0.175	- -	*1100*	<0.175
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	<0.050	<0.0052	*1300*	0.140
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.050*	*<0.050*	*<0.050*	<0.0052	*<10*	*<0.050*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.075	<0.075	<0.075	- -	*430*	<0.075
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	0.0029J	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 31.5-32.0 05/04/00	TSA-SB-02 (PDP) 31.5-32.0 05/04/00	TSA-SB-03 1.5-2.0 05/03/00	TSA-SB-03 6.5-7.0 05/03/00	TSA-SB-03 11.5-12.0 05/03/00	TSA-SB-03 16.5-17.0 05/03/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 31.5-32.0 05/04/00	TSA-SB-02 (PDP) 31.5-32.0 05/04/00	TSA-SB-03 1.5-2.0 05/03/00	TSA-SB-03 6.5-7.0 05/03/00	TSA-SB-03 11.5-12.0 05/03/00	TSA-SB-03 16.5-17.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 31.5-32.0 05/04/00	TSA-SB-02 (PDP) 31.5-32.0 05/04/00	TSA-SB-03 1.5-2.0 05/03/00	TSA-SB-03 6.5-7.0 05/03/00	TSA-SB-03 11.5-12.0 05/03/00	TSA-SB-03 16.5-17.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<0.32	<20	<20	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 31.5-32.0 05/04/00	TSA-SB-02 (PDP) 31.5-32.0 05/04/00	TSA-SB-03 1.5-2.0 05/03/00	TSA-SB-03 6.5-7.0 05/03/00	TSA-SB-03 11.5-12.0 05/03/00	TSA-SB-03 16.5-17.0 05/03/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.0063*	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-02 31.5-32.0 05/04/00	TSA-SB-02 (PDP) 31.5-32.0 05/04/00	TSA-SB-03 1.5-2.0 05/03/00	TSA-SB-03 6.5-7.0 05/03/00	TSA-SB-03 11.5-12.0 05/03/00	TSA-SB-03 16.5-17.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.075*	<0.0063	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.175	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.0063	<0.050	<0.050	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.050*	<0.0063	*<0.100*	*<0.100*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.075	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	0.0032J	<0.050	<0.050	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-03 (PDP) 16.5-17.0 05/03/00	TSA-SB-03 21.5-22.0 05/03/00	TSA-SB-03 26.5-27.0 05/03/00	TSA-SB-03 31.5-32.0 05/03/00	TSA-SB-03 (PDP) 31.5-32.0 05/03/00
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-03 (PDP) 16.5-17.0 05/03/00	TSA-SB-03 21.5-22.0 05/03/00	TSA-SB-03 26.5-27.0 05/03/00	TSA-SB-03 31.5-32.0 05/03/00	TSA-SB-03 (PDP) 31.5-32.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-03 (PDP) 16.5-17.0 05/03/00	TSA-SB-03 21.5-22.0 05/03/00	TSA-SB-03 26.5-27.0 05/03/00	TSA-SB-03 31.5-32.0 05/03/00	TSA-SB-03 (PDP) 31.5-32.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	0.22J	<20	<20	<20	0.056J

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-03 (PDP) 16.5-17.0 05/03/00	TSA-SB-03 21.5-22.0 05/03/00	TSA-SB-03 26.5-27.0 05/03/00	TSA-SB-03 31.5-32.0 05/03/00	TSA-SB-03 (PDP) 31.5-32.0 05/03/00
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.0056*	*<0.050*	*<0.050*	*<0.050*	*<0.0061*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-03 (PDP) 16.5-17.0 05/03/00	TSA-SB-03 21.5-22.0 05/03/00	TSA-SB-03 26.5-27.0 05/03/00	TSA-SB-03 31.5-32.0 05/03/00	TSA-SB-03 (PDP) 31.5-32.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.0056	*<0.050*	*<0.050*	*<0.050*	<0.0061
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.0056	0.067	<0.050	<0.050	<0.0061
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.0056	*<0.100*	*<0.100*	*<0.100*	<0.0061
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	0.005J	<0.050	<0.050	<0.050	0.0032J

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 1.5-2.0 05/03/00	TSA-SB-04 6.5-7.0 05/03/00	TSA-SB-04 11.5-12.0 05/03/00	TSA-SB-04 16.5-17.0 05/03/00	TSA-SB-04 (PDP) 16.5-17.0 05/03/00	TSA-SB-04 21.5-22.0 05/03/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 1.5-2.0 05/03/00	TSA-SB-04 6.5-7.0 05/03/00	TSA-SB-04 11.5-12.0 05/03/00	TSA-SB-04 16.5-17.0 05/03/00	TSA-SB-04 (PDP) 16.5-17.0 05/03/00	TSA-SB-04 21.5-22.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 1.5-2.0 05/03/00	TSA-SB-04 6.5-7.0 05/03/00	TSA-SB-04 11.5-12.0 05/03/00	TSA-SB-04 16.5-17.0 05/03/00	TSA-SB-04 (PDP) 16.5-17.0 05/03/00	TSA-SB-04 21.5-22.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	unavailable	<20	<20	0.100J	21

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 1.5-2.0 05/03/00	TSA-SB-04 6.5-7.0 05/03/00	TSA-SB-04 11.5-12.0 05/03/00	TSA-SB-04 16.5-17.0 05/03/00	TSA-SB-04 (PDP) 16.5-17.0 05/03/00	TSA-SB-04 21.5-22.0 05/03/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*0.053*	*<0.050*	*0.016*	*0.700*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 1.5-2.0 05/03/00	TSA-SB-04 6.5-7.0 05/03/00	TSA-SB-04 11.5-12.0 05/03/00	TSA-SB-04 16.5-17.0 05/03/00	TSA-SB-04 (PDP) 16.5-17.0 05/03/00	TSA-SB-04 21.5-22.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.050*	0.0029J	*0.082*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	0.120	<0.050	0.034	1.30
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.100*	*<0.100*	*<0.100*	<0.0053	*0.220*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	<0.050	<0.050	<0.050	0.0094	*0.190*

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 26.5-27.0 05/03/00	TSA-SB-04 31.5-32.0 05/03/00	TSA-SB-04 (PDP) 31.5-32.0 05/03/00	TSA-SB-05 1.5-2.0 05/03/00	TSA-SB-05 6.5-7.0 05/03/00	TSA-SB-05 11.5-12.0 05/03/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 26.5-27.0 05/03/00	TSA-SB-04 31.5-32.0 05/03/00	TSA-SB-04 (PDP) 31.5-32.0 05/03/00	TSA-SB-05 1.5-2.0 05/03/00	TSA-SB-05 6.5-7.0 05/03/00	TSA-SB-05 11.5-12.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 26.5-27.0 05/03/00	TSA-SB-04 31.5-32.0 05/03/00	TSA-SB-04 (PDP) 31.5-32.0 05/03/00	TSA-SB-05 1.5-2.0 05/03/00	TSA-SB-05 6.5-7.0 05/03/00	TSA-SB-05 11.5-12.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<20	0.040J	<20	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 26.5-27.0 05/03/00	TSA-SB-04 31.5-32.0 05/03/00	TSA-SB-04 (PDP) 31.5-32.0 05/03/00	TSA-SB-05 1.5-2.0 05/03/00	TSA-SB-05 6.5-7.0 05/03/00	TSA-SB-05 11.5-12.0 05/03/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.0057*	*<0.050*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-04 26.5-27.0 05/03/00	TSA-SB-04 31.5-32.0 05/03/00	TSA-SB-04 (PDP) 31.5-32.0 05/03/00	TSA-SB-05 1.5-2.0 05/03/00	TSA-SB-05 6.5-7.0 05/03/00	TSA-SB-05 11.5-12.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.050*	<0.0057	*<0.050*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	<0.0057	<0.050	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.100*	<0.0057	*<0.100*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	<0.050	<0.0057	<0.050	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 16.5-17.0 05/03/00	TSA-SB-05 (PDP) 16.5-17.0 05/03/00	TSA-SB-05 21.5-22.0 05/03/00	TSA-SB-05 26.5-27.0 05/03/00	TSA-SB-05 31.5-32.0 05/03/00
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 16.5-17.0 05/03/00	TSA-SB-05 (PDP) 16.5-17.0 05/03/00	TSA-SB-05 21.5-22.0 05/03/00	TSA-SB-05 26.5-27.0 05/03/00	TSA-SB-05 31.5-32.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 16.5-17.0 05/03/00	TSA-SB-05 (PDP) 16.5-17.0 05/03/00	TSA-SB-05 21.5-22.0 05/03/00	TSA-SB-05 26.5-27.0 05/03/00	TSA-SB-05 31.5-32.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<0.300	4100	71	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 16.5-17.0 05/03/00	TSA-SB-05 (PDP) 16.5-17.0 05/03/00	TSA-SB-05 21.5-22.0 05/03/00	TSA-SB-05 26.5-27.0 05/03/00	TSA-SB-05 31.5-32.0 05/03/00
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*0.020*	*38*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 16.5-17.0 05/03/00	TSA-SB-05 (PDP) 16.5-17.0 05/03/00	TSA-SB-05 21.5-22.0 05/03/00	TSA-SB-05 26.5-27.0 05/03/00	TSA-SB-05 31.5-32.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	<0.006	*130*	*0.140*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	0.035	*340*	0.360	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	<0.006	*6.6*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	0.010	*400*	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 (PDP) 31.5-32.0 05/03/00	TSA-SB-06 1.5-2.0 05/03/00	TSA-SB-06 6.5-7.0 05/03/00	TSA-SB-06 11.5-12.0 05/03/00	TSA-SB-06 16.5-17.0 05/03/00
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 (PDP) 31.5-32.0 05/03/00	TSA-SB-06 1.5-2.0 05/03/00	TSA-SB-06 6.5-7.0 05/03/00	TSA-SB-06 11.5-12.0 05/03/00	TSA-SB-06 16.5-17.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 (PDP) 31.5-32.0 05/03/00	TSA-SB-06 1.5-2.0 05/03/00	TSA-SB-06 6.5-7.0 05/03/00	TSA-SB-06 11.5-12.0 05/03/00	TSA-SB-06 16.5-17.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	0.064J	<20	<20	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 (PDP) 31.5-32.0 05/03/00	TSA-SB-06 1.5-2.0 05/03/00	TSA-SB-06 6.5-7.0 05/03/00	TSA-SB-06 11.5-12.0 05/03/00	TSA-SB-06 16.5-17.0 05/03/00
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.0066*	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-05 (PDP) 31.5-32.0 05/03/00	TSA-SB-06 1.5-2.0 05/03/00	TSA-SB-06 6.5-7.0 05/03/00	TSA-SB-06 11.5-12.0 05/03/00	TSA-SB-06 16.5-17.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.0066	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.0066	<0.050	<0.050	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.0066	*<0.100*	*<0.100*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.0066	<0.050	<0.050	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-06 (PDP) 16.5-17.0 05/03/00	TSA-SB-06 21.5-22.0 05/03/00	TSA-SB-06 26.5-27.0 05/03/00	TSA-SB-06 31.5-32.0 05/03/00	TSA-SB-06 (PDP) 31.5-32.0 05/03/00
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-06 (PDP) 16.5-17.0 05/03/00	TSA-SB-06 21.5-22.0 05/03/00	TSA-SB-06 26.5-27.0 05/03/00	TSA-SB-06 31.5-32.0 05/03/00	TSA-SB-06 (PDP) 31.5-32.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-06 (PDP) 16.5-17.0 05/03/00	TSA-SB-06 21.5-22.0 05/03/00	TSA-SB-06 26.5-27.0 05/03/00	TSA-SB-06 31.5-32.0 05/03/00	TSA-SB-06 (PDP) 31.5-32.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	0.051J	<20	<20	<20	0.057J

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-06 (PDP) 16.5-17.0 05/03/00	TSA-SB-06 21.5-22.0 05/03/00	TSA-SB-06 26.5-27.0 05/03/00	TSA-SB-06 31.5-32.0 05/03/00	TSA-SB-06 (PDP) 31.5-32.0 05/03/00
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.0058*	*<0.050*	*<0.050*	*<0.050*	*<0.0066*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-06 (PDP) 16.5-17.0 05/03/00	TSA-SB-06 21.5-22.0 05/03/00	TSA-SB-06 26.5-27.0 05/03/00	TSA-SB-06 31.5-32.0 05/03/00	TSA-SB-06 (PDP) 31.5-32.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.0058	*<0.050*	*<0.050*	*<0.050*	<0.0066
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.0058	<0.050	<0.050	<0.050	<0.0066
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.0058	*<0.100*	*<0.100*	*<0.100*	<0.0066
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.0058	<0.050	<0.050	<0.050	0.0048J

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 1.5-2.0 05/03/00	TSA-SB-07 6.5-7.0 05/03/00	TSA-SB-07 11.5-12.0 05/03/00	TSA-SB-07 16.5-17.0 05/03/00	TSA-SB-07 21.5-22.0 05/03/00	TSA-SB-07 26.5-27.0 05/03/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 1.5-2.0 05/03/00	TSA-SB-07 6.5-7.0 05/03/00	TSA-SB-07 11.5-12.0 05/03/00	TSA-SB-07 16.5-17.0 05/03/00	TSA-SB-07 21.5-22.0 05/03/00	TSA-SB-07 26.5-27.0 05/03/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 1.5-2.0 05/03/00	TSA-SB-07 6.5-7.0 05/03/00	TSA-SB-07 11.5-12.0 05/03/00	TSA-SB-07 16.5-17.0 05/03/00	TSA-SB-07 21.5-22.0 05/03/00	TSA-SB-07 26.5-27.0 05/03/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	21	<20	<20	<20	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 1.5-2.0 05/03/00	TSA-SB-07 6.5-7.0 05/03/00	TSA-SB-07 11.5-12.0 05/03/00	TSA-SB-07 16.5-17.0 05/03/00	TSA-SB-07 21.5-22.0 05/03/00	TSA-SB-07 26.5-27.0 05/03/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 1.5-2.0 05/03/00	TSA-SB-07 6.5-7.0 05/03/00	TSA-SB-07 11.5-12.0 05/03/00	TSA-SB-07 16.5-17.0 05/03/00	TSA-SB-07 21.5-22.0 05/03/00	TSA-SB-07 26.5-27.0 05/03/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.100*	*<0.100*	*<0.100*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 31.5-32.0 05/03/00	TSA-SB-08 1.5-2.0 05/04/00	TSA-SB-08 6.5-7.0 05/04/00	TSA-SB-08 11.5-12.0 05/04/00	TSA-SB-08 16.5-17.0 05/04/00	TSA-SB-08 (PDP) 16.5-17.0 05/04/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 31.5-32.0 05/03/00	TSA-SB-08 1.5-2.0 05/04/00	TSA-SB-08 6.5-7.0 05/04/00	TSA-SB-08 11.5-12.0 05/04/00	TSA-SB-08 16.5-17.0 05/04/00	TSA-SB-08 (PDP) 16.5-17.0 05/04/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 31.5-32.0 05/03/00	TSA-SB-08 1.5-2.0 05/04/00	TSA-SB-08 6.5-7.0 05/04/00	TSA-SB-08 11.5-12.0 05/04/00	TSA-SB-08 16.5-17.0 05/04/00	TSA-SB-08 (PDP) 16.5-17.0 05/04/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<20	<20	<20	<20	<0.26

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 31.5-32.0 05/03/00	TSA-SB-08 1.5-2.0 05/04/00	TSA-SB-08 6.5-7.0 05/04/00	TSA-SB-08 11.5-12.0 05/04/00	TSA-SB-08 16.5-17.0 05/04/00	TSA-SB-08 (PDP) 16.5-17.0 05/04/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.050*	*<0.0051*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-07 31.5-32.0 05/03/00	TSA-SB-08 1.5-2.0 05/04/00	TSA-SB-08 6.5-7.0 05/04/00	TSA-SB-08 11.5-12.0 05/04/00	TSA-SB-08 16.5-17.0 05/04/00	TSA-SB-08 (PDP) 16.5-17.0 05/04/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.075*	*<0.075*	*<0.075*	*<0.075*	<0.0051
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	*<0.175*	*<0.175*	*<0.175*	*<0.175*	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.0051
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.050*	*<0.050*	*<0.050*	*<0.050*	<0.0051
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	<0.075	<0.075	<0.075	<0.075	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	- -	- -	- -	- -	0.0029J

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-08 21.5-22.0 05/04/00	TSA-SB-08 26.5-27.0 05/04/00	TSA-SB-08 31.5-32.0 05/04/00	TSA-SB-08 (PDP) 31.5-32.0 05/04/00	TSA-SB-09 1.5-2.0 05/04/00	TSA-SB-09 6.5-7.0 05/04/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-08 21.5-22.0 05/04/00	TSA-SB-08 26.5-27.0 05/04/00	TSA-SB-08 31.5-32.0 05/04/00	TSA-SB-08 (PDP) 31.5-32.0 05/04/00	TSA-SB-09 1.5-2.0 05/04/00	TSA-SB-09 6.5-7.0 05/04/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-08 21.5-22.0 05/04/00	TSA-SB-08 26.5-27.0 05/04/00	TSA-SB-08 31.5-32.0 05/04/00	TSA-SB-08 (PDP) 31.5-32.0 05/04/00	TSA-SB-09 1.5-2.0 05/04/00	TSA-SB-09 6.5-7.0 05/04/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<20	<20	<0.29	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-08 21.5-22.0 05/04/00	TSA-SB-08 26.5-27.0 05/04/00	TSA-SB-08 31.5-32.0 05/04/00	TSA-SB-08 (PDP) 31.5-32.0 05/04/00	TSA-SB-09 1.5-2.0 05/04/00	TSA-SB-09 6.5-7.0 05/04/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.050*	*<0.0057*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-08 21.5-22.0 05/04/00	TSA-SB-08 26.5-27.0 05/04/00	TSA-SB-08 31.5-32.0 05/04/00	TSA-SB-08 (PDP) 31.5-32.0 05/04/00	TSA-SB-09 1.5-2.0 05/04/00	TSA-SB-09 6.5-7.0 05/04/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.050*	*<0.050*	<0.0057	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.061	<0.050	<0.050	<0.0057	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.100*	*<0.100*	<0.0057	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	<0.050	<0.050	0.0036J	<0.050	<0.050

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 11.5-12.0 05/04/00	TSA-SB-09 16.5-17.0 05/04/00	TSA-SB-09 (PDP) 16.5-17.0 05/04/00	TSA-SB-09 21.5-22.0 05/04/00	TSA-SB-09 26.5-27.0 05/04/00	TSA-SB-09 31.5-32.0 05/04/00
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 11.5-12.0 05/04/00	TSA-SB-09 16.5-17.0 05/04/00	TSA-SB-09 (PDP) 16.5-17.0 05/04/00	TSA-SB-09 21.5-22.0 05/04/00	TSA-SB-09 26.5-27.0 05/04/00	TSA-SB-09 31.5-32.0 05/04/00
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 11.5-12.0 05/04/00	TSA-SB-09 16.5-17.0 05/04/00	TSA-SB-09 (PDP) 16.5-17.0 05/04/00	TSA-SB-09 21.5-22.0 05/04/00	TSA-SB-09 26.5-27.0 05/04/00	TSA-SB-09 31.5-32.0 05/04/00
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	<20	<20	<0.28	<20	<20	<20

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 11.5-12.0 05/04/00	TSA-SB-09 16.5-17.0 05/04/00	TSA-SB-09 (PDP) 16.5-17.0 05/04/00	TSA-SB-09 21.5-22.0 05/04/00	TSA-SB-09 26.5-27.0 05/04/00	TSA-SB-09 31.5-32.0 05/04/00
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.050*	*<0.050*	*<0.0056*	*<0.050*	*<0.050*	*<0.050*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 11.5-12.0 05/04/00	TSA-SB-09 16.5-17.0 05/04/00	TSA-SB-09 (PDP) 16.5-17.0 05/04/00	TSA-SB-09 21.5-22.0 05/04/00	TSA-SB-09 26.5-27.0 05/04/00	TSA-SB-09 31.5-32.0 05/04/00
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.050*	*<0.050*	<0.0056	*<0.050*	*<0.050*	*<0.050*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.050	<0.050	<0.0056	<0.050	<0.050	<0.050
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100*	*<0.100*	<0.0056	*<0.100*	*<0.100*	*<0.100*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.050	<0.050	0.0044J	<0.050	<0.050	<0.050

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 (PDP) 31.5-32.0 05/04/00	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-010 11.5 - 12 05/10/04	TSA-SB-010 16.5 - 17 05/10/04	TSA-SB-010 21.5 - 22 05/10/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	***5.91***	*<2.00*	*5.65*	*6.18*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	31.2	41.6	77.2	53.0
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	*2.46*	*2.01*	*1.67*	*2.79*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	13.8	11.6	8.57	18.0
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	24.3	20.6	21.9	17.0
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	*<0.150*	*12.1*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 (PDP) 31.5-32.0 05/04/00	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-010 11.5 - 12 05/10/04	TSA-SB-010 16.5 - 17 05/10/04	TSA-SB-010 21.5 - 22 05/10/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	***<0.248***	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 (PDP) 31.5-32.0 05/04/00	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-010 11.5 - 12 05/10/04	TSA-SB-010 16.5 - 17 05/10/04	TSA-SB-010 21.5 - 22 05/10/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<0.32	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 (PDP) 31.5-32.0 05/04/00	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-010 11.5 - 12 05/10/04	TSA-SB-010 16.5 - 17 05/10/04	TSA-SB-010 21.5 - 22 05/10/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.0064*	<0.00100	<0.00100	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-09 (PDP) 31.5-32.0 05/04/00	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-010 11.5 - 12 05/10/04	TSA-SB-010 16.5 - 17 05/10/04	TSA-SB-010 21.5 - 22 05/10/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.0064	<0.00100	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	<0.00100	<0.00100	<0.00100	0.0570
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.0064	<0.00100	<0.00100	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.0064	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	<0.00100	<0.00100	<0.00100	0.0240
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	<0.0064	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-010 31.5 - 32 05/10/04	TSA-SB-010 36.5 - 37 05/10/04	TSA-SB-010 41.5 - 42 05/10/04	TSA-SB-011 6.5 - 7 05/10/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*6.61 [4.99]*	*4.29*	*2.77*	*2.60*	***4.21***
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	117 [105]	129	136	42.0	65.8
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*2.37 [2.56]*	*2.67*	*2.83*	*2.54*	*1.58*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	14.8 [14.8]	16.0	17.9	15.3	8.52
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	16.2 [22.8]	26.5	25.5	22.7	15.1
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-010 31.5 - 32 05/10/04	TSA-SB-010 36.5 - 37 05/10/04	TSA-SB-010 41.5 - 42 05/10/04	TSA-SB-011 6.5 - 7 05/10/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	***<0.248***
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-010 31.5 - 32 05/10/04	TSA-SB-010 36.5 - 37 05/10/04	TSA-SB-010 41.5 - 42 05/10/04	TSA-SB-011 6.5 - 7 05/10/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00 [<1.00]	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-010 31.5 - 32 05/10/04	TSA-SB-010 36.5 - 37 05/10/04	TSA-SB-010 41.5 - 42 05/10/04	TSA-SB-011 6.5 - 7 05/10/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	0.0197 [0.0207]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.116 [0.112]*	<0.00100	<0.00100	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-010 31.5 - 32 05/10/04	TSA-SB-010 36.5 - 37 05/10/04	TSA-SB-010 41.5 - 42 05/10/04	TSA-SB-011 6.5 - 7 05/10/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.0458 [0.0472]*	<0.00100	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	0.0946 [0.0977]	<0.00100	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.324 [0.323]	<0.00100	<0.00100	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	0.0361 [0.0349]	<0.00100	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04	TSA-SB-011 31.5 - 32 05/10/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*2.18*	*<2.00*	*2.36 [2.28]*	*<2.00*	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	109	55.8	47.2 [51.5]	112	106
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*1.93*	1.25	0.896 [0.868]	*2.15*	*2.58*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	10.1	6.25	3.88 [3.77]	11.5	12.3
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	17.5	13.4	3.55 [9.26]	16.7	22.5
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150 [<0.150]*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00 [<1.00]*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200 [<0.200]	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04	TSA-SB-011 31.5 - 32 05/10/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04	TSA-SB-011 31.5 - 32 05/10/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	<1.00	1.77 [1.99]	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04	TSA-SB-011 31.5 - 32 05/10/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	0.241 [0.214]	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	0.0529 [0.0469]	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	<0.00100	*0.169 [0.132]*	*0.256*	*0.0179*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04	TSA-SB-011 31.5 - 32 05/10/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	<0.00100	*0.266 [0.217]*	*0.0400*	0.0105
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	0.679 [0.573]	0.0691	0.0231
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	<0.00100	1.30 [1.07]	0.437	0.0626
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	0.0222	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*0.0518 [0.0784]*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	<0.00100	0.0246 [0.0206]	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	0.430 [0.370]	0.0349	0.0116
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 36.5 - 37 05/10/04	TSA-SB-011 41.5 - 42 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*3.23*	*<2.00*	*2.72*	*<2.00*	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	97.4	109	92.0	110	28.1
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*2.67*	*2.88*	1.36	1.25	*1.47*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	14.5	17.4	7.56	6.67	7.53
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	24.5	19.2	15.0	10.6	15.0
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 36.5 - 37 05/10/04	TSA-SB-011 41.5 - 42 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	<0.248	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	***<0.248***	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 36.5 - 37 05/10/04	TSA-SB-011 41.5 - 42 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 36.5 - 37 05/10/04	TSA-SB-011 41.5 - 42 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-011 36.5 - 37 05/10/04	TSA-SB-011 41.5 - 42 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.0105	<0.00100	<0.00100	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-012 31.5 - 32 05/10/04	TSA-SB-012 36.5 - 37 05/10/04	TSA-SB-012 41.5 - 42 05/10/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*<2.00 [<2.00]*	*9.65*	*<2.00*	*<2.00*	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	47.5 [51.8]	89.7	117	93.6	298
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	0.693 [0.714]	*2.93*	*3.12*	*2.74*	*2.44*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	2.76 [2.77]	14.2	13.7	14.2	15.0
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	8.00 [6.25]	42.1	30.2	15.9	61.1
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-012 31.5 - 32 05/10/04	TSA-SB-012 36.5 - 37 05/10/04	TSA-SB-012 41.5 - 42 05/10/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-012 31.5 - 32 05/10/04	TSA-SB-012 36.5 - 37 05/10/04	TSA-SB-012 41.5 - 42 05/10/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	1.15 [1.78]	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-012 31.5 - 32 05/10/04	TSA-SB-012 36.5 - 37 05/10/04	TSA-SB-012 41.5 - 42 05/10/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	0.221 [0.175]	<0.00100	0.0234	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	0.0472 [0.0345]	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.0214 [0.0147]*	*0.0258*	*0.0574*	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100

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White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-012 31.5 - 32 05/10/04	TSA-SB-012 36.5 - 37 05/10/04	TSA-SB-012 41.5 - 42 05/10/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.200 [0.111]*	0.0102	*0.0260*	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	0.633 [0.484]	0.0278	0.123	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.124 [0.100]	0.0643	0.0961	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*0.0750 [0.118]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	0.0197 [0.0134]	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	0.394 [0.315]	0.0155	0.0577	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*<2.00*	*2.93*	*<2.00*	*<2.00*	*5.16*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	19.1	45.6	13.4	12.4	109
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*1.45*	*2.07*	0.667	0.595	*2.94*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	7.70	10.3	2.71	2.82	13.2
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	10.8	12.3	7.59	2.63	17.6
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	***<0.248***	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	0.142	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	0.0342	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	*0.0276*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	<0.00100	<0.00100	*0.207*	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	0.456	0.0134
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	<0.00100	<0.00100	0.670	0.0570
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	0.0130	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	0.278	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 30.5 - 31 05/11/04	TSA-SB-013 35 - 35.5 05/11/04	TSA-SB-013 41.5 - 42 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*<2.00 [<2.00]*	*3.23*	*<2.00*	***5.60***	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	39.0 [37.0]	32.9	219	19.3	41.5
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*1.61 [1.40]*	0.909	*3.24*	*1.42*	*1.73*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	6.67 [6.41]	3.22	12.5	6.26	8.14
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	5.16 [6.16]	4.36	22.0	17.8	3.62
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	4.20 [4.22]	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	7.95 [7.97]	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 30.5 - 31 05/11/04	TSA-SB-013 35 - 35.5 05/11/04	TSA-SB-013 41.5 - 42 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	***<0.248***	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 30.5 - 31 05/11/04	TSA-SB-013 35 - 35.5 05/11/04	TSA-SB-013 41.5 - 42 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*8.52 [8.57]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	633 [1,090]	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 30.5 - 31 05/11/04	TSA-SB-013 35 - 35.5 05/11/04	TSA-SB-013 41.5 - 42 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	177 [204]	0.0110	0.0126	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	46.6 [55.0]	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*68.1 [78.3]*	<0.00100	*0.0127*	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100

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Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-013 30.5 - 31 05/11/04	TSA-SB-013 35 - 35.5 05/11/04	TSA-SB-013 41.5 - 42 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*176 [202]*	0.0104	0.0129	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	*16.7 [19.2]*	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	*365 [414]*	0.0236	0.0288	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	*542 [616]*	0.0308	0.0496	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500 [<0.00500]*	*0.0538*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100 [10.4]	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	43.5 [50.7]	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	*146 [165]*	<0.00100	0.0124	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-014 30 - 30.5 05/11/04	TSA-SB-014 36.5 - 37 05/11/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*5.98*	*3.00*	*<2.00*	*6.51 [6.35]*	*4.84*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	40.8	132	80.2	115 [106]	138
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	0.713	*2.08*	*3.12*	*1.55 [1.42]*	1.35
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	2.72	11.0	5.16	14.5 [14.6]	11.7
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	2.01	18.1	5.90	19.4 [24.1]	17.1
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150 [<0.150]*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00 [<1.00]*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200 [<0.200]	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-014 30 - 30.5 05/11/04	TSA-SB-014 36.5 - 37 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-014 30 - 30.5 05/11/04	TSA-SB-014 36.5 - 37 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	<1.00	<1.00	<1.00 [<1.00]	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-014 30 - 30.5 05/11/04	TSA-SB-014 36.5 - 37 05/11/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	<0.00100	<0.00100	*0.0214 [0.0241]*	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-014 30 - 30.5 05/11/04	TSA-SB-014 36.5 - 37 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [0.0106]	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	0.0177 [0.0198]	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	<0.00100	<0.00100	0.0697 [0.0773]	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 41.5 - 42 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*9.48*	***4.98***	*3.19*	*10.9*	*6.29 [4.81]*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	34.5	80.9	29.4	108	151 [32.6]
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	0.878	0.942	0.522	*1.62*	*1.60* [0.603]
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	8.69	8.77	4.62	12.1	15.5 [6.77]
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	11.2	9.56	6.32	22.3	19.6 [10.1]
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150 [<0.150]*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00 [<1.00]*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200 [<0.200]
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 41.5 - 42 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	***<0.248***	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 41.5 - 42 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248 [<0.248]
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	<1.00	9.55	<1.00	1.83 [2.19]

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 41.5 - 42 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.110 [0.110]
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.0249 [0.0236]
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	*0.185 [0.229]*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-014 41.5 - 42 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	*0.162 [0.184]*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.340 [0.372]
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.647 [0.801]
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.0166 [0.0170]
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	0.160 [0.178]
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-015 31.5 - 32 05/11/04	TSA-SB-015 36.5 - 37 05/11/04	TSA-SB-015 41.5 - 42 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*6.18*	*6.32*	*6.34*	*4.97*	*3.00*	*3.23*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	33.5	181	39.3	67.6	12.6	70.6
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	<0.500	*1.75*	<0.500	0.819	0.612	0.536
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	3.99	12.7	4.18	8.28	5.39	5.00
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	5.82	20.6	5.28	8.99	7.37	5.86
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-015 31.5 - 32 05/11/04	TSA-SB-015 36.5 - 37 05/11/04	TSA-SB-015 41.5 - 42 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	***<0.248***	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-015 31.5 - 32 05/11/04	TSA-SB-015 36.5 - 37 05/11/04	TSA-SB-015 41.5 - 42 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	63.6	1.06	<1.00	29.8	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-015 31.5 - 32 05/11/04	TSA-SB-015 36.5 - 37 05/11/04	TSA-SB-015 41.5 - 42 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	10.9	0.298	0.0354	1.12	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	2.92	0.0780	0.0101	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*2.50*	*0.0532*	*0.0140*	<0.00100	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-015 31.5 - 32 05/11/04	TSA-SB-015 36.5 - 37 05/11/04	TSA-SB-015 41.5 - 42 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*8.88*	*0.153*	*0.0180*	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	0.876	0.0196	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	*18.7*	0.363	0.0431	*1.52*	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	*19.0*	0.330	0.0451	*2.23*	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*1.31*	*0.340*	*0.0501*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	0.550	0.0220	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	2.41	0.0551	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	*8.09*	0.184	0.0194	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	0.238	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 16.5 - 17 05/11/04	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-016 30.5 - 31 05/11/04	TSA-SB-016 35.5 - 36 05/11/04
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*1.77*	*2.30 [<2.00]*	*4.07*	*<2.00*	*3.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	25.1	23.4 [75.4]	73.2	167	71.5
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	<0.500	<0.500 [0.938]	*2.57*	1.27	*2.67*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	3.14	2.65 [5.02]	12.8	5.84	14.1
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	4.32	5.08 [<1.00]	11.5	7.50	28.8
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200 [<0.200]	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	7.96 [7.76]	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	14.6 [14.6]	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 16.5 - 17 05/11/04	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-016 30.5 - 31 05/11/04	TSA-SB-016 35.5 - 36 05/11/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 16.5 - 17 05/11/04	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-016 30.5 - 31 05/11/04	TSA-SB-016 35.5 - 36 05/11/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*13.4 [14.1]*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	<1.00	242 [1,470]	24.1	13.7	11.9

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 16.5 - 17 05/11/04	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-016 30.5 - 31 05/11/04	TSA-SB-016 35.5 - 36 05/11/04
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	0.0315	30.5 [30.3]	0.0790	1.04	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	0.0155	8.19 [8.06]	0.0172	0.273	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	*1.21 [1.23]*	*1.06*	*1.51*	*0.354*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 16.5 - 17 05/11/04	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-016 30.5 - 31 05/11/04	TSA-SB-016 35.5 - 36 05/11/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	<0.00100	*16.8 [16.8]*	*0.207*	*0.986*	*0.318*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	*2.11 [2.10]*	<0.00100	0.0912	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	0.0190	*41.8 [41.7]*	0.401	*1.99*	0.639
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	*21.5 [21.3]*	*2.00*	*4.10*	*1.68*
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	2.14 [2.15]	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	<0.00100	5.80 [5.73]	0.0149	0.240	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	0.0282	*18.6 [18.6]*	0.218	0.905	0.290
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	1.02 [<0.00100]	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 41.5 - 42 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*2.34*	*2.95*	*3.29*	*4.09*	*<2.00*	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	45.5	69.0	*4,200*	22.9	51.8	114
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*2.52*	0.767	*2.23*	1.20	0.597	*2.75*
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	13.1	3.58	10.6	4.74	<2.50	13.0
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	12.6	5.93	11.4	6.66	2.42	16.9
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	2.83	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	5.33	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 41.5 - 42 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	***<0.248***	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 41.5 - 42 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*5.72*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	3.79	<1.00	<1.00	<1.00	103	4.09

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 41.5 - 42 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	0.610	<0.00100	<0.00100	<0.00100	49.5	0.0579
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	0.161	<0.00100	<0.00100	<0.00100	13.9	0.0152
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.214*	<0.00100	<0.00100	<0.00100	*10.1*	*0.188*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-016 41.5 - 42 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.425*	<0.00100	<0.00100	<0.00100	*57.6*	*0.0847*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	0.0485	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	0.920	<0.00100	<0.00100	<0.00100	*126*	0.181
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	1.15	<0.00100	<0.00100	<0.00100	*177*	0.477
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	*0.146*
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	0.0371	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	0.135	<0.00100	<0.00100	<0.00100	10.9	0.0107
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	0.430	<0.00100	<0.00100	<0.00100	*44.3*	0.0801
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-017 31.5 - 32 05/12/04	TSA-SB-017 36.5 - 37 05/12/04	TSA-SB-017 41.5 - 42 05/12/04	TSA-SB-018 6.5 - 7 05/12/04	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*<2.00*	*<2.00*	*<2.00*	*<2.00*	*<2.00*	*<2.00*
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	147	32.5	72.0	99.8	115	33.3
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	*2.82*	0.924	*2.62*	*1.57*	*2.03*	0.720
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	12.7	5.55	15.8	7.90	9.68	3.86
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	20.5	1.08	21.7	6.72	9.51	1.65
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*3.31*	*1.41*
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-017 31.5 - 32 05/12/04	TSA-SB-017 36.5 - 37 05/12/04	TSA-SB-017 41.5 - 42 05/12/04	TSA-SB-018 6.5 - 7 05/12/04	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	*<0.248*	***<0.248***	*<0.248*	*<0.248*
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-017 31.5 - 32 05/12/04	TSA-SB-017 36.5 - 37 05/12/04	TSA-SB-017 41.5 - 42 05/12/04	TSA-SB-018 6.5 - 7 05/12/04	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	1.40	<1.00	<1.00	<1.00	<1.00	<1.00

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-017 31.5 - 32 05/12/04	TSA-SB-017 36.5 - 37 05/12/04	TSA-SB-017 41.5 - 42 05/12/04	TSA-SB-018 6.5 - 7 05/12/04	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	0.0974	<0.00100	0.0309	<0.00100	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	0.0230	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*0.241*	<0.00100	*0.0176*	<0.00100	<0.00100	<0.00100
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-017 31.5 - 32 05/12/04	TSA-SB-017 36.5 - 37 05/12/04	TSA-SB-017 41.5 - 42 05/12/04	TSA-SB-018 6.5 - 7 05/12/04	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*0.0965*	<0.00100	*0.0221*	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	0.215	<0.00100	0.0521	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.525	<0.00100	0.102	<0.00100	<0.00100	<0.00100
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*0.125*	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	104-51-8	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	103-65-1	- -	- -	mg/kg	0.0162	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	0.103	<0.00100	0.0242	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-018 30.5 - 31 05/12/04	TSA-SB-018 36.5 - 37 05/12/04	TSA-SB-018 41.5 - 42 05/12/04	TSA-SB-019 10 - 12 05/13/04
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	*<2.00*	*3.02*	*<2.00*	*<2.00*	*<2.00*	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	24.7	63.8	53.9	51.7	154	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	0.814	*1.63*	0.921	*2.87*	*3.28*	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	2.64	8.38	4.03	15.6	15.6	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	<1.00	8.55	5.17	11.1	21.6	5.45
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	*<1.00*	*2.27*	*3.03*	*<1.00*	*<1.00*	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	13.0	<0.248	7.18	<0.248	<0.248	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	23.8	<0.248	13.5	<0.248	<0.248	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-018 30.5 - 31 05/12/04	TSA-SB-018 36.5 - 37 05/12/04	TSA-SB-018 41.5 - 42 05/12/04	TSA-SB-019 10 - 12 05/13/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	0.249	<0.248	<0.248	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-018 30.5 - 31 05/12/04	TSA-SB-018 36.5 - 37 05/12/04	TSA-SB-018 41.5 - 42 05/12/04	TSA-SB-019 10 - 12 05/13/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*19.9*	*<0.248*	*14.6*	*<0.248*	*<0.248*	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -
Phenacetin	62-44-2	- -	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	3,200	1.54	8,480	2.67	<1.00	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-018 30.5 - 31 05/12/04	TSA-SB-018 36.5 - 37 05/12/04	TSA-SB-018 41.5 - 42 05/12/04	TSA-SB-019 10 - 12 05/13/04
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	388	0.0506	207	<0.00100	0.0565	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	107	0.0135	54.0	<0.00100	0.0128	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	<0.00100	*0.0193*	*80.0*	*0.0128*	*0.0380*	- -
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-018 30.5 - 31 05/12/04	TSA-SB-018 36.5 - 37 05/12/04	TSA-SB-018 41.5 - 42 05/12/04	TSA-SB-019 10 - 12 05/13/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Cymene	99-87-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*149*	*0.0220*	*210*	<0.00100	*0.0329*	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
Iodomethane	74-88-4	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	*30.9*	<0.00100	*16.3*	<0.00100	<0.00100	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	*340*	0.0530	*442*	0.0135	0.0773	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	<0.00100	0.0308	*583*	0.0351	0.134	- -
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	19.6	<0.00100	<0.00100	<0.00100	<0.00100	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	92.0	<0.00100	45.5	<0.00100	<0.00100	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	*109*	0.0206	*173*	<0.00100	0.0343	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	7.86	2.80	2.53	2.16	5.18	1.66
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	- -	- -	- -	- -	- -	- -
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	- -	- -	- -	- -	- -	- -
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04	HVW-05 20 - 22 03/25/09	HVW-05 30 - 31 03/25/09	HVW-07 20 - 22 03/23/09
Metals										
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	3.96	2.87	3.05	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs										
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04	HVW-05 20 - 22 03/25/09	HVW-05 30 - 31 03/25/09	HVW-07 20 - 22 03/23/09
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04	HVW-05 20 - 22 03/25/09	HVW-05 30 - 31 03/25/09	HVW-07 20 - 22 03/23/09
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
TPHs										
Gasoline Range Organics	GRO	- -	- -	mg/kg	- -	- -	- -	200	10.1	5.46 B

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04	HVW-05 20 - 22 03/25/09	HVW-05 30 - 31 03/25/09	HVW-07 20 - 22 03/23/09
VOCs										
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	- -	- -	- -	*0.0395*	*0.717*	*<0.0200*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04	HVW-05 20 - 22 03/25/09	HVW-05 30 - 31 03/25/09	HVW-07 20 - 22 03/23/09
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	- -	- -	- -	*<0.0200*	*0.574*	*<0.0200*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	- -	- -	- -	0.312	*2.14*	<0.0200
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	- -	- -	- -	<0.0200	*0.196*	<0.0200
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	- -	- -	- -	*7.29*	*1.76*	<0.0200

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	HVW-08 20 - 22 03/23/09	HVW-08 30 - 31 03/23/09	HVW-09 16 - 17 03/23/09	HVW-09 19 - 20 03/23/09	HVW-10 25.5 - 26.5 03/23/09
Metals									
Arsenic	7440-38-2	3.9 {NMED ResSoil09}	0.0131	mg/kg	- -	- -	- -	- -	- -
Barium	7440-39-3	15,600 {NMED ResSoil09}	301	mg/kg	- -	- -	- -	- -	- -
Cadmium	7440-43-9	77.9 {NMED ResSoil09}	1.37	mg/kg	- -	- -	- -	- -	- -
Chromium	7440-47-3	219 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Lead	7439-92-1	400 {NMED ResSoil09}	- -	mg/kg	- -	- -	- -	- -	- -
Mercury	7439-97-6	7.71 {NMED ResSoil09}	0.0293	mg/kg	- -	- -	- -	- -	- -
Selenium	7782-49-2	391 {NMED ResSoil09}	0.965	mg/kg	- -	- -	- -	- -	- -
Silver	7440-22-4	391 {NMED ResSoil09}	1.57	mg/kg	- -	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	18.3 {NMED ResSoil09}	0.0214	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	621 {NMED ResSoil09}	32.6	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	220 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	6,110 {NMED ResSoil09}	7.13	mg/kg	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	61 {NMED ResSoil09}	0.0713	mg/kg	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	183 {NMED ResSoil09}	0.137	mg/kg	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	1,220 {NMED ResSoil09}	0.912	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	122 {NMED ResSoil09}	0.0525	mg/kg	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	15.7 {NMED ResSoil09}	0.00156	mg/kg	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	61.2 {NMED ResSoil09}	0.0267	mg/kg	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	6,260 {NMED ResSoil09}	13.5	mg/kg	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	391 {NMED ResSoil09}	0.153	mg/kg	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	310 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	3,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	10.8 {NMED ResSoil09}	0.017	mg/kg	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophoro	78-59-1	5,120 {NMED ResSoil09}	0.185	mg/kg	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	HVW-08 20 - 22 03/23/09	HVW-08 30 - 31 03/23/09	HVW-09 16 - 17 03/23/09	HVW-09 19 - 20 03/23/09	HVW-10 25.5 - 26.5 03/23/09
3-Methylphenol/4-Methylphenol	108-39-4b	- -	- -	mg/kg	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	4.9 {NMED ResSoil09}	0.00393	mg/kg	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	3,440 {NMED ResSoil09}	20.5	mg/kg	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
Acetophenone	98-86-2	7,820 {NMED ResSoil09}	0.886	mg/kg	- -	- -	- -	- -	- -
Aniline	62-53-3	850 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Anthracene	120-12-7	17,200 {NMED ResSoil09}	337	mg/kg	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.0211 {NMED ResSoil09}	0.0000125	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	6.21 {NMED ResSoil09}	0.32	mg/kg	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.621 {NMED ResSoil09}	0.109	mg/kg	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	6.21 {NMED ResSoil09}	1.11	mg/kg	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	62.1 {NMED ResSoil09}	10.9	mg/kg	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	240,000 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	6,100 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	2,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	180 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	2.56 {NMED ResSoil09}	0.0000233	mg/kg	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	- -	0.00256	mg/kg	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phtl	117-81-7	347 {NMED ResSoil09}	11.9	mg/kg	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,800 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.621 {NMED ResSoil09}	0.362	mg/kg	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	- -	mg/kg	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	48,900 {NMED ResSoil09}	10.6	mg/kg	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	611,000 {NMED ResSoil09}	83.6	mg/kg	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	6,110 {NMED ResSoil09}	8.63	mg/kg	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	- -	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	HVW-08 20 - 22 03/23/09	HVW-08 30 - 31 03/23/09	HVW-09 16 - 17 03/23/09	HVW-09 19 - 20 03/23/09	HVW-10 25.5 - 26.5 03/23/09
Diphenylamine	122-39-4	1,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	- -	mg/kg	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	2,290 {NMED ResSoil09}	155	mg/kg	- -	- -	- -	- -	- -
Fluorene	86-73-7	2,290 {NMED ResSoil09}	25	mg/kg	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	3.04 {NMED ResSoil09}	0.00221	mg/kg	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	367 {NMED ResSoil09}	0.613	mg/kg	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	61.1 {NMED ResSoil09}	0.0193	mg/kg	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	6.21 {NMED ResSoil09}	3.7	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.954 {NMED ResSoil09}	0.00000304	mg/kg	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	- -	- -	mg/kg	- -	- -	- -	- -	- -
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	49.4 {NMED ResSoil09}	0.00686	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.726 {NMED ResSoil09}	0.0000648	mg/kg	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.69 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	24 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	48.9 {NMED ResSoil09}	0.0937	mg/kg	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	19 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	29.8 {NMED ResSoil09}	0.0294	mg/kg	- -	- -	- -	- -	- -
Phenacetin	62-44-2	- -	- -	mg/kg	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,830 {NMED ResSoil09}	83.4	mg/kg	- -	- -	- -	- -	- -
Phenol	108-95-2	18,300 {NMED ResSoil09}	6.3	mg/kg	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	240 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	4,600 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,720 {NMED ResSoil09}	112	mg/kg	- -	- -	- -	- -	- -
Pyridine	110-86-1	78 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	GRO	- -	- -	mg/kg	120 [63.4]	320	9.43	2.28 B	2,070

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	HVW-08 20 - 22 03/23/09	HVW-08 30 - 31 03/23/09	HVW-09 16 - 17 03/23/09	HVW-09 19 - 20 03/23/09	HVW-10 25.5 - 26.5 03/23/09
VOCs									
1,1,1,2-Tetrachloroethane	630-20-6	29.2 {NMED ResSoil09}	0.00173	mg/kg	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	21,800 {NMED ResSoil09}	2.98	mg/kg	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	7.98 {NMED ResSoil09}	0.000225	mg/kg	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	17.2 {NMED ResSoil09}	0.000674	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethane	75-34-3	62.9 {NMED ResSoil09}	0.00609	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloroethylene	75-35-4	618 {NMED ResSoil09}	0.119	mg/kg	- -	- -	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.915 {NMED ResSoil09}	0.0000356	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	143 {NMED ResSoil09}	0.0102	mg/kg	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	62 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.194 {NMED ResSoil09}	0.00000297	mg/kg	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.574 {NMED ResSoil09}	0.0000158	mg/kg	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	3,010 {NMED ResSoil09}	0.313	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloroethane	107-06-2	7.74 {NMED ResSoil09}	0.000365	mg/kg	- -	- -	- -	- -	- -
1,2-Dichloropropane	78-87-5	14.7 {NMED ResSoil09}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	780 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
1,3-Dichloropropane	142-28-9	1,600 {EPA ResSoil}	0.00111	mg/kg	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	32.2 {NMED ResSoil09}	0.00357	mg/kg	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Butanone	78-93-3	39,600 {NMED ResSoil09}	1.27	mg/kg	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
2-Chlorotoluene	95-49-8	1,560 {NMED ResSoil09}	0.624	mg/kg	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	5,500 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	5,950 {NMED ResSoil09}	0.379	mg/kg	- -	- -	- -	- -	- -
Acetone	67-64-1	67,500 {NMED ResSoil09}	3.84	mg/kg	- -	- -	- -	- -	- -
Acrylonitrile	107-13-1	5.97 {NMED ResSoil09}	0.0000819	mg/kg	- -	- -	- -	- -	- -
Benzene	71-43-2	15.5 {NMED ResSoil09}	0.00185	mg/kg	*<0.100 [<0.0200]*	*4.82*	*0.270*	*<0.0200*	*0.539*
Bromobenzene	108-86-1	300 {EPA ResSoil}	- -	mg/kg	- -	- -	- -	- -	- -
Bromodichloromethane	75-27-4	5.25 {NMED ResSoil09}	0.000276	mg/kg	- -	- -	- -	- -	- -
Bromomethane	74-83-9	22.3 {NMED ResSoil09}	0.00194	mg/kg	- -	- -	- -	- -	- -
Carbon Disulfide	75-15-0	1,940 {NMED ResSoil09}	0.252	mg/kg	- -	- -	- -	- -	- -
Carbon Tetrachloride	56-23-5	4.38 {NMED ResSoil09}	0.000739	mg/kg	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	2,010 {NMED ResSoil09}	0.901	mg/kg	- -	- -	- -	- -	- -

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	CAS No.	Comparative Standard	NMED DAF1	Units	HVW-08 20 - 22 03/23/09	HVW-08 30 - 31 03/23/09	HVW-09 16 - 17 03/23/09	HVW-09 19 - 20 03/23/09	HVW-10 25.5 - 26.5 03/23/09
CFC-12 (Dichlorodifluoromethane)	75-71-8	481 {NMED ResSoil09}	0.723	mg/kg	- -	- -	- -	- -	- -
Chlorobenzene	108-90-7	508 {NMED ResSoil09}	0.0538	mg/kg	- -	- -	- -	- -	- -
Chlorobromomethane	74-97-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane	124-48-1	11.9 {NMED ResSoil09}	0.000338	mg/kg	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	43,600 {NMED ResSoil09}	5.42	mg/kg	- -	- -	- -	- -	- -
Chloroform	67-66-3	5.72 {NMED ResSoil09}	0.000468	mg/kg	- -	- -	- -	- -	- -
Chloromethane	74-87-3	35.6 {NMED ResSoil09}	0.00418	mg/kg	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	782 {NMED ResSoil09}	0.0943	mg/kg	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	- -	mg/kg	- -	- -	- -	- -	- -
Cymene	99-87-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	782 {NMED ResSoil09}	0.0777	mg/kg	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	199 {NMED ResSoil09}	0.0107	mg/kg	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	69.7 {NMED ResSoil09}	0.0146	mg/kg	*<0.100 [<0.0200]*	*19.4*	*<0.0200*	*<0.0200*	*<0.0200*
Hexachloro-1,3-Butadiene	87-68-3	61.1 {NMED ResSoil09}	0.0147	mg/kg	- -	- -	- -	- -	- -
Iodomethane	74-88-4	- -	- -	mg/kg	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	3,210 {NMED ResSoil09}	0.986	mg/kg	- -	- -	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	8,290 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	5,570 {NMED ResSoil09}	1.38	mg/kg	0.0315 J [<0.0200]	*40.0*	0.0269	<0.0200	1.24
MTBE	1634-04-4	862 {NMED ResSoil09}	0.0229	mg/kg	*<0.100 [<0.0200]*	*1.18*	<0.0200	<0.0200	<0.0200
Naphthalene	91-20-3	45 {NMED ResSoil09}	0.00419	mg/kg	- -	- -	- -	- -	- -
n-Butylbenzene	104-51-8	- -	- -	mg/kg	- -	- -	- -	- -	- -
n-Propylbenzene	103-65-1	- -	- -	mg/kg	- -	- -	- -	- -	- -
o-Xylene	95-47-6	9,550 {NMED ResSoil09}	1.23	mg/kg	- -	- -	- -	- -	- -
sec-Butylbenzene	135-9-88	- -	- -	mg/kg	- -	- -	- -	- -	- -
Styrene (Monomer)	100-42-5	8,970 {NMED ResSoil09}	1.56	mg/kg	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tetrachloroethene	127-18-4	6.99 {NMED ResSoil09}	0.000449	mg/kg	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	273 {NMED ResSoil09}	0.0301	mg/kg	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	- -	- -	mg/kg	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	616 {NMED ResSoil09}	0.604	mg/kg	- -	- -	- -	- -	- -
Trichloroethylene	79-01-6	45.7 {NMED ResSoil09}	0.0053	mg/kg	- -	- -	- -	- -	- -
Vinyl Chloride	75-01-4	0.865 {NMED ResSoil09}	0.000288	mg/kg	- -	- -	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	1,090 {NMED ResSoil09}	0.176	mg/kg	*0.512 [0.316]*	*61.5*	0.0709	<0.0200	*13.2*

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Table 2-1. Summary of Soil Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Qualifier Type	Definition
J	Indicates an estimated value.
B	Analyte was detected in the associated method blank.

Acronym/Note	Description
All data reported from before 2009 were collected by others and the data were provided to ARCADIS by White Sands Missile Range.	
--	The sample was not tested for this constituent and/or no data were available.
1.7	Grey highlight indicates that the reported result exceeds the published soil screening level (SSL). If the result is preceded by "<", the constituent was not detected, but the reported sample quantitation limit exceeds the SSL.
2.77	Italics indicate that the reported result exceeds the NMED DAF 1screening value. If the result is preceded by "<", the constituent was not detected but the reported sample quantitation limit exceeds the DAF 1 standard.
[<0.005]	Brackets indicate that the result shown is from a duplicate field sample.
CAS	Chemical Abstract Service.
DAF 1	NMED Dilution Attenuation Factor 1 from Table A-1, December 2009 Update to Technical Background Document for Development of Soil Screening Levels, Revision 5.0. NMED Hazardous Waste Bureau and Ground Water Quality Bureau, Voluntary Remediation Program. August 2009.
EPA	United States Environmental Protection Agency.
EPA ResSoil09	USEPA Residential Soil Screening Level from *USEPA Regional Screening Levels* (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index/htm). 2009.
mg/kg	Milligram per kilogram.
NMED	New Mexico Environment Department.
NMED ResSoil09	NMED Residential Soil Screening Level from Table A-1, December 2009 Update to Technical Background Document for Development of Soil Screening Levels, Revision 5.0. NMED Hazardous Waste Bureau and Ground Water Quality Bureau, Voluntary Remediation Program. August 2009.
SSL	Soil Screening Level

Soil samples collected in 2000 represent soil conditions prior to remediation by SVE.

The 2004 and 2009 soil sample locations are shown on Figure 3-1. These samples were used to evaluate site conditions afterSVEwas conducted in 2000-2001.

The soil samples collected on March 17, 2000 were later re-named as follows: TSA-Pump = HA-01; TSA-Line = HA-02; TSA-Blacktop = HA-03

Selected soil samples collected in May 2000 were split and analyzed by two laboratories: Trace Analysis, Inc. and PDP Analytical Services. The samples sent to PDP have "(PDP)" at the end of the sample name.

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Table 2-2. Summary of Monitoring Well Construction Information
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Name	Elevation Casing (new survey data 02/11/2010)	Ground Elevation (new survey data 02/11/2010)	Stickup (new survey data 02/11/2010)	Well Diameter	Top of Filter Screen	Bottom of Filter Screen	Top of Filter Screen	Bottom of Filter Screen	Filter Screen Length	Total Depth
	(feet [ft])	(ft)	(ft)	(inch)	(feet above mean sea level [ft amsl])	(ft amsl)	(feet below ground surface [ft bgs])	(ft bgs)	(ft)	(ft bgs)
Vadose Zone Wells										
HVW-1	3963.45	3963.72	-0.28	4.0	3948.7	3943.7	15.0	20.0	5.0	20.0
HVW-2	3962.62	3963.35	-0.73	4.0	3932.4	3927.4	31.0	36.0	5.0	36.0
HVW-3	3963.36	3963.71	-0.36	4.0	3932.7	3927.7	31.0	36.0	5.0	36.0
HVW-4	3963.12	3963.49	-0.38	4.0	3932.5	3927.5	31.0	36.0	5.0	36.0
HVW-5	3963.13	3963.65	-0.52	2.0	3933.6	3928.6	30.0	35.0	5.0	35.0
HVW-6	3963.08	3963.67	-0.59	2.0	3938.7	3933.7	25.0	30.0	5.0	30.0
HVW-7	3962.93	3963.46	-0.53	4.0	3946.5	3941.5	17.0	22.0	5.0	22.0
HVW-8	3962.75	3963.41	-0.67	2.0	3938.4	3933.4	25.0	30.0	5.0	30.0
HVW-9	3961.57	3963.52	-1.95	4.0	3946.5	3941.5	17.0	22.0	5.0	22.0
HVW-10	3963.21	3963.70	-0.48	1 (casing) 2 (filter)	3934.2	3932.7	29.5	31.0	1.5	31.0
Regional Wells										
HMW-48	3965.66	3962.90	2.75	4.0	3877.9	3857.9	85.0	105.0	20.0	110.0
HMW-49	3965.50	3963.59	1.91	4.0	3878.6	3858.6	85.0	105.0	20.0	110.0
HMW-50	3965.13	3963.03	2.09	4.0	3878.0	3858.0	85.0	105.0	20.0	110.0
HMW-52	3963.19	3963.48	-0.29	4.0	3875.0	3870.0	88.5	93.5	5.0	100.2

Sources:

MEVATEC, 2002

Well Construction Logs for HVW-5, HVW-7 through HVW-10 (Appendix C)

Survey data from ZIA LLC, 02/11/2010

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
Metals									
Divalent Manganese	MN+2	- -	ug/L	<1,000 M	- -	1,200	- -	- -	1,300 JM
Feric Iron	FE+3	- -	ug/L	<1,000 M	- -	<1,000 M	- -	- -	<2,000 M
Ferrous Iron	FE+2	- -	ug/L	700 J	- -	<1,000 M	- -	- -	<2,000 M
Manganese	7439-96-5	200 {NMED_GW}	ug/L	430 L	- -	1,200 L	- -	- -	1,000 L
Total Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	- -	- -	- -	<1.00	- -
Other									
Ammonia (N)	7664-41-7	--	ug/L	--	--	--	--	<2000	--
Bicarbonate	ALKBicarb	- -	ug/L	- -	- -	- -	- -	380,000	- -
Bromide	24959-67-9	- -	ug/L	- -		- -	- -	<20,000	- -
Carbonate	CO3	- -	ug/L	- -	- -	- -	- -	<5,000	- -
Carbon Dioxide	124-38-9	- -	ug/L	25,000	- -	35,000	- -	- -	37,000
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	- -	6,400,000	- -
Chlorine (free, combined)	7782-50-5	- -	ug/L	- -	- -	- -	- -	<100	- -
Conductivity	Cond	- -	mS/cm	36.5	- -	10.6	- -	2.8	14.0
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	- -	<2,000	- -
Methane	74-82-8	- -	ug/L	1.20	- -	0.290	- -	- -	0.360
Nitrate	14797-55-8	10,000 {NMED_GW}	ug/L	52,200	- -	<2,500	- -	88,000 Z	221,000
pH	pH	6-9 {NMED_GW}	pH Units	7.40	- -	7.38	- -	7.40 Z	7.19
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	10,700,000	- -	6,800,000	- -	15,000,000	4,420,000
Temperature	TEMP	- -	deg C	- -	- -	- -	- -	22.1	24.3
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	12,700,000	- -	7,440,000	- -	26,000,000 Z	8,440,000
Total Phosphorous	7723-14-0T	- -	ug/L	<25.0	- -	<25.0	- -	- -	<25.0
TPH									
Gasoline Range Organics	GRO	- -	ug/L	- -	53,400	- -	118,000	8,800	- -
VOCs (by USEPA 8260)									
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,1-Dichloropropene	563-58-6	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	<100	- -	<1,000	- -	<25.0	<50.0
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<100	- -	<1,000	- -	<25.0	<50.0
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	41.1	1,310	3,860	2,960	<50.0	194

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	<100	- -	<1,000	- -	<25.0	<50.0
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.0	<10.0
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	<20.0	299	864	646	<10.0	44.9
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
2,2-Dichloropropane	594-20-7	- -	ug/L	<20.0	- -	<200	- -	<15.0	<10.0
2-Butanone (MEK)	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	<100	- -	<1,000	- -	<250.0	<50.0
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	<100	- -	<1,000	- -	- -	<50.0
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
2-Phenylbutane	135-98-8	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	<100	- -	<1,000	- -	<250.0	<50.0
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	<200	- -	<2,000	- -	<500.0	<100
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	- -	<10.0
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	1,580	8,510	8,120	9,920	1,600	649
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	<100	- -	<1,000	- -	<25.0	<50.0
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	- -	<10.0
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chlorobromomethane	74-97-5	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Cymene	99-87-6	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	<100	- -	<1,000	- -	<50.0	<50.0
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	57.3	69.5	6,280	4,460	120	20.2

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<100	- -	<1,000	- -	<25.0	<50.0
Iodomethane	74-88-4	- -	ug/L	<100	- -	<1,000	- -	- -	<50.0
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	<20.0	- -	319	- -	<10.0	16.2
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	352	5,180	17,100	11,800	330	779
m-Dichlorobenzene	541-73-1	- -	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
Methyl n-Butyl Ketone	591-78-6	- -	ug/L	<100	- -	<1,000	- -	<250.0	<50.0
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	2,190	19,000 EJ	16,400	16,700	1,570	35.6
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	690	1,180	825	1,040	<25.0	111
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	<100	425 J	<1,000	473 J	<25.0	<50.0
n-Butylbenzene	104-51-8	- -	ug/L	<20.0	- -	<200	- -	<15.0	<10.0
n-Propylbenzene	103-65-1	- -	ug/L	<20.0	133	589	452	<10.0	20.3
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	214	2,740	7,760	5,580	150	343
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
tert-Butylbenzene	98-06-6	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	<200	- -	<2,000	- -	- -	<100
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	<20.0	- -	<200	- -	<5.00	<10.0
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	<20.0	- -	<200	- -	<10.0	<10.0
SVOCs									
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	- -	- -	<50.0	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	- -	- -	<50.0	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	- -	- -	<50.0	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	- -	- -	<50.0	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	- -	- -	<50.0	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	- -	- -	<50.0	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	- -	- -	<50.0	- -
4,6-Dinitro-2-Methylphenol	534-52-1	2.90 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	- -	- -	<50.0	- -
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	- -	- -	<50.0	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	- -	- -	<50.0	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	- -	- -	<50.0	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzo(b&k)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -

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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
Bis(2-Chloroisopropyl) Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Bis(2-Ethylhexyl) Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Diphenylhydrazine	122-66-7	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	- -	- -	<50.0	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
N-Nitrosodi-n-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
N-Nitrosodi-n-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	- -	- -	51.0	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 06/01/00	HVW-04 02/24/09
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<50.0	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	<50.0	- -
VOCs (by USEPA 8021)									
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	1,200	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	- -	- -	- -	- -	120	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	88	- -
Total xylenes	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	- -	- -	420	- -
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	72	- -
Metals-Dissolved									
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	<50.0	- -
Boron, Dissolved	7440-42-8D	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	1,700	- -
Calcium, Dissolved	7440-70-2D	- -	ug/L	- -	- -	- -	- -	460,000	- -
Iron, Dissolved	7439-89-6D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	<200	- -
Lithium, Dissolved	7439-93-2D	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	720	- -
Magnesium, Dissolved	7439-95-4D	- -	ug/L	- -	- -	- -	- -	920,000	- -
Manganese, Dissolved	7439-96-5D	200 {NMED_GW}	ug/L	- -	- -	- -	- -	80	- -
Phosphorus, Dissolved	7723-14-0	- -	ug/L	- -	- -	- -	- -	<200	- -
Potassium, Dissolved	7440-09-7D	- -	ug/L	- -	- -	- -	- -	29,000	- -
Sodium, Dissolved	7440-23-5D	- -	ug/L	- -	- -	- -	- -	5,700,000	- -
Strontium, Dissolved	7440-24-6D	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	7,100	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	<500	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
Metals								
Divalent Manganese	MN+2	- -	ug/L	- -	- -	- -	- -	- -
Feric Iron	FE+3	- -	ug/L	- -	- -	- -	- -	- -
Ferrous Iron	FE+2	- -	ug/L	- -	- -	- -	- -	- -
Manganese	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Total Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Other								
Ammonia (N)	7664-41-7	--	ug/L	--	--	--	--	--
Bicarbonate	ALKBicarb	- -	ug/L	- -	- -	- -	- -	- -
Bromide	24959-67-9	- -	ug/L	- -	- -	- -	- -	- -
Carbonate	CO3	- -	ug/L	- -	- -	- -	- -	- -
Carbon Dioxide	124-38-9	- -	ug/L	- -	- -	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Chlorine (free, combined)	7782-50-5	- -	ug/L	- -	- -	- -	- -	- -
Conductivity	Cond	- -	mS/cm	- -	- -	- -	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Methane	74-82-8	- -	ug/L	- -	- -	- -	- -	- -
Nitrate	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	- -	- -	- -	- -	- -
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Temperature	TEMP	- -	deg C	- -	- -	- -	- -	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	- -	**5,170,000 [5,090,000]**	- -	**6,060,000**	- -
Total Phosphorous	7723-14-0T	- -	ug/L	- -	- -	- -	- -	- -
TPH								
Gasoline Range Organics	GRO	- -	ug/L	13,300	155,000 [142,000]	142,000	187 J	182 J
VOCs (by USEPA 8260)								
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
1,1-Dichloropropene	563-58-6	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	- -	**<200 [<200]**	- -	**<1.00**	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	**<1,000 [<1,000]**	- -	<5.00	- -
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	**613**	**1,220 [1,410]**	**2,180**	6.60	6.51

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	- -	777 [<200]	- -	<1.00	- -
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	135	262 [316]	428 J	2.68	2.93
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
2-Butanone (MEK)	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	- -	418 J [487 J]	- -	<5.00	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
2-Phenylbutane	135-98-8	- -	ug/L	- -	<200 [<200]	- -	0.460 J	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	- -	1,870 JB [1,830 JB]	- -	<10.0	- -
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	1,800	31,000 [30,300]	23,400	9.90	3.06
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	1.61	- -
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Chlorobromomethane	74-97-5	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	1.76	- -
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	- -	<200 [<200]	- -	<1.00	- -
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Cymene	99-87-6	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	- -	<200 [<200]	- -	<1.00	- -
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	35.0 J	4,640 [4,760]	6,430	0.390 J	0.520 J

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	**<1,000 [<1,000]**	- -	<5.00	- -
Iodomethane	74-88-4	- -	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	- -	108 J [132 J]	- -	0.980 J	- -
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	**3,100**	**9,310 [9,590]**	**11,800**	10.4	10.0
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Methyl n-Butyl Ketone	591-78-6	- -	ug/L	- -	<1,000 [<1,000]	- -	<5.00	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	719	**55,100 [54,000]**	**54,900**	2.98	3.99
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	**128**	**<200 [<200]**	**260 J**	<1.00	<1.00
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	**115 J**	**209 J [285 J]**	**377 J**	**<5.00**	0.610 J
n-Butylbenzene	104-51-8	- -	ug/L	- -	<200 [<200]	- -	0.520 J	- -
n-Propylbenzene	103-65-1	- -	ug/L	66.7 J	199 J [243]	344 J	1.85	2.18
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	**1,480**	**4,430 [4,550]**	**6,080**	5.01	4.98
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
tert-Butylbenzene	98-06-6	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	- -	<200 [<200]	- -	<1.00	- -
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	- -	**<2,000 [<2,000]**	- -	**<10.0**	- -
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	- -	**<200 [<200]**	- -	<1.00	- -
SVOCs								
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	2.90 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Benzo(b&k)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
Bis(2-Chloroisopropyl) Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl) Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	- -	- -	- -
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Diphenylhydrazine	122-66-7	- -	ug/L	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosodi-n-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosodi-n-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09	HVW-06 05/11/09	HVW-06 09/28/09
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
VOCs (by USEPA 8021)								
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Total xylenes	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Metals-Dissolved								
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Boron, Dissolved	7440-42-8D	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Calcium, Dissolved	7440-70-2D	- -	ug/L	- -	- -	- -	- -	- -
Iron, Dissolved	7439-89-6D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Lithium, Dissolved	7439-93-2D	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Magnesium, Dissolved	7439-95-4D	- -	ug/L	- -	- -	- -	- -	- -
Manganese, Dissolved	7439-96-5D	200 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Phosphorus, Dissolved	7723-14-0	- -	ug/L	- -	- -	- -	- -	- -
Potassium, Dissolved	7440-09-7D	- -	ug/L	- -	- -	- -	- -	- -
Sodium, Dissolved	7440-23-5D	- -	ug/L	- -	- -	- -	- -	- -
Strontium, Dissolved	7440-24-6D	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Metals							
Divalent Manganese	MN+2	- -	ug/L	- -	- -	- -	- -
Feric Iron	FE+3	- -	ug/L	- -	- -	- -	- -
Ferrous Iron	FE+2	- -	ug/L	- -	- -	- -	- -
Manganese	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -	- -
Total Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	- -	- -	- -
Other							
Ammonia (N)	7664-41-7	--	ug/L	--	--	--	--
Bicarbonate	ALKBicarb	- -	ug/L	- -	- -	- -	- -
Bromide	24959-67-9	- -	ug/L	- -	- -	- -	- -
Carbonate	CO3	- -	ug/L	- -	- -	- -	- -
Carbon Dioxide	124-38-9	- -	ug/L	- -	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	- -
Chlorine (free, combined)	7782-50-5	- -	ug/L	- -	- -	- -	- -
Conductivity	Cond	- -	mS/cm	- -	- -	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	- -
Methane	74-82-8	- -	ug/L	- -	- -	- -	- -
Nitrate	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	- -	- -	- -	- -
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	- -	- -	- -
Temperature	TEMP	- -	deg C	- -	- -	- -	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	3,330,000	- -	4,820,000	- -
Total Phosphorous	7723-14-0T	- -	ug/L	- -	- -	- -	- -
TPH							
Gasoline Range Organics	GRO	- -	ug/L	148,000	123,000	123,000	254,000
VOCs (by USEPA 8260)							
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	<100	- -	<500	- -
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	<100	- -	<500	- -
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	<100	- -	<500	- -
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	<100	- -	<500	- -
1,1-Dichloropropene	563-58-6	- -	ug/L	<100	- -	<500	- -
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	<500	- -	<2,500	- -
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<500	- -	<2,500	- -
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	2,290	10,400	3,610	6,370

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	<500	- -	<2,500	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	496	2,690	870	1,580
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	<100	- -	<500	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	<100	- -	<500	- -
2-Butanone (MEK)	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	638	- -	6,370	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	<500	- -	<2,500	- -
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
2-Phenylbutane	135-98-8	- -	ug/L	<100	- -	<500	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	<100	- -	<500	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	<500	- -	<2,500	- -
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	1,960 B	- -	8,440 B	- -
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	7,320	11,600	29,100	26,500
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	<100	- -	<500	- -
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	<500	- -	<2,500	- -
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Chlorobromomethane	74-97-5	- -	ug/L	<100	- -	<500	- -
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	<100	- -	<500	- -
Cymene	99-87-6	- -	ug/L	<100	- -	<500	- -
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	<100	- -	<500	- -
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	<500	- -	312 J	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	5,590	9,800	6,660	9,380

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<500	- -	<2,500	- -
Iodomethane	74-88-4	- -	ug/L	<500	- -	<2,500	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	198	- -	325 J	- -
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	12,000	22,800	13,800	19,600
m-Dichlorobenzene	541-73-1	- -	ug/L	<100	- -	<500	- -
Methyl n-Butyl Ketone	591-78-6	- -	ug/L	<500	- -	<2,500	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	33,200	42,100	57,200	66,000
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<100	1,240	<500	89.1 J
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	391 J	1,300	452 J	952 J
n-Butylbenzene	104-51-8	- -	ug/L	<100	- -	<500	- -
n-Propylbenzene	103-65-1	- -	ug/L	383	2,180	709	1,300
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	5,230	9,790	6,300	8,750
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
tert-Butylbenzene	98-06-6	- -	ug/L	<100	- -	<500	- -
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	<100	- -	<500	- -
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	<1,000	- -	<5,000	- -
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	<100	- -	<500	- -
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	<100	- -	<500	- -
SVOCs							
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	534-52-1	2.90 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	- -	- -
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Benzo(b&k)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Bis(2-Chloroisopropyl) Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Bis(2-Ethylhexyl) Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	- -	- -
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Diphenylhydrazine	122-66-7	- -	ug/L	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
N-Nitrosodi-n-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
N-Nitrosodi-n-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
VOCs (by USEPA 8021)							
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	- -	- -	- -	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -
Total xylenes	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	- -	- -
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Metals-Dissolved							
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -
Boron, Dissolved	7440-42-8D	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Calcium, Dissolved	7440-70-2D	- -	ug/L	- -	- -	- -	- -
Iron, Dissolved	7439-89-6D	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -
Lithium, Dissolved	7439-93-2D	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -
Magnesium, Dissolved	7439-95-4D	- -	ug/L	- -	- -	- -	- -
Manganese, Dissolved	7439-96-5D	200 {NMED_GW}	ug/L	- -	- -	- -	- -
Phosphorus, Dissolved	7723-14-0	- -	ug/L	- -	- -	- -	- -
Potassium, Dissolved	7440-09-7D	- -	ug/L	- -	- -	- -	- -
Sodium, Dissolved	7440-23-5D	- -	ug/L	- -	- -	- -	- -
Strontium, Dissolved	7440-24-6D	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -

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Table 2-3. Summary of Vadose Zone Water Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Qualifier Type	Definition
J	Indicates an estimated value.
B	Analyte was detected in the associated method blank.
JB	Estimated value; analyte was also detected in the associated method blank.
EJ	Exceeds calibration range of GC/MS instrument; estimated value.
M	Duplicate injection precision not met.
JM	Estimated value; duplicate injection precision not met.
L	Subcontracted laboratory used.
Z	Analysis performed outside of holding time.

Acronym/Note	Description
All data reported from before 2009 were collected by others and the data were provided to ARCADIS by White Sands Missile Range.	
--	The sample was not tested for this constituent and/or no data were available.
1.7	Grey highlight indicates that the reported result exceeds the published screening level. If the result is preceded by "<", the constituent was not detected, but the reported sample quantitation limit exceeds the screening level.
[<50.0]	Brackets indicate that the result shown is from a duplicate field sample.
USEPA	United States Environmental Protection Agency.
EPA_MCL_GW	USEPA Maximum Contaminant Level, as defined in 40 Code of Federal Regulations, Part 141.
EPA _Tapwater_Adj_09	USEPA Residential Screening Level from *USEPA Regional Screening Levels* (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index/htm). 2009.
NMED	New Mexico Environment Department.
NMED_GW	NMED Water Quality Control Commission (WQCC) Standard. 1995. Part of the New Mexico Administrative Code (NMAC). Title 20, Chapter 6, Part 2 (Environmental Protection Water Quality Groundand Surface Water Protection: 20.6.2.3103, Standards for Ground Water of 10,000 mg/L TDS Concentration or Less. (WQCC adopted standards for NMED Groundwater Quality Bureau (GWQB) except for MTBE and free product).
NMED_Tapwater_09	NMED Tapwater Screening Level. NMED. 2009. Technical Background Document for Development of Soil Screening Levels, Revision 5.0. NMED Hazardous Waste Bureau and Ground Water Quality Bureau, Voluntary Remediation Program. August.
GW	Groundwater
µg/L	Microgram per liter.
mS/cm	MilliSiemens per centimeter.
deg C	Degrees Celsius.

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Metals - Total									
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	- -	14.0	- -	- -	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	<1	<0.200	- -	- -	- -	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -	- -	- -	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	- -	<12.5	- -	- -	- -	- -
Metals-Dissolved									
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	<50	13.0	- -	- -	- -	- -
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	1,000	- -	- -	- -	- -	- -
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	360,000	- -	- -	- -	- -	- -
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	<200	- -	- -	- -	- -	- -
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	430	- -	- -	- -	- -	- -
Magnesium, Dissolved	7439-95-4	- -	ug/L	280,000	- -	- -	- -	- -	- -
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	<50	- -	- -	- -	- -	- -
Phosphorus, Dissolved	13598-36-2	- -	ug/L	<200	- -	- -	- -	- -	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	12,000	- -	- -	- -	- -	- -
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	- -	<13.0	- -	- -	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	1,600,000	- -	- -	- -	- -	- -
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	6,600	- -	- -	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	<500	- -	- -	- -	- -	- -
Other									
Alkalinity	ALKN	- -	ug/L	- -	90,000	- -	- -	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	<5,000	90,000	- -	- -	- -	- -
Alkalinity, Carbonate	CO3	- -	ug/L	<5,000	<1,000	- -	- -	- -	- -
Ammonia Nitrogen	7664-41-7	- -	ug/L	<2,000	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Bromide	7726-95-6	- -	ug/L	<2,000	- -	- -	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	810,000	- -	- -	- -	- -	- -
Conductivity	Cond	- -	mS/cm	9.30	8.83	- -	- -	- -	9.77
Dissolved Oxygen	DO	- -	ug/L	- -	- -	- -	- -	- -	490
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	240	- -	- -	- -	- -	- -
Hydroxide Alkalinity	Calk	- -	ug/L	- -	<1,000	- -	- -	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	12,000	- -	- -	- -	- -	- -
Oxidation Reduction Potential	ORP	- -	millivolts	- -	- -	- -	- -	- -	-31.2
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	7.5	7.66	- -	- -	- -	7.59
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	4,700,000	4,500,000	- -	- -	- -	- -
Temperature	TEMP	- -	deg C	17.8	- -	- -	- -	- -	23.6
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	8,200,000 Z	7,210,000	- -	- -	- -	7,430,000
Turbidity	TURB	- -	NTU		- -	- -	- -	- -	9.00

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Semivolatile Organic Compounds									
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	<5.00	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	<5.00	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	<20.0	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	<5.00	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	<5.00	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	<5.00	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	<5.00	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	<5.00	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	- -	<5.00	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	<5.00	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	<5.00	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	<5.00	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	<5.00	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	<15.0	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	<20.0	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	<5.00	- -	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	<5.00	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	<5.00	- -	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Total Petroleum Hydrocarbons									
Gasoline Range Organics	GRO	- -	ug/L	<1,000	<100	- -	- -	- -	- -
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,1-Dichloropropene	563-58-6	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	<5.00	- -	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
2-Phenylbutane	135-98-8	- -	ug/L	- -	- -	- -	- -	- -	<1.00
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	- -	<10.0	- -	<10.0	<10.0	<10.0
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chlorobromomethane	74-97-5	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Cymene	99-87-6	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Iodomethane	74-88-4	- -	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	- -	<5.00	- -	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	- -	<5.00	- -	<5.00	<5.00	<5.00
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<1.0	<1.00	<1.00	<1.00	<1.00	<1.00
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<2.0	<1.00	- -	<1.00	<1.00	<1.00
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	**<5.00**	- -	**<5.00**	**<5.00**	**<5.00**
n-Butylbenzene	104-51-8	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
n-Propylbenzene	103-65-1	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
sec-Butylbenzene	135-9-88	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 06/01/00	HMW-48 06/03/04	HMW-48 03/09/06	HMW-48 04/03/07	HMW-48 04/24/08	HMW-48 02/25/09
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	- -	<5.00	- -	- -
tert-Butylbenzene	98-06-6	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	- -	<10.0	- -	<10.0	<10.0	<10.0
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00	<1.00	<1.00
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	<1.0	- -	<1.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Metals - Total								
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	- -	- -	<10.0	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	- -	- -	15.0	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	<1	<0.200	- -	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -	- -	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	- -	- -	<12.5	- -	- -
Metals-Dissolved								
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	- -	- -	<10.0	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	<50	13.0	- -	- -
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	- -	1,000	- -	- -	- -
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	- -	330,000	- -	- -	- -
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	- -	<200	- -	- -	- -
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	- -	440	- -	- -	- -
Magnesium, Dissolved	7439-95-4	- -	ug/L	- -	320,000	- -	- -	- -
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	- -	<50	- -	- -	- -
Phosphorus, Dissolved	13598-36-2	- -	ug/L	- -	<200	- -	- -	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	- -	12,000	- -	- -	- -
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	- -	- -	<10.0	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	- -	- -	<13.0	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	- -	1,700,000	- -	- -	- -
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	- -	6,600	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	<500	- -	- -	- -
Other								
Alkalinity	ALKN	- -	ug/L	- -	- -	102,000	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	- -	130,000	102,000	- -	- -
Alkalinity, Carbonate	CO3	- -	ug/L	- -	<5,000	<1,000	- -	- -
Ammonia Nitrogen	7664-41-7	- -	ug/L	- -	<2,000	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Bromide	7726-95-6	- -	ug/L	- -	<2,000	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	870,000	- -	- -	- -
Conductivity	Cond	- -	mS/cm	- -	9.700	9.49	- -	- -
Dissolved Oxygen	DO	- -	ug/L	- -	- -	- -	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	490	- -	- -	- -
Hydroxide Alkalinity	Calk	- -	ug/L	- -	- -	<1,000	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	- -	13,000	- -	- -	- -
Oxidation Reduction Potential	ORP	- -	millivolts	- -	- -	- -	- -	- -
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	- -	7.8	7.63	- -	- -
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	4,900,000	4,740,000	- -	- -
Temperature	TEMP	- -	deg C	- -	22.4	- -	- -	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	- -	8,300,000 Z	8,020,000	- -	- -
Turbidity	TURB	- -	NTU	- -	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Semivolatile Organic Compounds								
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	<5.00	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	<5.00	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	<20.0	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	<5.00	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	<5.00	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	<5.00	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	<5.00	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	<5.00	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	- -	- -	<5.00	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	<5.00	- -	- -

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4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	<5.00	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	<5.00	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	<5.00	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	- -	- -	<5.00	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	<5.00	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	<15.0	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	<5.00	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<20.0	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	<10.0	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	<5.00	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	<5.00	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	<5.00	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	- -	- -	<5.00	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	<5.00	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	<5.00	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	<5.00	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<5.00	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Total Petroleum Hydrocarbons								
Gasoline Range Organics	GRO	- -	ug/L	- -	<1,000	<100	- -	- -
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,1-Dichloropropene	563-58-6	- -	ug/L	- -	- -	<1.00	- -	<1.00
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	- -	- -	<5.00	- -	<5.00
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	<5.00
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<1.00	- -	<1.00
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	<5.00
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<1.00	- -	<1.00
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<1.00	- -	<1.00
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	<5.00
2,2-Dichloropropane	594-20-7	- -	ug/L	- -	- -	<1.00	- -	<1.00
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	<5.00
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	- -	- -	<5.00	- -	<5.00
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
2-Phenylbutane	135-98-8	- -	ug/L	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<1.00	- -	<1.00
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	<5.00
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	- -	- -	<10.0	- -	<10.0
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.00	<1.0	<1.00	<1.00	<1.00
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	<1.00	- -	<1.00

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	<5.00
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Chlorobromomethane	74-97-5	- -	ug/L	- -	- -	<1.00	- -	<1.00
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	- -	- -	<1.00	- -	<1.00
Cymene	99-87-6	- -	ug/L	- -	- -	<1.00	- -	<1.00
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	- -	- -	<5.00	- -	<5.00
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.00	<1.0	<1.00	<1.00	<1.00
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	<5.00
Iodomethane	74-88-4	- -	ug/L	- -	- -	<5.00	- -	<5.00
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	- -	- -	<5.00
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	- -	- -	<1.00	- -	<1.00
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	<2.00	- -	<1.00	- -	<1.00
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	<1.00	- -	<1.00
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	- -	- -	<5.00	- -	<5.00
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<2.00	<1.0	<1.00	<1.00	<1.00
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<1.00	<2.0	<1.00	- -	<1.00
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	**<5.00**	- -	**<5.00**
n-Butylbenzene	104-51-8	- -	ug/L	- -	- -	<1.00	- -	<1.00
n-Propylbenzene	103-65-1	- -	ug/L	- -	- -	<1.00	- -	<1.00
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	<1.00	- -	<1.00	- -	<1.00
sec-Butylbenzene	135-9-88	- -	ug/L	- -	- -	<1.00	- -	<1.00

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Table 2-4. Summary of Regional Groundwater Analytical Data
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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-48 03/15/10	HMW-49 06/01/00	HMW-49 06/02/04	HMW-49 03/08/06	HMW-49 04/02/07
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	- -	- -	<5.00
tert-Butylbenzene	98-06-6	- -	ug/L	- -	- -	<1.00	- -	<1.00
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	- -	- -	<1.00	- -	<1.00
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	- -	- -	<10.0	- -	<10.0
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	- -	- -	<1.00	- -	<1.00
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	- -	<1.0	- -	<1.00	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Metals - Total								
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	- -	- -	<1	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -	128	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Metals-Dissolved								
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	- -	- -	<50	<50
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	1,000	773
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	- -	- -	- -	360,000	410,000
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	- -	- -	- -	<200	<200
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	**420**	**<100**
Magnesium, Dissolved	7439-95-4	- -	ug/L	- -	- -	- -	300,000	280,000
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -	70	70
Phosphorus, Dissolved	13598-36-2	- -	ug/L	- -	- -	- -	<200	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	- -	- -	- -	12,000	36,000
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	- -	- -	- -	1,500,000	2,400,000
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	6,200	12,000
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	**<500**	**46.0**
Other								
Alkalinity	ALKN	- -	ug/L	- -	- -	- -	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	- -	- -	- -	130,000	99,000
Alkalinity, Carbonate	CO3	- -	ug/L	- -	- -	- -	<5,000	<1,400
Ammonia Nitrogen	7664-41-7	- -	ug/L	- -	- -	- -	<2,000	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Bromide	7726-95-6	- -	ug/L	- -	- -	- -	<2,000	<200
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	840,000	1,360,000
Conductivity	Cond	- -	mS/cm	- -	10.8	- -	9.500	0.0173
Dissolved Oxygen	DO	- -	ug/L	- -	1,960	- -	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	260	<1,000
Hydroxide Alkalinity	Calk	- -	ug/L	- -	- -	- -	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -	12,000	12,000
Oxidation Reduction Potential	ORP	- -	millivolts	- -	-27.7	- -	- -	- -
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	- -	7.77	- -	7.6	7.68
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	- -	- -	4,600,000	- -
Temperature	TEMP	- -	deg C	- -	20.9	- -	21.7	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	- -	8,090,000	- -	8,500,000 Z	- -
Turbidity	TURB	- -	NTU	- -	1.97	- -	- -	- -

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Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Semivolatile Organic Compounds								
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	- -	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	- -	- -	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Total Petroleum Hydrocarbons								
Gasoline Range Organics	GRO	- -	ug/L	- -	- -	- -	<1,000	- -
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,1-Dichloropropene	563-58-6	- -	ug/L	<1.00	<1.00	- -	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	<5.00	<5.00	- -	- -	- -
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<5.00	<5.00	- -	- -	- -
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	<1.00	<1.00	- -	- -	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	<5.00	<5.00	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	<1.00	<1.00	- -	- -	- -
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	<1.00	<1.00	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	<1.00	<1.00	- -	- -	- -
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	<5.00	<5.00	- -	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	<5.00	<5.00	- -	- -	- -
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
2-Phenylbutane	135-98-8	- -	ug/L	- -	<1.00	- -	- -	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	<1.00	<1.00	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	<5.00	<5.00	- -	- -	- -
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	<10.0	<10.0	- -	- -	- -
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	<1.00	<1.0	<0.625
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	<1.00	<1.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	<5.00	<5.00	- -	- -	- -
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Chlorobromomethane	74-97-5	- -	ug/L	<1.00	<1.00	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	<1.00	<1.00	- -	- -	- -
Cymene	99-87-6	- -	ug/L	<1.00	<1.00	- -	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	<5.00	<5.00	- -	- -	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.00	<1.00	<1.00	<1.0	<0.625
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<5.00	<5.00	- -	- -	- -
Iodomethane	74-88-4	- -	ug/L	<5.00	<5.00	- -	- -	- -
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	<1.00	<1.00	<2.00	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	<1.00	<1.00	- -	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	<5.00	<5.00	- -	- -	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<1.00	<1.00	<2.00	<1.0	<0.625
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	<1.00	<2.0	<0.625
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	<5.00	<5.00	- -	- -	- -
n-Butylbenzene	104-51-8	- -	ug/L	<1.00	<1.00	- -	- -	- -
n-Propylbenzene	103-65-1	- -	ug/L	<1.00	<1.00	- -	- -	- -
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	<1.00	<1.00	<1.00	- -	- -
sec-Butylbenzene	135-9-88	- -	ug/L	<1.00	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-49 04/23/08	HMW-49 02/25/09	HMW-49 03/11/10	HMW-50 06/01/00	HMW-50 (PDP) 06/01/00
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	ug/L	<1.00	<1.00	- -	- -	- -
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	<1.00	<1.00	- -	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	<10.0	<10.0	- -	- -	- -
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	<1.00	<1.00	- -	- -	- -
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	- -	<1.0	<0.625

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Table 2-4. Summary of Regional Groundwater Analytical Data
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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Metals - Total								
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	16.0 [15.0]	- -	- -	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	<0.200 [<0.200]	- -	- -	- -	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -	- -	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	<12.5 [<12.5]	- -	- -	- -	- -
Metals-Dissolved								
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	16.0 [15.0]	- -	- -	- -	- -
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	- -	- -	- -	- -	- -
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Magnesium, Dissolved	7439-95-4	- -	ug/L	- -	- -	- -	- -	- -
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Phosphorus, Dissolved	13598-36-2	- -	ug/L	- -	- -	- -	- -	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	- -	- -	- -	- -	- -
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	<13.0 [<13.0]	- -	- -	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	- -	- -	- -	- -	- -
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Other								
Alkalinity	ALKN	- -	ug/L	102,000 [104,000]	- -	- -	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	102,000 [104,000]	- -	- -	- -	- -
Alkalinity, Carbonate	CO3	- -	ug/L	<1,000 [<1,000]	- -	- -	- -	- -
Ammonia Nitrogen	7664-41-7	- -	ug/L	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Bromide	7726-95-6	- -	ug/L	- -	- -	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Conductivity	Cond	- -	mS/cm	9.57 [9.67]	- -	- -	- -	9.36
Dissolved Oxygen	DO	- -	ug/L	- -	- -	- -	- -	1,570
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Hydroxide Alkalinity	Calk	- -	ug/L	<1,000 [<1,000]	- -	- -	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Oxidation Reduction Potential	ORP	- -	millivolts	- -	- -	- -	- -	-24.6
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	7.62 [7.62]	- -	- -	- -	7.48
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	**4,770,000 [4,770,000]**	- -	- -	- -	- -
Temperature	TEMP	- -	deg C	- -	- -	- -	- -	19.2
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	**7,680,000 [7,510,000]**	- -	- -	- -	**8,640,000**
Turbidity	TURB	- -	NTU	- -	- -	- -	- -	0.430

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Table 2-4. Summary of Regional Groundwater Analytical Data
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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Semivolatile Organic Compounds								
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	<20.0 [<20.0]	- -	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -

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Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	<15.0 [<15.0]	- -	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	<20.0 [<20.0]	- -	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	<10.0 [<10.0]	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -

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Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	<5.00 [<5.00]	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Total Petroleum Hydrocarbons								
Gasoline Range Organics	GRO	- -	ug/L	<100 [<100]	- -	- -	- -	- -
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,1-Dichloropropene	563-58-6	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	<5.00	- -	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
2-Phenylbutane	135-98-8	- -	ug/L	- -	- -	- -	- -	<1.00
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	<10.0 [<10.0]	- -	<10.0	<10.0	<10.0
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	<1.00	<1.00	<1.00	<1.00
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chlorobromomethane	74-97-5	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Cymene	99-87-6	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	<1.00	<1.00	<1.00	<1.00
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Iodomethane	74-88-4	- -	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	<5.00	- -	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
m-Dichlorobenzene	541-73-1	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	<5.00 [<5.00]	- -	<5.00	<5.00	<5.00
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<1.00 [<1.00]	<1.00	<1.00	<1.00	<1.00
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	**<5.00 [<5.00]**	- -	**<5.00**	**<5.00**	**<5.00**
n-Butylbenzene	104-51-8	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
n-Propylbenzene	103-65-1	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
sec-Butylbenzene	135-9-88	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 06/02/04	HMW-50 03/08/06	HMW-50 04/03/07	HMW-50 04/23/08	HMW-50 02/23/09
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	<5.00	- -	- -
tert-Butylbenzene	98-06-6	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	<10.0 [<10.0]	- -	<10.0	<10.0	<10.0
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	<1.00	<1.00	<1.00
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	- -	<1.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Metals - Total								
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	- -	38.0	- -	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	<0.200	- -	- -	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -	- -	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	- -	<12.5	- -	- -	- -
Metals-Dissolved								
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	36.0	- -	- -	- -
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	- -	- -	- -	- -	- -
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -	- -	- -
Magnesium, Dissolved	7439-95-4	- -	ug/L	- -	- -	- -	- -	- -
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Phosphorus, Dissolved	13598-36-2	- -	ug/L	- -	- -	- -	- -	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	- -	- -	- -	- -	- -
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	- -	<10.0	- -	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	- -	<13.0	- -	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	- -	- -	- -	- -	- -
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -	- -	- -
Other								
Alkalinity	ALKN	- -	ug/L	- -	144,000	- -	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	- -	144,000	- -	- -	- -
Alkalinity, Carbonate	CO3	- -	ug/L	- -	<1,000	- -	- -	- -
Ammonia Nitrogen	7664-41-7	- -	ug/L	- -	- -	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Bromide	7726-95-6	- -	ug/L	- -	- -	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Conductivity	Cond	- -	mS/cm	- -	10.8	- -	- -	- -
Dissolved Oxygen	DO	- -	ug/L	- -	- -	- -	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Hydroxide Alkalinity	Calk	- -	ug/L	- -	<1,000	- -	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -	- -	- -
Oxidation Reduction Potential	ORP	- -	millivolts	- -	- -	- -	- -	- -
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.18	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	- -	7.68	- -	- -	- -
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	**5,370,000**	- -	- -	- -
Temperature	TEMP	- -	deg C	- -	- -	- -	- -	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	- -	**8,640,000**	- -	- -	- -
Turbidity	TURB	- -	NTU	- -	- -	- -	- -	- -

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White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Semivolatile Organic Compounds								
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	<5.00	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	<5.00	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	<20.0	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	<5.00	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	<5.00	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	<5.00	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	<5.00	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	<5.00	- -	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	- -	<5.00	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	<5.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	<5.00	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	<5.00	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	<5.00	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	- -	<5.00	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	<5.00	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	<15.0	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	<5.00	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	<20.0	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	<10.0	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	<5.00	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	<5.00	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	<5.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	- -	<5.00	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	<5.00	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	<5.00	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	<5.00	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	<5.00	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Total Petroleum Hydrocarbons								
Gasoline Range Organics	GRO	- -	ug/L	- -	<100	- -	- -	- -
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,1-Dichloropropene	563-58-6	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -	<5.00 [<5.00]	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
2-Phenylbutane	135-98-8	- -	ug/L	- -	- -	- -	- -	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	- -	<10.0	- -	<10.0 [<10.0]	<10.0 [<10.0]
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.00	<1.00	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chlorobromomethane	74-97-5	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Cymene	99-87-6	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.00	<1.00	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Iodomethane	74-88-4	- -	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	- -	<5.00 [<5.00]	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	<2.00	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	- -	<5.00	- -	<5.00 [<5.00]	<5.00 [<5.00]
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<2.00	<1.00	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	<1.00	<1.00	- -	19.9 [20.0]	11.2 [11.5]
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	**<5.00**	- -	**<5.00 [<5.00]**	**<5.00 [<5.00]**
n-Butylbenzene	104-51-8	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
n-Propylbenzene	103-65-1	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	<1.00	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
sec-Butylbenzene	135-9-88	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-50 03/11/10	HMW-52 06/03/04	HMW-52 03/08/06	HMW-52 04/03/07	HMW-52 04/24/08
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	- -	<5.00 [<5.00]	- -
tert-Butylbenzene	98-06-6	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	- -	<10.0	- -	<10.0 [<10.0]	<10.0 [<10.0]
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	- -	<1.00	- -	<1.00 [<1.00]	<1.00 [<1.00]
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	<1.00 [<1.00]	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Metals - Total						
Arsenic	7440-38-2	10 {EPA_MCL_GW}	ug/L	- -	- -	- -
Barium	7440-39-3	1,000 {NMED_GW}	ug/L	- -	- -	- -
Cadmium	7440-43-9	5 {EPA_MCL_GW}	ug/L	- -	- -	- -
Chromium	7440-47-3	50 {NMED_GW}	ug/L	- -	- -	- -
Lead	7439-92-1	50 {NMED_GW}	ug/L	- -	- -	- -
Mercury	7439-97-6	2 {NMED_GW}	ug/L	- -	- -	- -
Phosphorous	7723-14-0	- -	ug/L	- -	- -	- -
Selenium	7782-49-2	50 {NMED_GW}	ug/L	- -	- -	- -
Silver	7440-22-4	50 {NMED_GW}	ug/L	- -	- -	- -
Metals-Dissolved						
Arsenic, Dissolved	7440-38-2D	10 {EPA_MCL_GW}	ug/L	- -	- -	- -
Barium, Dissolved	7440-39-3D	1,000 {NMED_GW}	ug/L	- -	- -	- -
Boron, Dissolved	7440-42-8	7,300 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Cadmium, Dissolved	7440-43-9D	5 {EPA_MCL_GW}	ug/L	- -	- -	- -
Calcium, Dissolved	7789-78-8	- -	ug/L	- -	- -	- -
Chromium, Dissolved	7440-47-3D	50 {NMED_GW}	ug/L	- -	- -	- -
Iron, Dissolved	15438-31-0	1,000 {NMED_GW}	ug/L	- -	- -	- -
Lead, Dissolved	7439-92-1D	50 {NMED_GW}	ug/L	- -	- -	- -
Lithium, Dissolved	7439-93-2	73 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Magnesium, Dissolved	7439-95-4	- -	ug/L	- -	- -	- -
Manganese, Dissolved	7439-96-5	200 {NMED_GW}	ug/L	- -	- -	- -
Phosphorus, Dissolved	13598-36-2	- -	ug/L	- -	- -	- -
Potassium, Dissolved	7440-09-7	- -	ug/L	- -	- -	- -
Selenium, Dissolved	7782-49-2D	50 {NMED_GW}	ug/L	- -	- -	- -
Silver, Dissolved	7440-22-4D	50 {NMED_GW}	ug/L	- -	- -	- -
Sodium, Dissolved	82115-62-6	- -	ug/L	- -	- -	- -
Strontium, Dissolved	7440-24-6	21,900 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Uranium, Dissolved	7440-61-1	30 {EPA_MCL_GW}	ug/L	- -	- -	- -
Other						
Alkalinity	ALKN	- -	ug/L	- -	- -	- -
Alkalinity, Bicarbonate	ALKBicarb	- -	ug/L	- -	- -	- -
Alkalinity, Carbonate	CO3	- -	ug/L	- -	- -	- -
Ammonia Nitrogen	7664-41-7	- -	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Bromide	7726-95-6	- -	ug/L	- -	- -	- -
Chloride	16887-00-6	250,000 {NMED_GW}	ug/L	- -	- -	- -
Conductivity	Cond	- -	mS/cm	35.5 [35.4]	- -	- -
Dissolved Oxygen	DO	- -	ug/L	3,320	- -	- -
Fluoride	16984-48-8	1,600 {NMED_GW}	ug/L	- -	- -	- -
Hydroxide Alkalinity	Calk	- -	ug/L	- -	- -	- -
Nitrate Nitrogen	14797-55-8	10,000 {NMED_GW}	ug/L	- -	- -	- -
Oxidation Reduction Potential	ORP	- -	millivolts	-37.7	- -	- -
Perchlorate	14797-73-0	26 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
pH	pH	6-9 {NMED_GW}	pH Units	**9.21 [9.33]**	- -	- -
Sulfate	14808-79-8	600,000 {NMED_GW}	ug/L	- -	- -	- -
Temperature	TEMP	- -	deg C	21.0	- -	- -
Total Dissolved Solids	TDS	1,000,000 {NMED_GW}	ug/L	**33,100,000 [33,200,000]**	- -	- -
Turbidity	TURB	- -	NTU	1.98	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Semivolatile Organic Compounds						
1,2,4,5-Tetrachlorobenzene	95-94-3	11 {NMED_Tapwater_09}	ug/L	- -	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	218-01-9	92.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	- -	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	- -	- -	- -
1-Chloronaphthalene	90-13-1	- -	ug/L	- -	- -	- -
1-Methylnaphthalene	90-12-0	23 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
1-Naphthylamine	134-32-7	- -	ug/L	- -	- -	- -
2,4,5-Trichlorophenol	95-95-4	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,4,6-Trichlorophenol	88-06-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,4-Dichlorophenol	120-83-2	110 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,4-Dimethylphenol	105-67-9	730 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,4-Dinitrophenol	51-28-5	73 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,4-Dinitrotoluene	121-14-2	2.17 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,6-Dichlorophenol	87-65-0	- -	ug/L	- -	- -	- -
2,6-Dinitrotoluene	606-20-2	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2-Chloronaphthalene (b-)	91-58-7	2,920 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2-Chlorophenol	95-57-8	183 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2-Methyl Pyridine	109-06-8	- -	ug/L	- -	- -	- -
2-Methylnaphthalene	91-57-6	150 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
2-Methylphenol (o-cresol)	95-48-7	1,800 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
2-Naphthylamine	91-59-8	0.37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
2-Nitroaniline	88-74-4	370 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
2-Nitrophenol	88-75-5	- -	ug/L	- -	- -	- -
3,3-Dichlorobenzidine	91-94-1	1.4 {NMED_Tapwater_09}	ug/L	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	78-59-1	707 {NMED_Tapwater_09}	ug/L	- -	- -	- -
3-Methylchloranthrene	56-49-5	0.031 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
3-Methylphenol/4-Methylphenol	108-39-4b	- -	ug/L	- -	- -	- -
3-Nitroaniline	99-09-2	- -	ug/L	- -	- -	- -
4,6-Dinitro-2-Methylphenol	543-52-1	- -	ug/L	- -	- -	- -
4-Aminobiphenyl	92-67-1	0.032 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
4-Bromophenyl Phenyl Ether	101-55-3	- -	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
4-Chloro-3-Methylphenol	59-50-7	- -	ug/L	- -	- -	- -
4-Chlorophenyl Phenyl Ether	7005-72-3	- -	ug/L	- -	- -	- -
4-Dimethylaminoazobenzene	60-11-7	0.15 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
4-Nitrophenol	100-02-7	- -	ug/L	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	57-97-6	0.0027 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
a,a-Dimethylphenethylamine	122-09-8	- -	ug/L	- -	- -	- -
Acenaphthene	83-32-9	2,190 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Acenaphthylene	208-96-8	- -	ug/L	- -	- -	- -
Acetophenone	98-86-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Aniline	62-53-3	120 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Anthracene	120-12-7	11,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Benzidine	92-87-5	0.00292 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Benzo(a)Anthracene	56-55-3	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Benzo(a)Pyrene	50-32-8	0.2 {EPA_MCL_GW}	ug/L	- -	- -	- -
Benzo(b)Fluoranthene	205-99-2	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Benzo(g,h,i)Perylene	191-24-2	- -	ug/L	- -	- -	- -
Benzo(k)Fluoranthene	207-08-9	9.21 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Benzoic Acid	65-85-0	150,000 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Benzyl Alcohol	100-51-6	3,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	85-68-7	350 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Bis (2-Chloroethoxy) Methane	111-91-1	110 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Bis(2-Chloroethyl) Ether	111-44-4	0.119 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	39638-32-9	9.6 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	117-81-7	6 {EPA_MCL_GW}	ug/L	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	58-90-2	1,100 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Dibenz(a,h)Anthracene	53-70-3	0.0921 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Dibenz(a,j)Acridine	224-42-0	- -	ug/L	- -	- -	- -
Dibenzofuran	132-64-9	- -	ug/L	- -	- -	- -
Diethyl Phthalate	84-66-2	29,200 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Dimethyl Phthalate	131-11-3	365,000 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Di-n-Butyl Phthalate	84-74-2	3,650 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Di-n-Octyl Phthalate	117-84-0	- -	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Diphenylamine	122-39-4	910 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Diphenylhydrazine	38622-18-3	- -	ug/L	- -	- -	- -
Ethyl Methanesulfonate	62-50-0	- -	ug/L	- -	- -	- -
Fluoranthene	206-44-0	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Fluorene	86-73-7	1,460 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Hexachlorobenzene	118-74-1	1 {EPA_MCL_GW}	ug/L	- -	- -	- -
Hexachlorocyclopentadiene	77-47-4	50 {EPA_MCL_GW}	ug/L	- -	- -	- -
Hexachloroethane	67-72-1	36.5 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	193-39-5	0.921 {NMED_Tapwater_09}	ug/L	- -	- -	- -
m-Dichlorobenzene	541-73-1	- -	ug/L	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	62-75-9	0.0132 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Methyl Methanesulfonate	66-27-3	6.8 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Nitrobenzene	98-95-3	14.9 {NMED_Tapwater_09}	ug/L	- -	- -	- -
N-Nitrosodi-N-Butylamine	924-16-3	0.0244 {NMED_Tapwater_09}	ug/L	- -	- -	- -
N-Nitrosodi-N-Propylamine	621-64-7	0.096 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
N-Nitrosopiperidine	100-75-4	0.072 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
p-Chloroaniline	106-47-8	3.4 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Pentachlorobenzene	608-93-5	29.2 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Pentachloronitrobenzene	82-68-8	2.6 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Pentachlorophenol	87-86-5	1 {EPA_MCL_GW}	ug/L	- -	- -	- -
Phenacetin	62-44-2	310 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Phenanthrene	85-01-8	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Phenol	108-95-2	5 {NMED_GW}	ug/L	- -	- -	- -
p-Nitroaniline	100-01-6	34 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Propyzamide (Kerb)	23950-58-5	2,700 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -
Pyrene	129-00-0	1,100 {NMED_Tapwater_09}	ug/L	- -	- -	- -
Pyridine	110-86-1	37 {EPA_Tapwater_Adj_09}	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Total Petroleum Hydrocarbons						
Gasoline Range Organics	GRO	- -	ug/L	- -	<200 [<200]	- -
Volatile Organic Compounds						
1,1,1,2-Tetrachloroethane	630-20-6	5.2 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
1,1,1-Trichloroethane	71-55-6	60 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,1,2,2-Tetrachloroethane	79-34-5	10 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,1,2-Trichloroethane	79-00-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,1-Dichloroethane	75-34-3	25 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,1-Dichloroethylene	75-35-4	5 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,1-Dichloropropene	563-58-6	- -	ug/L	<1.00 [<1.00]	- -	- -
1,2,3-Trichlorobenzene	87-61-6	- -	ug/L	<5.00 [<5.00]	- -	- -
1,2,3-Trichloropropane	96-18-4	0.096 {NMED_Tapwater_09}	ug/L	**<1.00 [<1.00]**	- -	- -
1,2,4-Trichlorobenzene	120-82-1	70 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -
1,2,4-Trimethylbenzene	95-63-6	15 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	- -
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	0.2 {EPA_MCL_GW}	ug/L	**<5.00 [<5.00]**	- -	- -
1,2-Dibromoethane (ethylene dibromide)	106-93-4	0.05 {EPA_MCL_GW}	ug/L	**<1.00 [<1.00]**	- -	- -
1,2-Dichlorobenzene	95-50-1	600 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,2-Dichloroethane	107-06-2	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,2-Dichloropropane	78-87-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,3,5-Trimethylbenzene	108-67-8	370 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	- -
1,3-Dichloropropane	142-28-9	730 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	- -
1,4-Dichlorobenzene	106-46-7	75 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
1,4-Dioxane	123-91-1	61.1 {NMED_Tapwater_09}	ug/L	- -	- -	- -
2,2-Dichloropropane	594-20-7	- -	ug/L	<1.00 [<1.00]	- -	- -
2-Butanone	78-93-3	7,060 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -
2-Chloroethyl Vinyl Ether	110-75-8	- -	ug/L	<5.00 [<5.00]	- -	- -
2-Chlorotoluene	95-49-8	730 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
2-Phenylbutane	135-98-8	- -	ug/L	<1.00 [<1.00]	- -	- -
4-Chlorotoluene	106-43-4	2,600 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	- -
4-Methyl-2-Pentanone(MIBK)	108-10-1	1,990 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -
Acetone	67-64-1	21,800 {NMED_Tapwater_09}	ug/L	<10.0 [<10.0]	- -	- -
Acrylonitrile	107-13-1	0.454 {NMED_Tapwater_09}	ug/L	**<1.00 [<1.00]**	- -	- -
Benzene	71-43-2	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
Bromobenzene	108-86-1	88 {EPA_Tapwater_Adj_09}	ug/L	<1.00 [<1.00]	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Bromodichloromethane	75-27-4	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Bromomethane	74-83-9	8.66 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -
Carbon Disulfide	75-15-0	1,042 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
Carbon Tetrachloride	56-23-5	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
CFC-11 (Trichlorofluoromethane)	75-69-4	1,290 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
CFC-12 (Dichlorodifluoromethane)	75-71-8	395 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
Chlorobenzene	108-90-7	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Chlorobromomethane	74-97-5	- -	ug/L	<1.00 [<1.00]	- -	- -
Chlorodibromomethane (Dibromochloromethane)	124-48-1	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Chloroethane (Ethylchloride)	75-00-3	20,800 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
Chloroform	67-66-3	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Chloromethane	74-87-3	17.8 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
cis-1,2-Dichloroethene	156-59-2	70 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
cis-1,3-Dichloropropene	10061-01-5	- -	ug/L	<1.00 [<1.00]	- -	- -
Cymene	99-87-6	- -	ug/L	<1.00 [<1.00]	- -	- -
Dibromomethane (Methylene Dibromide)	74-95-3	365 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
Dichloromethane (Methylene Chloride)	75-09-2	5 {EPA_MCL_GW}	ug/L	<5.00 [<5.00]	- -	- -
Ethylbenzene	100-41-4	700 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
Hexachloro-1,3-Butadiene	87-68-3	8.62 {NMED_Tapwater_09}	ug/L	<5.00 [<5.00]	- -	- -
Iodomethane	74-88-4	- -	ug/L	<5.00 [<5.00]	- -	- -
Isopropyl Alcohol (Manufacturing-Strong Acid)	67-63-0	- -	ug/L	- -	- -	- -
Isopropylbenzene (Cumene)	98-82-8	679 {NMED_Tapwater_09}	ug/L	<1.00 [<1.00]	- -	- -
m,p-Xylene (m-Xylene)	108-38-3	620 {NMED_GW}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	<2.00 [<2.00]
m-Dichlorobenzene	541-73-1	- -	ug/L	<1.00 [<1.00]	- -	- -
Methyl N-Butyl Ketone	591-78-6	- -	ug/L	<5.00 [<5.00]	- -	- -
Methylbenzene (Toluene)	108-88-3	750 {NMED_GW}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	<2.00 [<2.00]
MTBE	1634-04-4	125 {NMED_Tapwater_09}	ug/L	8.41 [8.73]	9.40 [9.15]	7.91 [7.96]
Naphthalene	91-20-3	1.43 {NMED_Tapwater_09}	ug/L	**<5.00 [<5.00]**	**<5.00 [<5.00]**	- -
n-Butylbenzene	104-51-8	- -	ug/L	<1.00 [<1.00]	- -	- -
n-Propylbenzene	103-65-1	- -	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	- -
o-Xylene	95-47-6	620 {NMED_GW}	ug/L	<1.00 [<1.00]	<1.00 [<1.00]	<1.00 [<1.00]
sec-Butylbenzene	135-9-88	- -	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Location ID: / Date Collected:	CAS	Comparative Standard	Units	HMW-52 02/23/09	HMW-52 09/23/09	HMW-52 03/15/10
Styrene (Monomer)	100-42-5	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Tert-Butyl Alcohol	75-65-0	- -	ug/L	- -	- -	- -
tert-Butylbenzene	98-06-6	- -	ug/L	<1.00 [<1.00]	- -	- -
Tetrachloroethene	127-18-4	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Trans-1,2-Dichloroethene	156-60-5	100 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Trans-1,3-Dichloropropene	10061-02-6	- -	ug/L	<1.00 [<1.00]	- -	- -
Trans-1,4-Dichlorobutene	110-57-6	0.0187 {NMED_Tapwater_09}	ug/L	**<10.0 [<10.0]**	- -	- -
Tribromomethane (Bromoform)	75-25-2	80 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Trichloroethylene	79-01-6	5 {EPA_MCL_GW}	ug/L	<1.00 [<1.00]	- -	- -
Vinyl Chloride	75-01-4	1 {NMED_GW}	ug/L	<1.00 [<1.00]	- -	- -
Xylenes (total xylenes)	1330-20-7	620 {NMED_GW}	ug/L	- -	- -	- -

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Table 2-4. Summary of Regional Groundwater Analytical Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Qualifier Type	Definition
J	Indicates an estimated value.
B	Analyte was also detected in the associated method blank.
JB	Estimated value; analyte was also detected in the associated method blank.
Z	Analysis performed outside of hold time

Acronym/Note	Description
All data reported from before 2009 were collected by others and the data were provided to ARCADIS by White Sands Missile Range.	
--	The sample was not tested for this constituent and/or no data were available.
1.7	Grey highlight indicates that the reported result exceeds the published screening level. If the result is preceded by "<", the constituent was not detected, but the reported sample quantitation limit exceeds the screening level.
(PDP)	Split sample values reported by PDP Analytical Services.
[<0.005]	Brackets indicate that the result shown is from a duplicate field sample.
CAS	Chemical Abstract Service.
USEPA	United States Environmental Protection Agency.
EPA_MCL_GW	USEPA Maximum Contaminant Level, as defined in 40 Code of Federal Regulations, Part 141.
EPA _Tapwater_Adj_09	USEPA Residential Screening Level from *USEPA Regional Screening Levels* (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index/htm). 2009.
NMED	New Mexico Environment Department.
NMED_GW	NMED Water Quality Control Commission (WQCC) Standard. 1995. Part of the New Mexico Administrative Code (NMAC). Title 20, Chapter 6, Part 2 (Environmental Protection Water Quality Groundand Surface Water Protection: 20.6.2.3103, Standards for Ground Water of 10,000 mg/L TDS Concentration or Less. (WQCC adopted standards for NMED Groundwater Quality Bureau (GWQB) except for MTBE and free product).
NMED_Tapwater_09	NMED Tapwater Screening Level. NMED. 2009. Technical Background Document for Development of Soil Screening Levels, Revision 5.0. NMED Hazardous Waste Bureau and Ground Water Quality Bureau, Voluntary Remediation Program. August.
GW	Groundwater.
µg/L	Microgram per liter.
NTU	Nephelometric turbidity units.
mS/cm	MilliSeimens per centimeter.
Deg C	Degrees Celsius.

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Table 2-5. Regional Aquifer Water Level Elevation Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Well	Date	Total Depth (ft)	Top of Casing (ft)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Dry (yes/no)	Product Depth (ft)	Product Thickness (ft)
HMW-48	4/9/2002	110	3965.657	93.18	3872.477	no	--	--
	6/2/2004	110	3965.657	93.07	3872.587	no	--	--
	3/9/2006	110	3965.657	92.95	3872.707	no	--	--
	4/3/2007	110	3965.657	93.05	3872.607	no	--	--
	4/24/2008	110	3965.657	93.05	3872.607	no	--	--
	1/21/2009	110	3965.657	93.35	3872.307	no	--	--
	1/21/2009	110	3965.657	93.35	3872.307	no	--	--
	2/25/2009	110	3965.657	93.23	3872.427	no	--	--
	2/25/2009	110	3965.657	93.28	3872.377	no	--	--
	7/24/2009	110	3965.657	93.3	3872.357	no	--	--
	9/23/2009	110	3965.657	93.25	3872.407	no	--	--
	3/11/2010	110	3965.657	93.31	3872.347	no	--	--
HMW-49	4/9/2002	110	3965.503	93.33	3872.173	no	--	--
	6/2/2004	110	3965.503	93.22	3872.283	no	--	--
	3/8/2006	110	3965.503	93.05	3872.453	no	--	--
	4/2/2007	110	3965.503	93.26	3872.243	no	--	--
	4/23/2008	110	3965.503	93.26	3872.243	no	--	--
	1/21/2009	110	3965.503	93.49	3872.013	no	--	--
	1/21/2009	110	3965.503	93.49	3872.013	no	--	--
	2/25/2009	110	3965.503	93.36	3872.143	no	--	--
	2/25/2009	110	3965.503	92.39	3873.113	no	--	--
	7/24/2009	110	3965.503	93.45	3872.053	no	--	--
	9/23/2009	110	3965.503	93.4	3872.103	no	--	--
	3/11/2010	110	3965.503	93.25	3872.253	no	--	--
HMW-50	4/9/2002	110	3965.125	93.21	3871.915	no	--	--
	6/2/2004	110	3965.125	93.03	3872.095	no	--	--
	3/8/2006	110	3965.125	92.89	3872.235	no	--	--
	4/3/2007	110	3965.125	93.01	3872.115	no	--	--
	4/23/2008	110	3965.125	93.15	3871.975	no	--	--
	1/21/2009	110	3965.125	93.32	3871.805	no	--	--
	1/21/2009	110	3965.125	93.32	3871.805	no	--	--
	2/23/2009	110	3965.125	93.45	3871.675	no	--	--
	2/23/2009	110	3965.125	93.49	3871.635	no	--	--
	7/24/2009	110	3965.125	93.37	3871.755	no	--	--
	9/23/2009	110	3965.125	93.27	3871.855	no	--	--
	3/11/2010	110	3965.125	93.12	3872.005	no	--	--

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Table 2-5. Regional Aquifer Water Level Elevation Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Well	Date	Total Depth (ft)	Top of Casing (ft)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Dry (yes/no)	Product Depth (ft)	Product Thickness (ft)
HMW-52	6/2/2004	100.2	3963.191	91.05	3872.141	no	--	--
	3/8/2006	100.2	3963.191	91	3872.191	no	--	--
	4/3/2007	100.2	3963.191	91	3872.191	no	--	--
	4/24/2008	100.2	3963.191	91	3872.191	no	--	--
	1/21/2009	100.2	3963.191	89.7	3873.491	no	--	--
	1/21/2009	100.2	3963.191	89.7	3873.491	no	--	--
	2/23/2009	100.2	3963.191	89.35	3873.841	no	--	--
	2/23/2009	100.2	3963.191	89.35	3873.841	no	--	--
	7/24/2009	100.2	3963.191	89.45	3873.741	no	--	--
	9/23/2009	100.2	3963.191	89.65	3873.541	no	--	--
	3/11/2010	100.2	3963.191	89.54	3873.651	no	--	--

Notes:

TOC: Top of casing

ft: feet

ft amsl: feet above mean sea level

---: none present/none detected

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Table 2-6. Summary of Vadose Zone Water Level Elevation Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Well	Date	Total Depth (ft)	Top of Casing (ft)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Dry (yes/no)	Product Depth (ft)	Product Thickness (ft)
HVW-01	6/2/2004	20	3963.445	16.51	3946.935	no	--	--
	4/30/2007	20	3963.445	20.61	3942.835	no	--	--
	1/21/2009	20	3963.445	20.60	3942.845	no	20.60	sheen
	4/17/2009	20	3963.445	20.67	3942.775	no	20.67	sheen
	7/24/2009	20	3963.445	20.65	3942.795	no	--	--
	9/23/2009	20	3963.445	20.64	3942.805	no	--	--
	3/22/2010	20	3963.445	20.66	3942.785	no	20.65	0.01
HVW-02	4/30/2007	36	3962.623	26.81	3935.813	no	--	--
	1/21/2009	36	3962.623	28.20	3934.423	no	28.20	sheen
	2/25/2009	36	3962.623	28.07	3934.553	no	--	--
	2/25/2009	36	3962.623	27.35	3935.273	no	--	--
	4/17/2009	36	3962.623	27.74	3934.883	no	--	--
	7/24/2009	36	3962.623	28.45	3934.173	no	--	--
	9/23/2009	36	3962.623	28.80	3933.823	no	--	--
	3/22/2010	36	3962.623	29.08	3933.543	no	--	--
HVW-03	6/2/2004	36	3963.355	28.48	3934.875	no	--	--
	4/30/2007	36	3963.355	27.30	3936.055	no	--	--
	1/21/2009	36	3963.355	28.80	3934.555	no	28.60	0.2
	2/24/2009	36	3963.355	28.82	3934.535	no	--	--
	2/24/2009	36	3963.355	28.44	3934.915	no	--	--
	4/17/2009	36	3963.355	28.50	3934.855	no	28.49	0.01
	7/24/2009	36	3963.355	29.30	3934.055	no	29.12	0.18
	9/23/2009	36	3963.355	29.80	3933.555	no	29.62	0.18
	3/22/2010	36	3963.355	29.80	3933.555	no	29.75	0.05
HVW-04	6/2/2004	36	3963.116	27.56	3935.556	no	--	--
	4/30/2007	36	3963.116	27.19	3935.926	no	--	--
	1/21/2009	36	3963.116	28.40	3934.716	no	--	--
	2/24/2009	36	3963.116	28.35	3934.766	no	--	--
	2/24/2009	36	3963.116	27.98	3935.136	no	--	--
	4/17/2009	36	3963.116	28.32	3934.796	no	--	--
	7/24/2009	36	3963.116	28.92	3934.196	no	--	--
	9/23/2009	36	3963.116	29.20	3933.916	no	--	--
	3/22/2010	36	3963.116	29.43	3933.686	no	29.42	0.01
HVW-05	4/17/2009	35	3963.128	28.38	3934.748	no	27.73	0.65
	5/12/2009	35	3963.128	27.84	3935.288	no	--	--
	7/24/2009	35	3963.128	29.92	3933.208	no	28.45	1.47
	9/23/2009	35	3963.128	30.05	3933.078	no	29.60	0.45
	3/22/2010	35	3963.128	29.62	3933.508	no	29.40	0.22

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Table 2-6. Summary of Vadose Zone Water Level Elevation Data
Status Report for the HELSTF TSA Gasoline Spill Site SWMU 197 (CCWS-16)
White Sands Missile Range, New Mexico

Well	Date	Total Depth (ft)	Top of Casing (ft)	Depth to Water (ft below TOC)	Groundwater Elevation (ft amsl)	Dry (yes/no)	Product Depth (ft)	Product Thickness (ft)
HVW-06	4/17/2009	--	3963.077	22.90	3940.177	no	22.89	0.01
	5/11/2009	--	3963.077	23.14	3939.937	no	--	--
	7/24/2009	--	3963.077	23.26	3939.817	no	--	--
	9/23/2009	--	3963.077	23.51	3939.567	no	--	--
	3/22/2010	--	3963.077	28.86	3934.217	no	28.85	0.01
HVW-07	4/17/2009	22	3962.933	--	--	yes	--	--
	5/11/2009	22	3962.933	--	--	yes	--	--
	7/24/2009	22	3962.933	--	--	yes	--	--
	9/23/2009	22	3962.933	--	--	yes	--	--
	3/22/2010	22	3962.933	--	--	yes	--	--
HVW-08	4/17/2009	30	3962.745	28.29	3934.455	no	27.69	0.6
	5/11/2009	30	3962.745	28.80	3933.945	no	27.70	1.1
	7/24/2009	30	3962.745	29.55	3933.195	no	28.25	1.3
	9/23/2009	30	3962.745	29.30	3933.445	no	28.85	0.45
	3/22/2010	30	3962.745	29.45	3933.295	no	29.01	0.44
HVW-09	4/17/2009	22	3961.57	22.42	3939.15	no	--	--
	5/11/2009	22	3961.57	--	--	yes	--	--
	7/24/2009	22	3961.57	--	--	yes	--	--
	9/23/2009	22	3961.57	--	--	yes	--	--
	3/22/2010	22	3961.57	--	--	yes	--	--
HVW-10	4/17/2009	31	3963.214	27.24	3935.974	no	--	--
	5/11/2009	31	3963.214	27.89	3935.324	no	--	--
	7/24/2009	31	3963.214	26.65	3936.564	no	--	--
	9/23/2009	31	3963.214	29.45	3933.764	no	28.85	0.6
	3/22/2010	31	3963.214	29.56	3933.654	no	29.25	0.31

Notes:

TOC: Top of casing

ft: feet

ft amsl: feet above mean sea level

---: none present/none detected

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Figures

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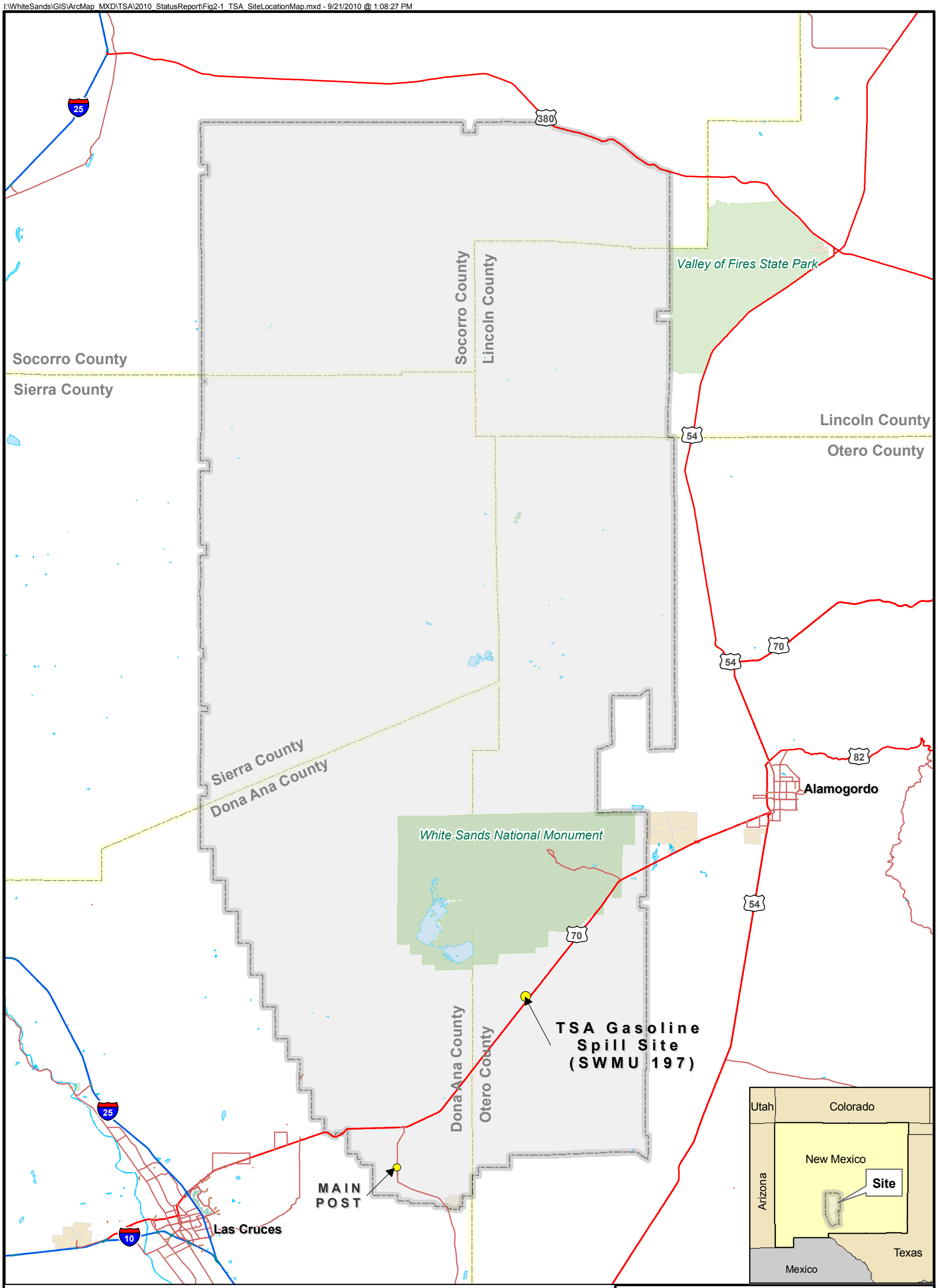

Legend

- County Boundary
- White Sands Missile Range Boundary
- Water Body
- National Park or Forest
- State Park or Forest
- Limited Access
- Highway
- Major Road
- Minor Road

N

0 7.5 15 Miles

WHITE SANDS MISSILE RANGE
NEW MEXICO

STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

SITE LOCATION MAP

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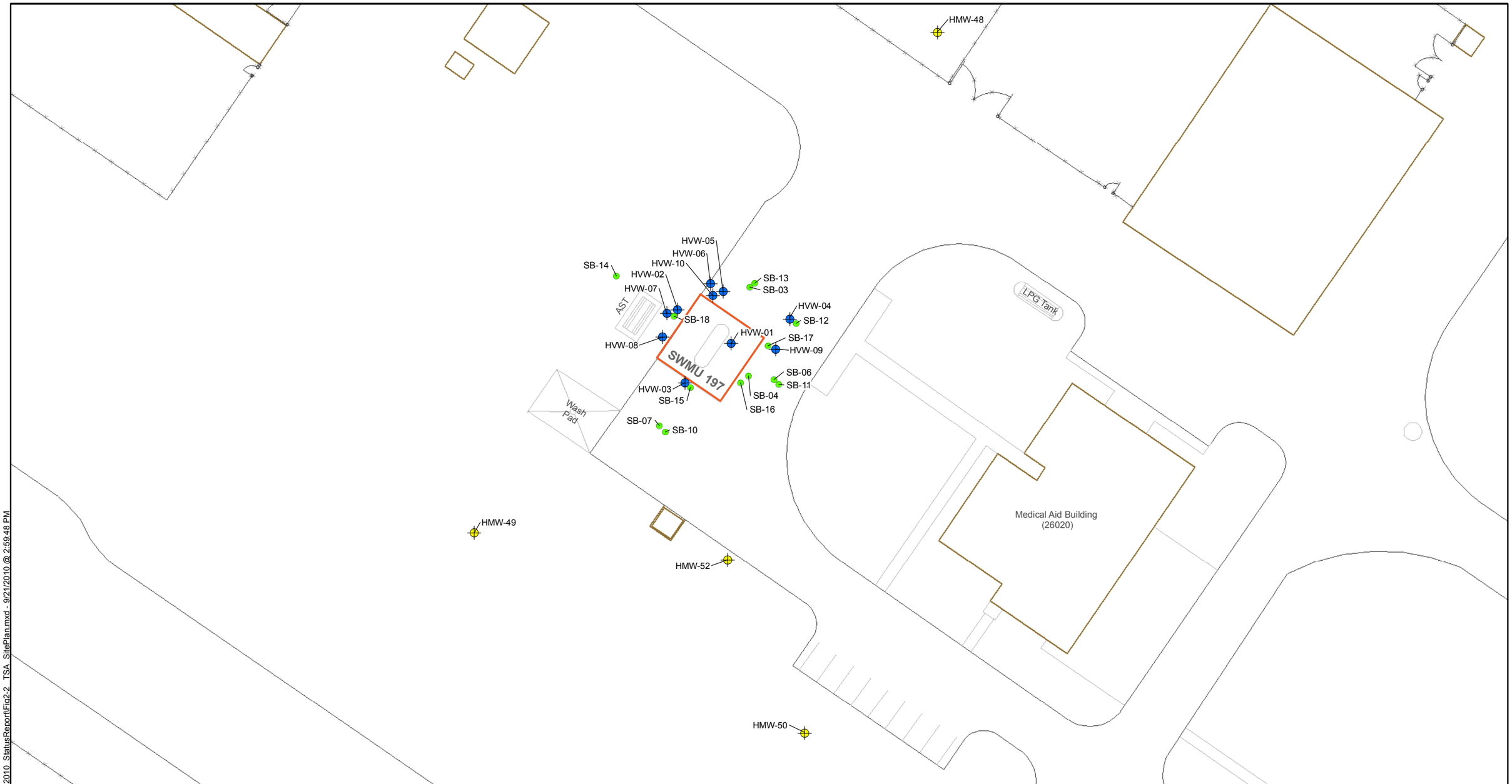
FIGURE
2-1



LEGEND

HVW-01	WELLS SCREENED IN VADOSE ZONE WATER (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)
HMW-49	WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)
SB-10	SOIL BORINGS (INSTALLED BY WTS JULY 2004 AND ARCADIS 2010)

SWMU 197

SITE FEATURES

BUILDING

FENCE

PAVED ROAD

SOURCE: BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

N

0 15 30 60 Feet

WHITE SANDS MISSILE RANGE
NEW MEXICO

STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

SITE PLAN

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FIGURE
2-2

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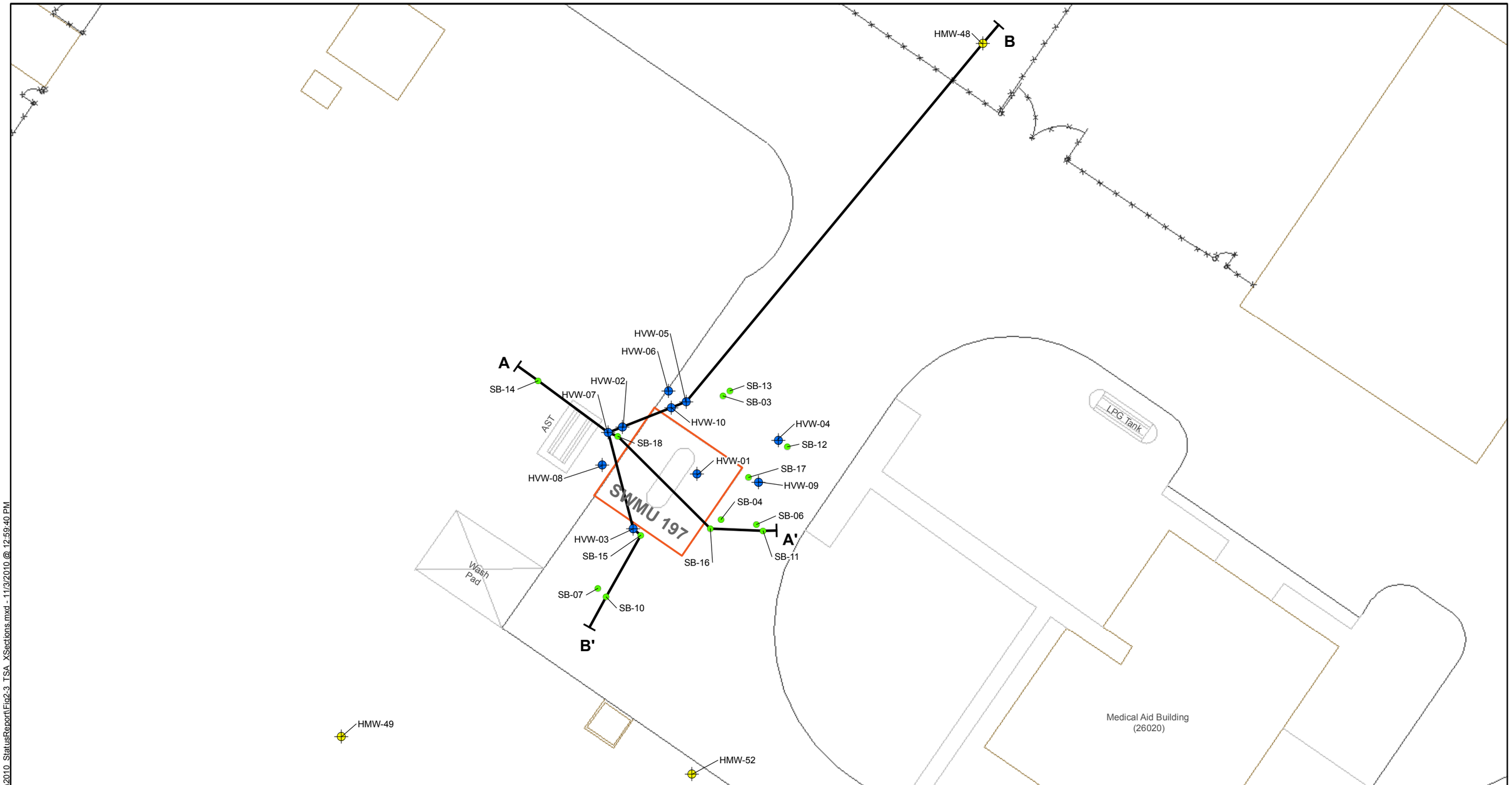

LEGEND

HVW-01 — WELLS SCREENED IN VADOSE ZONE WATER (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)

HMW-49 — WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)

SB-10 — SOIL BORINGS (INSTALLED BY WTS JULY 2004 AND ARCADIS 2010)

SWMU 197

SITE FEATURES

BUILDING

FENCE

PAVED ROAD

CROSS-SECTION LOCATION

SOURCE:
BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

N

0 15 30 60 Feet

WHITE SANDS MISSILE RANGE
NEW MEXICO

STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

CROSS-SECTION LOCATION MAP

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FIGURE
2-3

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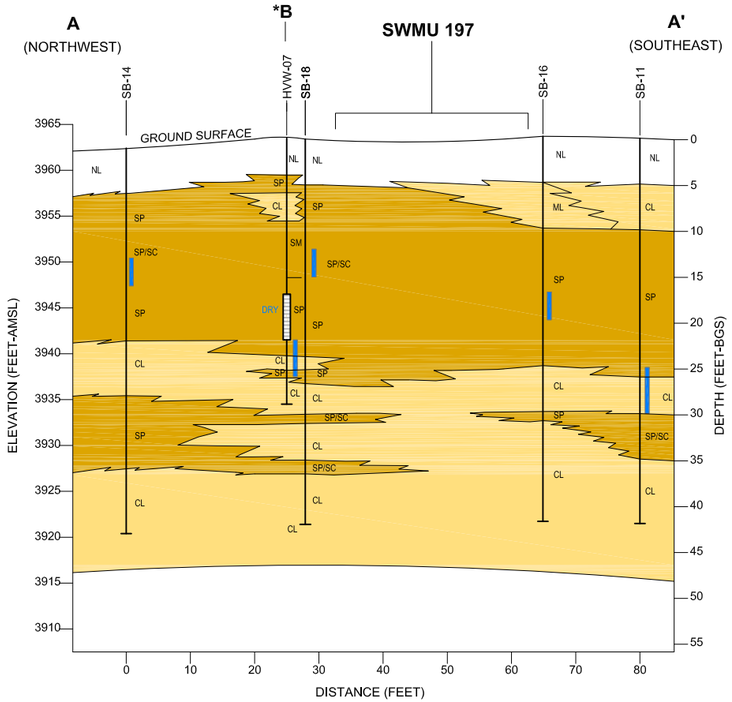
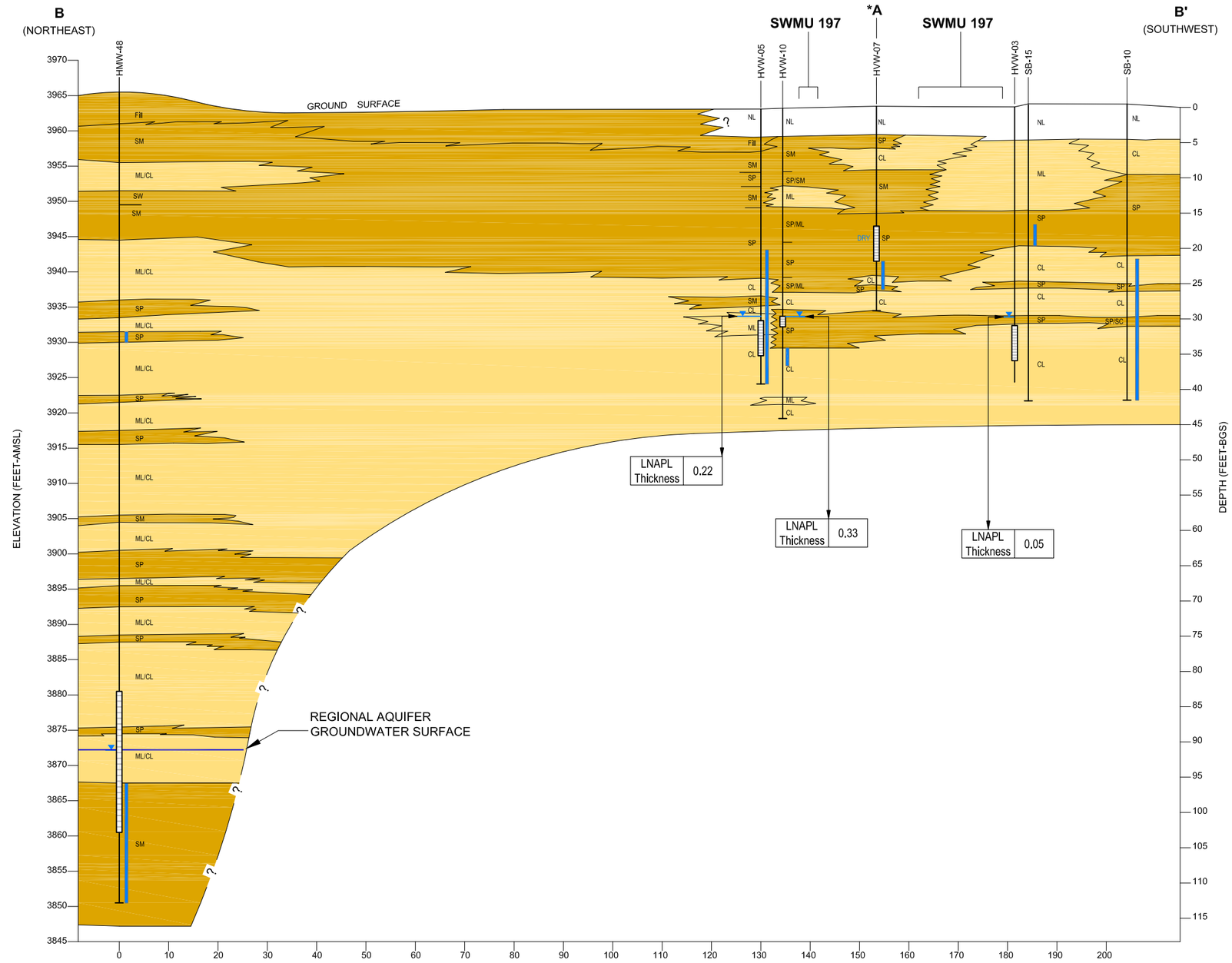
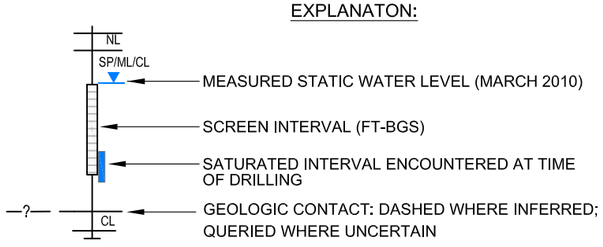




EXPLANATON:



INTERBEDDED ZONE: LOWER PERMEABILITY

INTERBEDDED ZONE: HIGHER PERMEABILITY

SM - SILTY SAND
SP - POORLY-GRADED SAND OR GRAVELLY SAND
SC - CLAYEY SAND
SW - WELL-GRADED SAND OR GRAVELLY SAND
ML - SILT
CL - GRAVELLY/SANDY/SILTY LEAN CLAY

AMSL = ABOVE MEAN SEA LEVEL
BGS = BELOW GROUND SURFACE
NL = NOT LOGGED
LNAPL = LIGHT NON-AQUEOUS PHASE LIQUID

* CROSS SECTION B-B' INTERSECTS CROSS-SECTION A-A' AT BOREHOLE HVW-07.

HVW-07 WAS DRY DURING THE MARCH 2010 WATER LEVEL MEASUREMENT EVENT.

LNAPL THICKNESSES FROM MARCH 22, 2010 ARE REPORTED IN FEET.

0 20 40
HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION =1.67X

WHITE SANDS MISSILE RANGE
NEW MEXICO

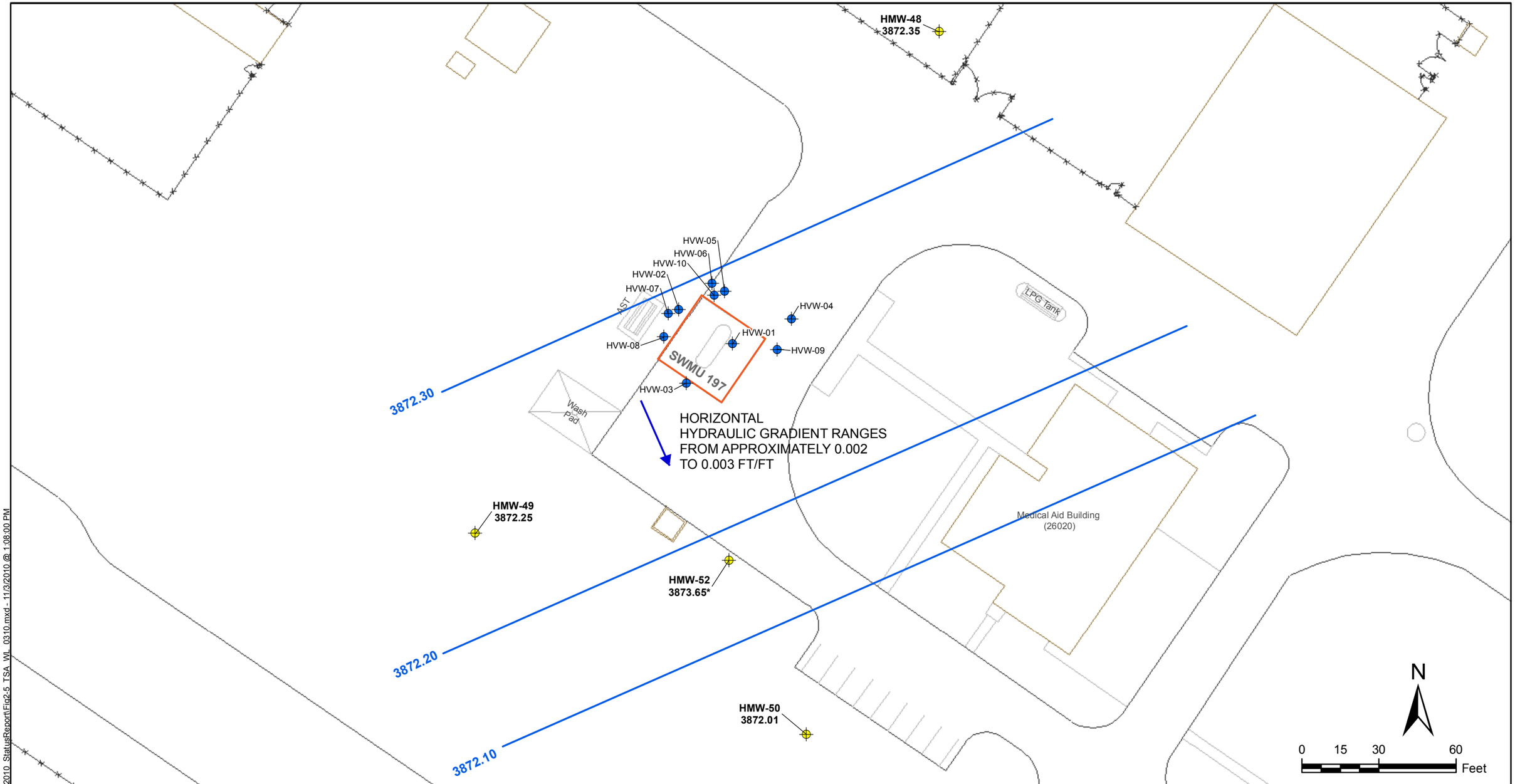
STATUS REPORT - TSA GASOLINE SPILL SITE (SWMU 197)

HYDROGEOLOGIC CROSS-SECTIONS A-A' AND B-B'

ARCADIS

FIGURE
2-4

CITY:(Read) DIV/GROUP:(Read) DB:(Read) LD:(Opt) PIC:(Opt) PM:(Read) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
K:\Misc. Tasks\WhiteSands\CAD_WSMR_CrossSections\WSMR_TSA_Hydrogeologic_XSections.dwg LAYOUT: MODEL SAVED: 9/27/2010 3:37 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS-DEN.CTB PLOTTED: 11/3/2010 1:05 PM BY: CHEN, JIE



LEGEND

- HVW-01 — WELLS SCREENED IN VADOSE ZONE WATER (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)
- HMW-49 — WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)
- 3868.92 — GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (FT AMSL)
- WATER LEVEL CONTOURS - MARCH 2010 - FT AMSL
- FLOW DIRECTION
- SWMU 197
- SITE FEATURES
- BUILDING
- FENCE
- PAVED ROAD

NOTES:
GROUNDWATER ELEVATIONS CALCULATED USING FEBRUARY 2010 SURVEY DATA.

*GROUNDWATER ELEVATION AT HMW-52 NOT USED FOR CONTOURING PURPOSES BECAUSE SCREEN INTERVAL IS NOT CONSISTENT WITH OTHER REGIONAL GROUNDWATER MONITORING WELLS.

HMW-52 SCREENED BETWEEN 88.5-93.5 FT BELOW GROUND SURFACE (BGS)
HMW-48, HMW-49, AND HMW-50 SCREENED BETWEEN 85 AND 105 FT BGS.

VERY LITTLE CHANGE IN POTENTIOMETRIC DEVIATION BETWEEN JANUARY, FEBRUARY, JULY 2009 AND MARCH 2010 MEASUREMENTS.

SOURCE:
BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

WHITE SANDS MISSILE RANGE
NEW MEXICO
STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

POTENTIOMETRIC SURFACE MAP FOR REGIONAL GROUNDWATER MARCH 2010

ARCADIS

FIGURE
2-5

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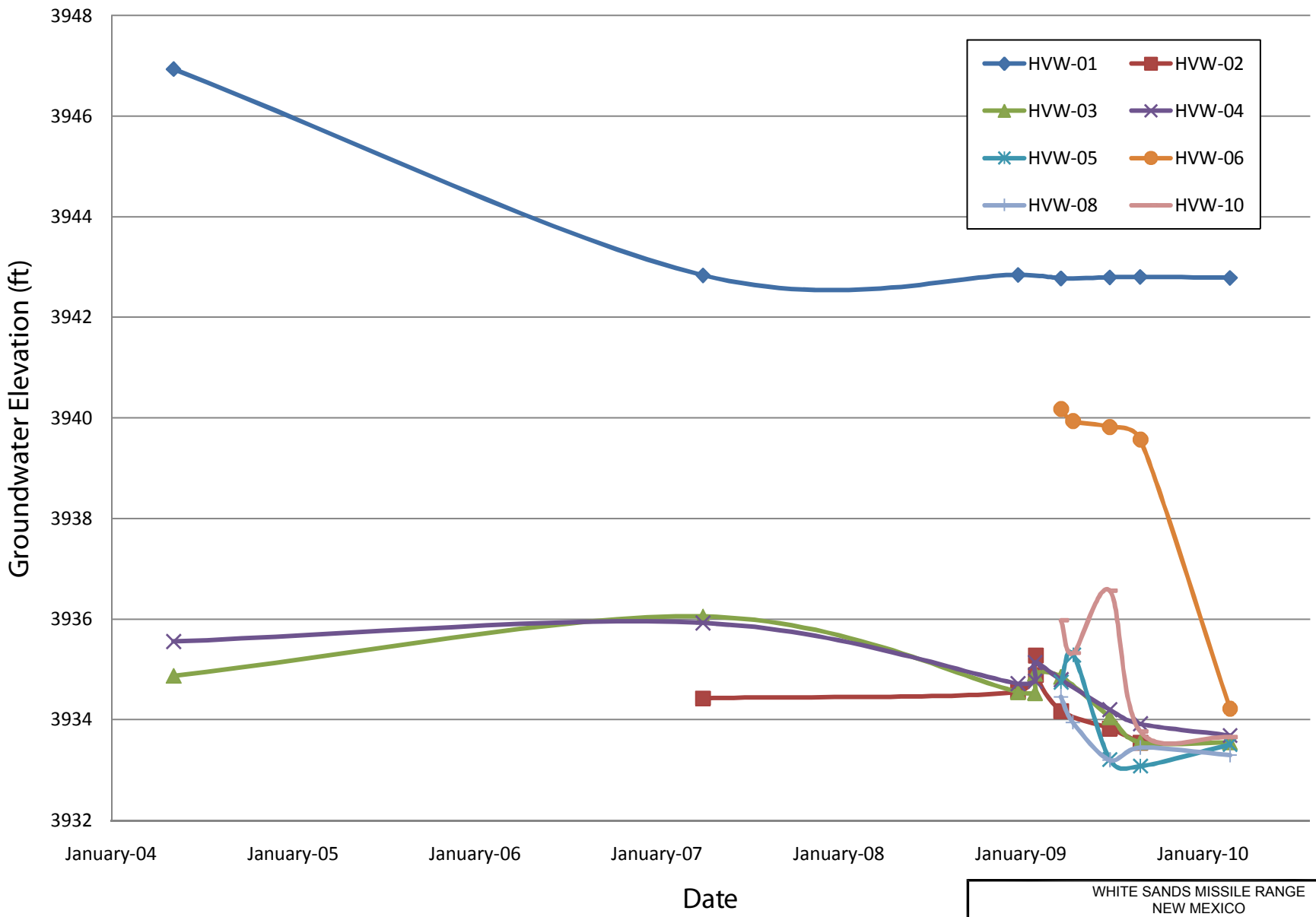


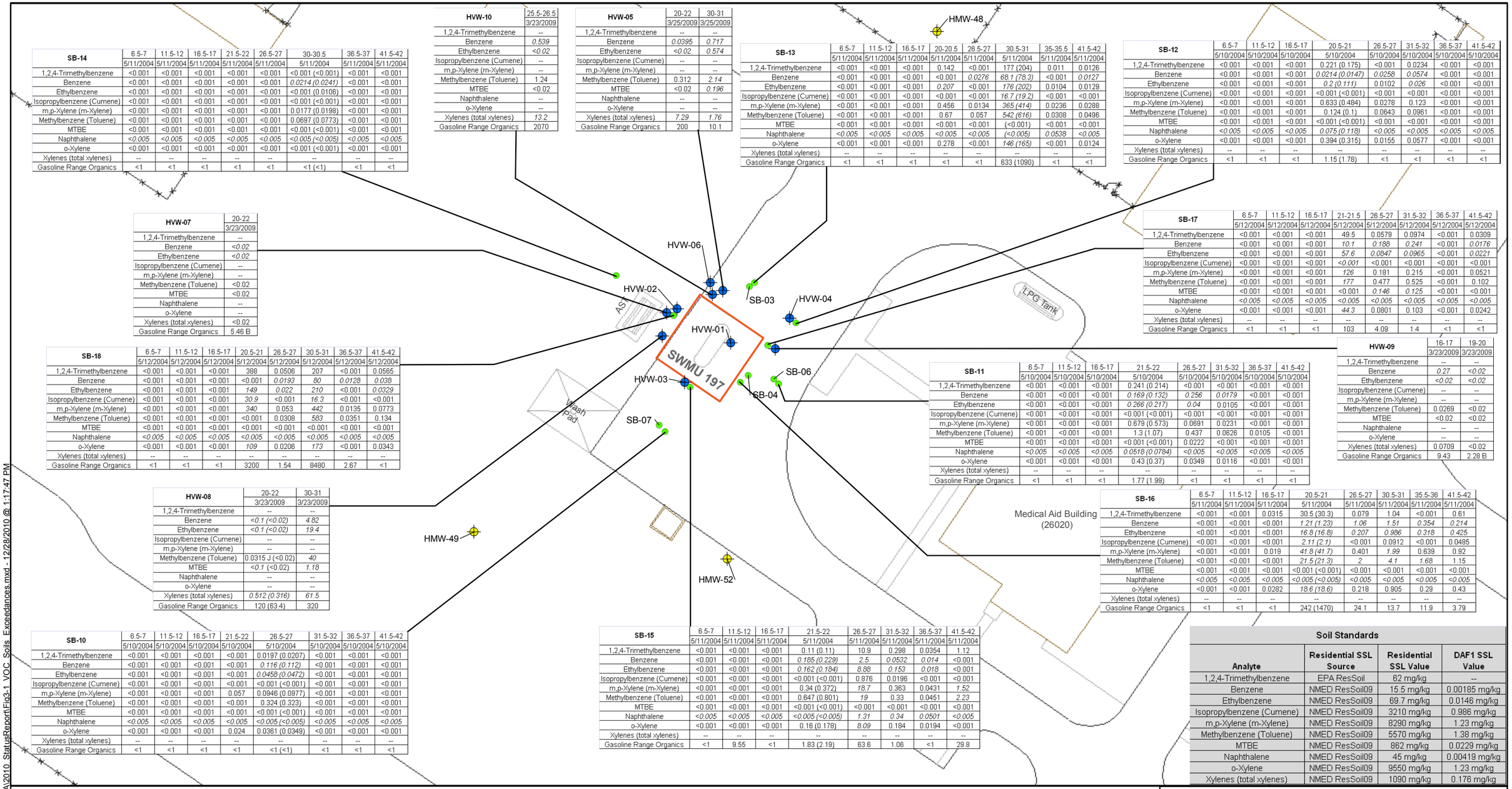
WHITE SANDS MISSILE RANGE
NEW MEXICO
STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

VADOSE ZONE GROUNDWATER ELEVATIONS

ARCADIS

FIGURE
2-6

I:\WhiteSands\GIS\ArcMap_MXD\TSA\2010_StatusReport\Fig2-6 Vadose Zone Groundwater Elevations.ai PREPARED BY: JC



SB-14	6.5-7	11.5-12	16.5-17	21.5-22	26.5-27	30-30.5	36.5-37	41.5-42
	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	*0.0214 (0.0241)*	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 (0.0106)	<0.001	<0.001
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	<0.001	<0.001	0.0177 (0.0198)	<0.001	<0.001
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	<0.001	<0.001	0.0697 (0.0773)	<0.001	<0.001
MTBE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005 (<0.005)*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	<1	<1	<1 (<1)	<1	<1

HVW-10	25.5-26.5
	3/23/2009
1,2,4-Trimethylbenzene	--
Benzene	*0.539*
Ethylbenzene	*<0.02*
Isopropylbenzene (Cumene)	--
m,p-Xylene (m-Xylene)	--
Methylbenzene (Toluene)	1.24
MTBE	<0.02
Naphthalene	--
o-Xylene	--
Xylenes (total xylenes)	*13.2*
Gasoline Range Organics	2070

HVW-05	20-22	30-31
	3/25/2009	3/25/2009
1,2,4-Trimethylbenzene	--	--
Benzene	*0.0395*	*0.717*
Ethylbenzene	*<0.02*	*0.574*
Isopropylbenzene (Cumene)	--	--
m,p-Xylene (m-Xylene)	--	--
Methylbenzene (Toluene)	0.312	*2.14*
MTBE	<0.02	*0.196*
Naphthalene	--	--
o-Xylene	--	--
Xylenes (total xylenes)	*7.29*	*1.76*
Gasoline Range Organics	200	10.1

SB-13	6.5-7	11.5-12	16.5-17	20-20.5	26.5-27	30.5-31	35-35.5	41.5-42
	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	0.142	<0.001	177 (204)	0.011	0.0126
Benzene	<0.001	<0.001	<0.001	<0.001	*0.0276*	*68.1 (78.3)*	<0.001	*0.0127*
Ethylbenzene	<0.001	<0.001	<0.001	*0.207*	<0.001	*176 (202)*	0.0104	0.0129
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001	<0.001	*16.7 (19.2)*	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	0.456	0.0134	*365 (414)*	0.0236	0.0288
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	0.67	0.057	*542 (616)*	0.0308	0.0496
MTBE	<0.001	<0.001	<0.001	<0.001	<0.001	(<0.001)	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*(<0.005)*	*0.0538*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	0.278	<0.001	*146 (165)*	<0.001	0.0124
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	<1	<1	833 (1090)	<1	<1

SB-12	6.5-7	11.5-12	16.5-17	20.5-21	26.5-27	31.5-32	36.5-37	41.5-42
	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	0.221 (0.175)	<0.001	0.0234	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	*0.0214 (0.0147)*	*0.0258*	*0.0574*	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	*0.2 (0.111)*	0.0102	*0.026*	<0.001	<0.001
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	0.633 (0.484)	0.0278	0.123	<0.001	<0.001
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	0.124 (0.1)	0.0843	0.0961	<0.001	<0.001
MTBE	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*0.075 (0.118)*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	0.394 (0.315)	0.0155	0.0577	<0.001	<0.001
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	1.15 (1.78)	<1	<1	<1	<1

HVW-07	20-22
	3/23/2009
1,2,4-Trimethylbenzene	--
Benzene	*<0.02*
Ethylbenzene	*<0.02*
Isopropylbenzene (Cumene)	--
m,p-Xylene (m-Xylene)	--
Methylbenzene (Toluene)	<0.02
MTBE	<0.02
Naphthalene	--
o-Xylene	--
Xylenes (total xylenes)	<0.02
Gasoline Range Organics	5.46 B

SB-17	6.5-7	11.5-12	16.5-17	21-21.5	26.5-27	31.5-32	36.5-37	41.5-42
	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	49.5	0.0579	0.0974	<0.001	0.0309
Benzene	<0.001	<0.001	<0.001	*10.1*	*0.188*	*0.241*	<0.001	*0.0176*
Ethylbenzene	<0.001	<0.001	<0.001	*57.6*	*0.0847*	*0.0965*	<0.001	*0.0221*
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	*<0.001*	<0.001	<0.001	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	*126*	0.181	0.215	<0.001	0.0521
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	*177*	0.477	0.525	<0.001	0.102
MTBE	<0.001	<0.001	<0.001	<0.001	*0.146*	*0.125*	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	*44.3*	0.0801	0.103	<0.001	0.0242
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	103	4.09	1.4	<1	<1

SB-18	6.5-7	11.5-12	16.5-17	20.5-21	26.5-27	30.5-31	36.5-37	41.5-42
	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004	5/12/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	388	0.0506	207	<0.001	0.0565
Benzene	<0.001	<0.001	<0.001	<0.001	*0.0193*	*80*	*0.0128*	*0.038*
Ethylbenzene	<0.001	<0.001	<0.001	*149*	*0.022*	*210*	<0.001	*0.0329*
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	*30.9*	<0.001	*16.3*	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	*340*	0.053	*442*	0.0135	0.0773
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	<0.001	0.0308	*583*	0.0351	0.134
MTBE	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	*109*	0.0206	*173*	<0.001	0.0343
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	3200	1.54	8480	2.67	<1

SB-11	6.5-7	11.5-12	16.5-17	21.5-22	26.5-27	31.5-32	36.5-37	41.5-42
	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	0.241 (0.214)	<0.001	<0.001	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	*0.169 (0.132)*	*0.256*	*0.0179*	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	*0.266 (0.217)*	*0.04*	0.0105	<0.001	<0.001
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	0.679 (0.573)	0.0691	0.0231	<0.001	<0.001
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	1.3 (1.07)	0.437	0.0626	0.0105	<0.001
MTBE	<0.001	<0.001	<0.001	<0.001 (<0.001)	0.0222	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*0.0518 (0.0784)*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	0.43 (0.37)	0.0349	0.0116	<0.001	<0.001
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	1.77 (1.99)	<1	<1	<1	<1

HVW-09	16-17	19-20
	3/23/2009	3/23/2009
1,2,4-Trimethylbenzene	--	--
Benzene	*0.27*	*<0.02*
Ethylbenzene	*<0.02*	*<0.02*
Isopropylbenzene (Cumene)	--	--
m,p-Xylene (m-Xylene)	--	--
Methylbenzene (Toluene)	0.0269	<0.02
MTBE	<0.02	<0.02
Naphthalene	--	--
o-Xylene	--	--
Xylenes (total xylenes)	0.0709	<0.02
Gasoline Range Organics	9.43	2.28 B

HVW-08	20-22	30-31
	3/23/2009	3/23/2009
1,2,4-Trimethylbenzene	--	--
Benzene	*<0.1 (<0.02)*	*4.82*
Ethylbenzene	*<0.1 (<0.02)*	*19.4*
Isopropylbenzene (Cumene)	--	--
m,p-Xylene (m-Xylene)	--	--
Methylbenzene (Toluene)	0.0315 J (<0.02)	*40*
MTBE	*<0.1* (<0.02)	*1.18*
Naphthalene	--	--
o-Xylene	--	--
Xylenes (total xylenes)	*0.512 (0.316)*	*61.5*
Gasoline Range Organics	120 (63.4)	320

SB-16	6.5-7	11.5-12	16.5-17	20.5-21	26.5-27	30.5-31	35.5-36	41.5-42
	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	0.0315	30.5 (30.3)	0.079	1.04	<0.001	0.61
Benzene	<0.001	<0.001	<0.001	*1.21 (1.23)*	*1.06*	*1.51*	*0.354*	*0.214*
Ethylbenzene	<0.001	<0.001	<0.001	*16.8 (16.8)*	*0.207*	*0.986*	*0.318*	*0.425*
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	*2.11 (2.1)*	<0.001	0.0912	<0.001	0.0485
m,p-Xylene (m-Xylene)	<0.001	<0.001	0.019	*41.8 (41.7)*	0.401	*1.99*	0.639	0.92
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	*21.5 (21.3)*	*2*	*4.1*	*1.68*	1.15
MTBE	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005 (<0.005)*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	0.0282	*18.6 (18.6)*	0.218	0.905	0.29	0.43
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	242 (1470)	24.1	13.7	11.9	3.79

SB-10	6.5-7	11.5-12	16.5-17	21.5-22	26.5-27	31.5-32	36.5-37	41.5-42
	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004	5/10/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	<0.001	0.0197 (0.0207)	<0.001	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	<0.001	*0.116 (0.112)*	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	*0.0458 (0.0472)*	<0.001	<0.001	<0.001
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	0.057	0.0946 (0.0977)	<0.001	<0.001	<0.001
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	<0.001	0.324 (0.323)	<0.001	<0.001	<0.001
MTBE	<0.001	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005 (<0.005)*	*<0.005*	*<0.005*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	0.024	0.0361 (0.0349)	<0.001	<0.001	<0.001
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	<1	<1	<1	<1 (<1)	<1	<1	<1

SB-15	6.5-7	11.5-12	16.5-17	21.5-22	26.5-27	31.5-32	36.5-37	41.5-42
	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004	5/11/2004
1,2,4-Trimethylbenzene	<0.001	<0.001	<0.001	0.11 (0.11)	10.9	0.298	0.0354	1.12
Benzene	<0.001	<0.001	<0.001	*0.185 (0.229)*	*2.5*	*0.0532*	*0.014*	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	*0.162 (0.184)*	*8.88*	*0.153*	*0.018*	<0.001
Isopropylbenzene (Cumene)	<0.001	<0.001	<0.001	<0.001 (<0.001)	0.876	0.0196	<0.001	<0.001
m,p-Xylene (m-Xylene)	<0.001	<0.001	<0.001	0.34 (0.372)	*18.7*	0.363	0.0431	*1.52*
Methylbenzene (Toluene)	<0.001	<0.001	<0.001	0.647 (0.801)	*19*	0.33	0.0451	*2.23*
MTBE	<0.001	<0.001	<0.001	<0.001 (<0.001)	<0.001	<0.001	<0.001	<0.001
Naphthalene	*<0.005*	*<0.005*	*<0.005*	*<0.005 (<0.005)*	*1.31*	*0.34*	*0.0501*	*<0.005*
o-Xylene	<0.001	<0.001	<0.001	0.16 (0.178)	*8.09*	0.184	0.0194	<0.001
Xylenes (total xylenes)	--	--	--	--	--	--	--	--
Gasoline Range Organics	<1	9.55	<1	1.83 (2.19)	63.6	1.06	<1	29.8

Soil Standards

Analyte	Residential SSL Source	Residential SSL Value	DAF1 SSL Value
1,2,4-Trimethylbenzene	EPA ResSoil	62 mg/kg	--
Benzene	NMED ResSoil09	15.5 mg/kg	0.00185 mg/kg
Ethylbenzene	NMED ResSoil09	69.7 mg/kg	0.0146 mg/kg
Isopropylbenzene (Cumene)	NMED ResSoil09	3210 mg/kg	0.986 mg/kg
m,p-Xylene (m-Xylene)	NMED ResSoil09	8290 mg/kg	1.23 mg/kg
Methylbenzene (Toluene)	NMED ResSoil09	5570 mg/kg	1.38 mg/kg
MTBE	NMED ResSoil09	862 mg/kg	0.0229 mg/kg
Naphthalene	NMED ResSoil09	45 mg/kg	0.00419 mg/kg
o-Xylene	NMED ResSoil09	9550 mg/kg	1.23 mg/kg
Xylenes (total xylenes)	NMED ResSoil09	1090 mg/kg	0.176 mg/kg

LEGEND

HVW-01 — WELLS SCREENED IN THE VADOSE ZONE (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)

HMW-49 — WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)

SB-10 — SOIL BORINGS (INSTALLED BY WTS JULY 2004 AND ARCADIS 2010)

SWMU 197 — PAVED ROAD — BUILDING

FENCE — SITE FEATURES

NOTES:
1. THE SOIL SAMPLE DEPTH MEASURED IN FEET BELOW GROUND SURFACE FOR EACH LOCATION IS SHOWN IN THE TOP LINE OF THE DATA BOX.
2. BOLD FONT AND YELLOW HIGHLIGHT INDICATES THE REPORTED RESULT EXCEEDS THE PUBLISHED RESIDENTIAL SSLs. THE SSLs APPLY ONLY TO THE UPPER 10 FEET OF SOIL.
3. ITALICS INDICATES THAT THE REPORTED RESULT EXCEEDS THE NMED DAF 1 SCREENING VALUE.
4. ALL SOIL RESULTS ARE REPORTED IN mg/kg (MILLIGRAM PER KILOGRAM).
5. BRACKETS INDICATE THAT THE RESULT SHOWN IS FROM A DUPLICATE FIELD SAMPLE.
6. ONLY THOSE ANALYTES WITH AT LEAST ONE DETECTED EXCEEDANCE OF A STANDARD ARE SHOWN.
7. DATA COLLECTED PRIOR TO 2009 WERE COLLECTED BY OTHERS AND WERE PROVIDED TO ARCADIS BY WHITE SANDS MISSILE RANGE.

SOURCE: BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

USEPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NMED: NEW MEXICO ENVIRONMENT DEPARTMENT
DAF: DILUTION ATTENUATION FACTOR
SSL: SOIL SCREENING LEVEL
VOCs: VOLATILE ORGANIC COMPOUNDS
MTBE: METHYL TERT BUTYL ETHER
B: ANALYTE WAS ALSO DETECTED IN THE ASSOCIATED METHOD BLANK
J: INDICATES AN ESTIMATED VALUE
<: SAMPLE RESULT WAS NOT DETECTED AT LABORATORY REPORTING LIMIT SHOWN
--: ANALYTE WAS NOT ANALYZED OR STANDARD DOES NOT EXIST

N

0 15 30 60 Feet

WHITE SANDS MISSILE RANGE
NEW MEXICO
STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

EXCEEDANCES OF SOIL STANDARDS VOCs

ARCADIS

FIGURE 3-1

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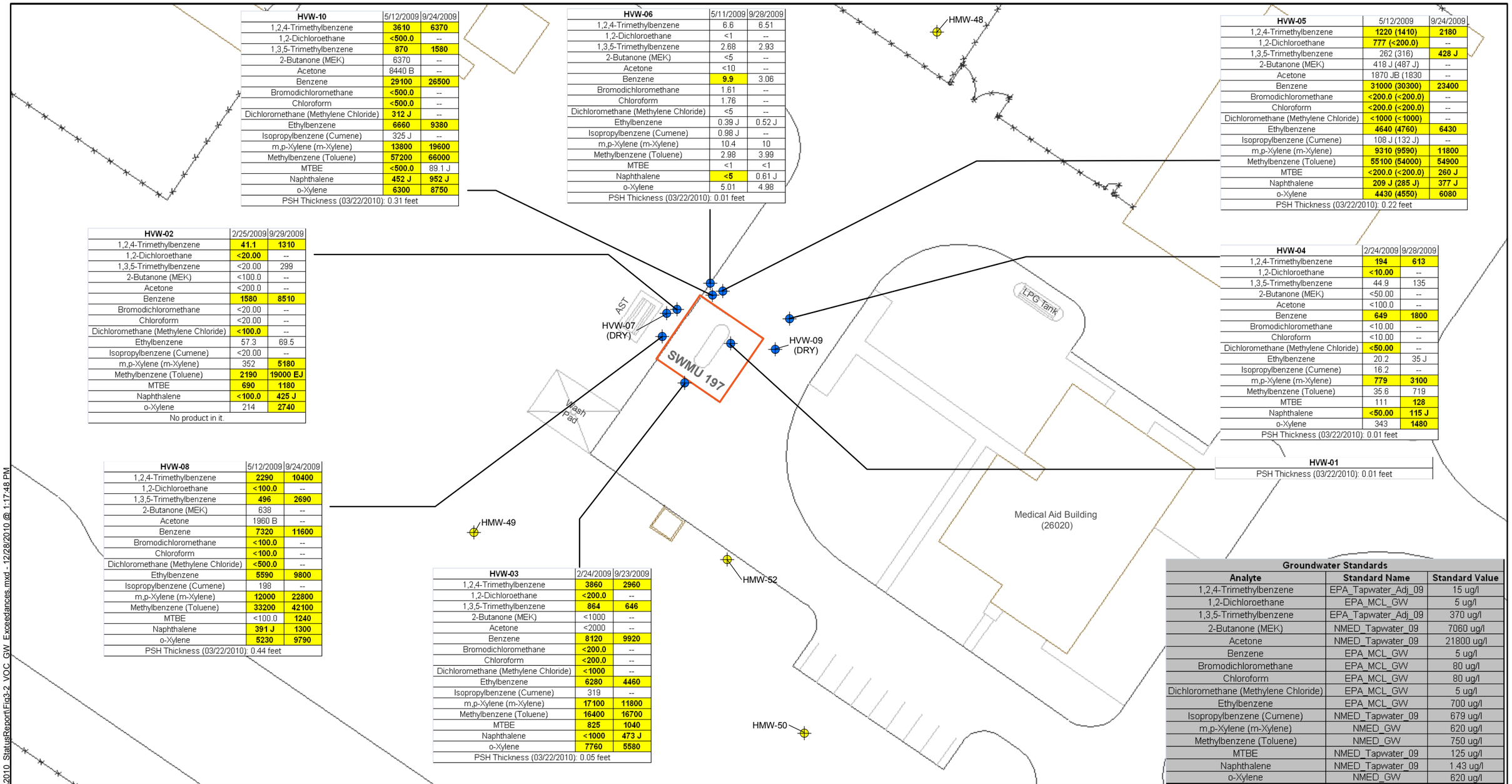

HVW-10	5/12/2009	9/24/2009
1,2,4-Trimethylbenzene	3610	6370
1,2-Dichloroethane	<500.0	--
1,3,5-Trimethylbenzene	870	1580
2-Butanone (MEK)	6370	--
Acetone	8440 B	--
Benzene	29100	26500
Bromodichloromethane	<500.0	--
Chloroform	<500.0	--
Dichloromethane (Methylene Chloride)	312 J	--
Ethylbenzene	6660	9380
Isopropylbenzene (Cumene)	325 J	--
m,p-Xylene (m-Xylene)	13800	19600
Methylbenzene (Toluene)	57200	66000
MTBE	<500.0	89.1 J
Naphthalene	452 J	952 J
o-Xylene	6300	8750
PSH Thickness (03/22/2010): 0.31 feet		

HVW-06	5/11/2009	9/28/2009
1,2,4-Trimethylbenzene	6.6	6.51
1,2-Dichloroethane	<1	--
1,3,5-Trimethylbenzene	2.68	2.93
2-Butanone (MEK)	<5	--
Acetone	<10	--
Benzene	9.9	3.06
Bromodichloromethane	1.61	--
Chloroform	1.76	--
Dichloromethane (Methylene Chloride)	<5	--
Ethylbenzene	0.39 J	0.52 J
Isopropylbenzene (Cumene)	0.98 J	--
m,p-Xylene (m-Xylene)	10.4	10
Methylbenzene (Toluene)	2.98	3.99
MTBE	<1	<1
Naphthalene	<5	0.61 J
o-Xylene	5.01	4.98
PSH Thickness (03/22/2010): 0.01 feet		

HVW-05	5/12/2009	9/24/2009
1,2,4-Trimethylbenzene	1220 (1410)	2180
1,2-Dichloroethane	777 (<200.0)	--
1,3,5-Trimethylbenzene	262 (316)	428 J
2-Butanone (MEK)	418 J (487 J)	--
Acetone	1870 JB (1830	--
Benzene	31000 (30300)	23400
Bromodichloromethane	<200.0 (<200.0)	--
Chloroform	<200.0 (<200.0)	--
Dichloromethane (Methylene Chloride)	<1000 (<1000)	--
Ethylbenzene	4640 (4760)	6430
Isopropylbenzene (Cumene)	108 J (132 J)	--
m,p-Xylene (m-Xylene)	9310 (9590)	11800
Methylbenzene (Toluene)	55100 (54000)	54900
MTBE	<200.0 (<200.0)	260 J
Naphthalene	209 J (285 J)	377 J
o-Xylene	4430 (4550)	6080
PSH Thickness (03/22/2010): 0.22 feet		

HVW-02	2/25/2009	9/29/2009
1,2,4-Trimethylbenzene	41.1	1310
1,2-Dichloroethane	<20.00	--
1,3,5-Trimethylbenzene	<20.00	299
2-Butanone (MEK)	<100.0	--
Acetone	<200.0	--
Benzene	1580	8510
Bromodichloromethane	<20.00	--
Chloroform	<20.00	--
Dichloromethane (Methylene Chloride)	<100.0	--
Ethylbenzene	57.3	69.5
Isopropylbenzene (Cumene)	<20.00	--
m,p-Xylene (m-Xylene)	352	5180
Methylbenzene (Toluene)	2190	19000 EJ
MTBE	690	1180
Naphthalene	<100.0	425 J
o-Xylene	214	2740
No product in it.		

HVW-04	2/24/2009	9/28/2009
1,2,4-Trimethylbenzene	194	613
1,2-Dichloroethane	<10.00	--
1,3,5-Trimethylbenzene	44.9	135
2-Butanone (MEK)	<50.00	--
Acetone	<100.0	--
Benzene	649	1800
Bromodichloromethane	<10.00	--
Chloroform	<10.00	--
Dichloromethane (Methylene Chloride)	<50.00	--
Ethylbenzene	20.2	35 J
Isopropylbenzene (Cumene)	16.2	--
m,p-Xylene (m-Xylene)	779	3100
Methylbenzene (Toluene)	35.6	719
MTBE	111	128
Naphthalene	<50.00	115 J
o-Xylene	343	1480
PSH Thickness (03/22/2010): 0.01 feet		

HVW-01
PSH Thickness (03/22/2010): 0.01 feet

HVW-08	5/12/2009	9/24/2009
1,2,4-Trimethylbenzene	2290	10400
1,2-Dichloroethane	<100.0	--
1,3,5-Trimethylbenzene	496	2690
2-Butanone (MEK)	638	--
Acetone	1960 B	--
Benzene	7320	11600
Bromodichloromethane	<100.0	--
Chloroform	<100.0	--
Dichloromethane (Methylene Chloride)	<500.0	--
Ethylbenzene	5590	9800
Isopropylbenzene (Cumene)	198	--
m,p-Xylene (m-Xylene)	12000	22800
Methylbenzene (Toluene)	33200	42100
MTBE	<100.0	1240
Naphthalene	391 J	1300
o-Xylene	5230	9790
PSH Thickness (03/22/2010): 0.44 feet		

HVW-03	2/24/2009	9/23/2009
1,2,4-Trimethylbenzene	3860	2960
1,2-Dichloroethane	<200.0	--
1,3,5-Trimethylbenzene	864	646
2-Butanone (MEK)	<1000	--
Acetone	<2000	--
Benzene	8120	9920
Bromodichloromethane	<200.0	--
Chloroform	<200.0	--
Dichloromethane (Methylene Chloride)	<1000	--
Ethylbenzene	6280	4460
Isopropylbenzene (Cumene)	319	--
m,p-Xylene (m-Xylene)	17100	11800
Methylbenzene (Toluene)	16400	16700
MTBE	825	1040
Naphthalene	<1000	473 J
o-Xylene	7760	5580
PSH Thickness (03/22/2010): 0.05 feet		

Groundwater Standards		
Analyte	Standard Name	Standard Value
1,2,4-Trimethylbenzene	EPA_Tapwater_Adj_09	15 ug/l
1,2-Dichloroethane	EPA_MCL_GW	5 ug/l
1,3,5-Trimethylbenzene	EPA_Tapwater_Adj_09	370 ug/l
2-Butanone (MEK)	NMED_Tapwater_09	7060 ug/l
Acetone	NMED_Tapwater_09	21800 ug/l
Benzene	EPA_MCL_GW	5 ug/l
Bromodichloromethane	EPA_MCL_GW	80 ug/l
Chloroform	EPA_MCL_GW	80 ug/l
Dichloromethane (Methylene Chloride)	EPA_MCL_GW	5 ug/l
Ethylbenzene	EPA_MCL_GW	700 ug/l
Isopropylbenzene (Cumene)	NMED_Tapwater_09	679 ug/l
m,p-Xylene (m-Xylene)	NMED_GW	620 ug/l
Methylbenzene (Toluene)	NMED_GW	750 ug/l
MTBE	NMED_Tapwater_09	125 ug/l
Naphthalene	NMED_Tapwater_09	1.43 ug/l
o-Xylene	NMED_GW	620 ug/l

LEGEND

HVW-01 — WELLS SCREENED IN THE VADOSE ZONE (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)

HMW-49 — WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)

SWMU 197

PAVED ROAD

FENCE

BUILDING

SITE FEATURES

NOTES:
1. DATA PRESENTED ARE GROUNDWATER SAMPLES COLLECTED BY ARCADIS IN 2009.
2. BOLD FONT AND YELLOW HIGHLIGHTS INDICATE EITHER THE REPORTED RESULT EXCEEDS THE SCREENING CRITERIA OR THE DETECTION LIMIT EXCEEDS THE SCREENING CRITERIA.
3. SCREENING CRITERIA CONSIST OF THE LOWER VALUE BETWEEN THE USEPA MCL (2009) AND NMED WQCC STANDARD (2004). IF NO MCL OR WQCC STANDARD WAS AVAILABLE FOR AN ANALYTE, THE NMED OR EPA TAPWATER SCREENING LEVEL (2009) WAS USED, IF AVAILABLE.
4. ALL GROUNDWATER RESULTS ARE REPORTED IN µg/L (MICROGRAMS PER LITER).
5. BRACKETS INDICATE THAT THE RESULT SHOWN IS FROM A DUPLICATE FIELD SAMPLE.
6. ONLY THOSE ANALYTES WITH AT LEAST ONE DETECTED EXCEEDANCE OF A STANDARD ARE SHOWN.
7. HVW-01 HAD INSUFFICIENT VOLUME OF WATER FOR SAMPLING.

SOURCE: BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

USEPA: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
MCL: MAXIMUM CONTAMINANT LEVEL
NMED: NEW MEXICO ENVIRONMENT DEPARTMENT
WQCC: WATER QUALITY CONTROL COMMISSION
EPA_MCL_GW: USEPA MAXIMUM CONTAMINANT LEVEL, AS DEFINED IN 40 CODE OF FEDERAL REGULATIONS, PART 141.
EPA_TAPWATER_ADJ_09: USEPA RESIDENTIAL SCREENING LEVEL FROM USEPA REGIONAL SCREENING LEVELS (HTTP://WWW.EPA.GOV/REGSHWMD/RISK/HUMAN/RB-CONCENTRATION_TABLE/INDEX.HTM). 2009.
NMED_TAPWATER_09: NMED TAPWATER SCREENING LEVEL. NMED. 2009. TECHNICAL BACKGROUND DOCUMENT FOR DEVELOPMENT OF SOIL SCREENING LEVELS, REVISION 5.0. NMED HAZARDOUS WASTE BUREAU AND GROUND. WATER QUALITY BUREAU, VOLUNTARY REMEDIATION PROGRAM. AUGUST.
NMED_GW: NMED WATER QUALITY CONTROL COMMISSION (WQCC) STANDARD. 1995. PART OF THE NEW MEXICO ADMINISTRATIVE CODE (NMAC). TITLE 20, CHAPTER 6, PART 2 (ENVIRONMENTAL PROTECTION WATER QUALITY GROUND AND SURFACE WATER PROTECTION: 20.6.2.3103, STANDARDS FOR GROUND WATER OF 10,000 mg/L TDS CONCENTRATION OR LESS). (WQCC ADOPTED STANDARDS FOR NMED GROUNDWATER QUALITY BUREAU (GWQB) EXCEPT FOR MTBE AND FREE PRODUCT).
E: EXCEED CALIBRATION RANGE OF GC/MS INSTRUMENT
J: SAMPLE RESULT WAS ESTIMATED
--: SAMPLE WAS NOT TESTED AND/OR NO DATA WERE AVAILABLE
VOCs: VOLATILE ORGANIC COMPOUNDS
MTBE: METHYL TERT BUTYL ETHER
TDS: TOTAL DISSOLVED SOLIDS
PSH: PHASE-SEPARATED HYDROCARBON
mg/L: MILLIGRAM PER LITER

N

0 15 30 60 Feet

WHITE SANDS MISSILE RANGE
NEW MEXICO
STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

EXCEEDANCES OF GROUNDWATER STANDARDS IN VADOSE ZONE WATER VOCs

ARCADIS

FIGURE
3-2

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ARCADIS

Appendices

Appendix A

Field Methodologies

APPENDIX A – FIELD METHODOLOGIES

1. Well Installations and Associated Supplemental Sampling

As stated previously, six shallow monitoring wells (HVW-05 through HVW-10) were installed in saturated soils at the TSA in March 2009 in preparation for implementation of the approved CMI. Soil samples were collected from saturated soils for characterization purposes during the well installation. Water samples were collected from the newly installed shallow wells in May 2009. LNAPL was encountered and was also sampled. The newly installed wells, existing wells, and historical soil borings were surveyed by a licensed surveyor. With the exception of two dry shallow wells, all shallow wells and one regional groundwater monitoring well (HMW-52) were sampled in September 2009. These activities are described herein, and the sampling results are discussed in Section 5 of the report.

1.1 Utility Clearance

Utility clearance was performed prior to the start of soil boring and well installation activities in March 2009. As-built utility drawings (Tresco, 2007) were reviewed prior to initiating the field work. Field personnel marked the proposed boring locations at the Site and WSMR personnel then inspected and approved the locations for drilling on March 17, 2009. Documentation of the utility clearance is provided in Appendix B.

1.2 Soil Sample Collection and Field Screening Procedures

The six soil borings were advanced using a mobile drilling rig equipped with hollow stem augers between March 23 and 25, 2009. The drilling and sample collection procedures were supervised by a qualified geologist.

The lead auger was used to drill through the pavement at each location. A hand auger was then used to remove the upper five feet of soil at each location to verify that no utility lines were located in the vicinity of the borings.

Soil samples were collected by advancing a three-inch diameter, five-ft long core barrel ahead of the hollow stem augers. Soil cores were collected continuously to the total depth drilled at each location. The soil cores were examined visually and described according to the Unified Soil Classification System, American Society for Testing and Materials (ASTM) Standard D 2487-83 (ASTM, 1985). The sampling tools used, depth of the soil core, amount of soil recovered, soil classification, and other visual observations were recorded on a lithologic log for each sampling location. The boring logs are provided for each boring in Appendix C.

During drilling, soils were screened for VOCs using a PID. The PID was calibrated daily, at a minimum. Aliquots of the soil selected from each five-foot soil interval were placed into new glass sample jars and covered with aluminum foil. The jars were placed into the cab of the truck and allowed to equilibrate for approximately 10 minutes. The foil was then pierced with the probe portion of the PID. The PID measurements are included on the boring logs in Appendix C.

Soil samples were collected from soils in the vadose zone during drilling activities. A total of eight primary soil samples were collected: HVW-05 (20 – 22'), HVW-05 (30-31') HVW-07 (20-22'), HVW-08 (20-22') HVW-08 (30-31'), HVW-09 (16 – 17'), HVW-09 (19 – 20') and HVW-10 (25.5 – 26.5'). One field duplicate was collected from HVW-08 (20-22') (designated HVW-108-(20.0-22.0') for analysis of the same constituents analyzed in the parent sample. A trip blank, provided by the laboratory, was included in the

cooler containing soil samples submitted to the laboratory for VOC analysis and was analyzed for the same VOCs analyzed in the soil samples.

1.3 Well Installation Activities

Wells were constructed in each of the six boreholes and screened across the saturated, imbedded soils. The six wells were originally constructed to serve three different functions: Wells HVW-05 and HVW-06 were intended to serve as vadose zone monitoring wells; Wells HVW-07, HVW-08 and HVW-09 were intended to serve as vapor extraction wells, and Well HVW-10 was intended to serve as an air sparge well. The construction of the wells varied, depending on their intended function. Wells were constructed of either 2-inch or 4-inch diameter Schedule 40 polyvinyl chloride (PVC), and stainless steel wire-wrapped screens with 0.010 or 0.020-inch slots. With the exception of Well HVW-10, which was to be the air sparging well, wells were constructed with five-foot long screen sections. Well HVW-10 was constructed with a 1.5-foot long screen. A filter pack consisting of 10/20 graded slilca sand was placed in the annulus between the sidewall of the boring and the well pipe. The sand extended from the bottom of the well to approximately two feet above the top of the screen. Two to five feet of bentonite chips were placed above the sand pack and hydrated. A slurry consisting of neat Portland cement and potable water was placed above the bentonite seal and was generally three feet thick. A second layer of bentonite chips was placed above the cement slurry to fill the remaining annular space and was hydrated. Surface completions consisted of flush-mount 8-inch (for the 2-inch wells) and 12-inch (for the 4-inch wells) diameter manholes set into concrete pads that were slightly sloped away from the well to prevent rain water from entering the manholes. Well construction details are provided on Table 2-2 and on the logs in Appendix C.

1.4 Fluid Levels Measurements and Groundwater Sampling Activities

An electronic interface probe was used to measure fluid levels and total depths in the wells prior to sampling. Wells HVW-07 and HVW-09 were dry during both sampling events, and HVW-01 had insufficient water (0.64 ft) for sampling during the September 2009 sampling event. The depth to water in the vadose zone ranged from 23.14 to 28.80 ft in May 2009 and 20.65 to 29.92 ft in September 2009. Depth to water in the Regional Aquifer wells in September 2009 ranged from 89.45 to 93.45 ft. Measurable LNAPL was encountered in HVW-08 in May 2009 and in HVW-03, HVW-05, and HVW-08 in September 2009.

The newly installed monitoring wells (HVW-05, HVW-06, HVW-08 and HVW-10) were sampled on May 11 and 12, 2009. Vadose zone wells (HVW-02 through HVW-06, HVW-08 and HVW-10) and the down-gradient regional groundwater well (HMW-52) were sampled between September 23 and 29, 2009. Newly installed wells HVW-07 and HVW-09 were not sampled because they were dry during both of the sampling events.

Sampling was conducted using a low-flow sampling technique consistent with United States Environmental Protection Agency (USEPA) guidance (USEPA, 1996). Each well was purged and sampled using dedicated disposable tubing, a stainless steel peristaltic pump equipped with disposable polyethylene bladders, a flow-through cell, a multi-meter field parameter probe (e.g., YSI™ meter), and a turbidity meter. The flow was adjusted to a rate that resulted in minimal (< 0.1 meter [m]) well drawdown. Well purging was considered complete once the field parameters stabilized for three consecutive measurements. Stabilization was considered +/-3% for temperature and conductivity, +/-10% for turbidity, oxidation reduction potential (ORP), and dissolved oxygen (DO), and +/-0.2 units for pH. To ensure accurate field readings, the multi-meter field parameter probe and turbidity meter were carefully calibrated according to the manufacturers' instructions prior to use each day.

Groundwater samples were collected from each monitoring well using the same pump and new dedicated tubing that were used to purge the well. After the field parameters stabilized, the flow-through cell and multi-meter were disconnected from the pump prior to filling the sampling containers. Pre-sterilized sampling containers provided by the laboratory were then filled directly from the dedicated pump discharge tubing. During sample collection for VOC analysis, the pump was operated at a rate less than 0.25 liters per minute (L/min) to minimize agitation and aeration. A disposable bailer was used to collect product samples during both sampling events, prior to the groundwater purging and sampling activities.

Field quality assurance/quality control (QA/QC) samples collected during the May 2009 and September 2009 groundwater sampling events included one field duplicate, one rinsate sample, and one trip blank. Additional sample volume was collected from HVW-06 during the May 2009 sampling event for use as a matrix spike/matrix spike duplicate (MS/MSD). During the May 2009 sampling event, the duplicate sample was collected from HVW-05, and during the September 2009 sampling event, the duplicate sample was collected from HMW-52. In both cases, the duplicate samples were analyzed for the same parameters analyzed in the parent sample. The rinsate samples were analyzed for the same parameters analyzed in the groundwater samples. The trip blanks, provided by the laboratory, were placed in the coolers with groundwater samples collected for VOC analysis and analyzed for the same VOCs analyzed in the groundwater samples.

1.5 Product Sampling

Product samples were collected from Well HVW-08 in May and from Wells HVW-05 and HVW-08 in November 2009. The samples were collected to evaluate the nature and source of the product. After water and product levels were measured in the wells, and prior to groundwater purging and sampling activities, product samples were collected from each well using disposable, dedicated bailers. The sample aliquots were poured into laboratory-supplied sample containers and shipped to SPL in Houston, Texas as described in Section 1.6.

1.6 Sample Handling and Shipping

Samples were handled with new disposable gloves that were replaced prior to use with each sample. After each sample was placed into the appropriate container and labeled, it was placed into a cooler containing packaged ice. The ice was double-bagged using plastic zipper bags. Each sample was recorded on a chain-of-custody form with the requested analyses for that sample. The chain-of-custody form was sealed inside the cooler prior to shipment to the laboratory. Shipping containers were sealed with a custody seal and shipped to the laboratory via overnight courier.

The groundwater samples were submitted under proper chain-of-custody to Trace Analytical, a laboratory accredited by the National Environmental Laboratory Accreditation Conference (NELAC), located in Lubbock, Texas. The product samples were submitted under proper chain-of-custody to SPL in Houston, Texas. None of the custody seals had been broken upon receipt at the laboratory.

1.7 Analytical Testing

Soil samples collected in March 2009 from the borings for HVW-05 and HVW-07 through HVW-10 were analyzed for BTEX and MTBE using USEPA Method 8021B and total petroleum hydrocarbons-Gasoline Range Organics (TPH-GRO) using USEPA Method 8015B.

Groundwater samples collected in May 2009 from the newly installed vadose zone wells were analyzed for VOCs using USEPA Method 8260B and TPH-GRO using USEPA Method 8015B, and TDS using

Standard Method (SM) 2540C. Groundwater samples collected from the vadose zone wells and regional well HMW-52 in September 2009 were analyzed for TPH-GRO using USEPA Method 8015B and the following VOCs using USEPA Method 8260B: MTBE, benzene, toluene, ethylbenzene, m,p-xylene, o-xylene, n-propylbenzene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, and naphthalene.

The product sample collected from Well HVW-08 in May 2009 was analyzed for the following:

- Surface tension at 75 ºF using ASTM Method ASTM-D-1331-A
- American Petroleum Institute (API) Gravity at 60 ºF using ASTM-D-4052
- Specific Gravity at 60/60 ºF using ASTM-D-4052
- Density at 60 ºF using ASTM-D-4052
- Viscosity at 104 ºF using ASTM-D-445

The product samples collected from Wells HVW-05 and HVW-08 in November 2009 were analyzed for the following:

- Interfacial tension at 70 ºF using ASTM-D-1331-B
- API Gravity at 70 ºF using ASTM-D-4052 and 80 ºF using ASTM-D-4052(2)
- Specific Gravity at 70/70 ºF using ASTM-D-4052 and 80/80 ºF using ASTM-D-4052(2)
- Density at 70 ºF using ASTM-D-4052 and 80 ºF using ASTM-D-4052(2)
- Viscosity at 70 ºF ASTM-D-445 and at 80 ºF ASTM-D-445-OT

1.8 Data Validation

The primary data quality objectives (DQOs) for this investigation were to provide representative data usable to characterize site conditions, delineate the nature and extent of affected media (if present), and to support corrective action decisions as appropriate. Analytical data reports were reviewed and evaluated in accordance with Appendix 5 of the Permit and in accordance with applicable USEPA SW-846 method requirements as described in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (USEPA, October 1999), and USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (USEPA, July 2002). The analytical data were validated using Level II QA/QC criteria. A copy of the analytical data reports and the data validation summary reports are provided in Appendix D. The data validation results indicated that all the data are usable and meet the project's data quality objectives (DQOs).

1.9 Decontamination Procedures

All down-hole drilling equipment was decontaminated prior to use at each boring location by steam-pressure cleaning. Reusable field equipment, including hand augers, core barrels, knives and other non-disposable utensils was decontaminated prior to use with each sample. Decontamination of the sampling equipment included washing the equipment with a solution of potable water and

laboratory-grade detergent, scrubbing with a brush, rinsing with potable water, rinsing with distilled water, placing the equipment on a plastic or foil-lined surface and allowing it to air dry.

1.10 Waste Handling

Miscellaneous trash (drinking water bottles, shipping boxes, paper trash, etc.) that did not come into contact with soil or decontamination equipment was containerized and disposed of as solid waste.

Investigation derived waste (IDW) generated during the well installation and soil and groundwater sampling events included soil cuttings, decontamination fluids, disposable gloves, plastic sheeting, aluminum foil, and other materials that came into contact with either the soil or decontamination equipment and liquids. All wastes were collected at the time of generation and placed in the proper containers. Each container was labeled with the date, contents, and point of contact information and delivered to the WSMR Waste Management Center (WMC) for storage pending waste characterization and disposal. Soil cuttings and decontamination fluids generated during soil sampling were characterized as non-hazardous wastes based on the analytical data. Purge water, recovered product and personal protective equipment (PPE) generated during groundwater sampling was characterized as hazardous waste. The waste profiles and supporting analytical data for the IDW generated during the 2009 supplemental sampling events are provided in Appendix I. All non-hazardous wastes and hazardous wastes were disposed of off-site by WSMR.

1.11 Survey

The vadose zone wells, regional groundwater wells, and historical soil boring locations were surveyed on February 11, 2010. The survey was conducted by a licensed land surveyor and included fixed reference points (such as building and fence corners, edges of pavement) within the TSA Area. Data were referenced to the State Plane coordinate system North American Datum established in 1983 (NAD 83). The survey included elevations of the top of casing and the manhole cover for each well. Location data were measured to the nearest 0.001 meter and elevation data were measured to the nearest 0.001 foot. A copy of the survey data is provided in Appendix E.

2. Aquifer Testing

The geologic setting for the generalized conceptual model for the TSA Area is understood to be a complex system of high-permeability alluvial/fluvial channel form features surrounded by lower permeability deposits. In the vadose zone, saturated conditions may occur locally in higher permeable materials, but there is generally low spatial hydraulic connectivity between high permeability channel form features, resulting in complex water levels, flow paths and contaminant distribution. Additional hydraulic testing was conducted on April 27 and April 30, 2009 to further understand the hydrogeologic conditions at the site and provide additional characterization information to support evaluation of remedial objectives and alternatives. This section documents the methods and results of slug tests performed at the TSA Area.

2.1 Slug Testing - TSA Wells

Slug tests were performed on all four Regional Aquifer monitoring wells at the TSA (HMW-48, HMW-49, HMW-50, and HMW-52) and at two shallow monitoring wells (HVW-04 and HVW-05). Slug testing provides hydraulic information in the immediate vicinity of a well and is performed by the instantaneous addition or removal of hydraulic head; typically this is done by adding or extracting a known volume, or slug, of water at the tested well. The slug, in effect, increases the hydraulic head at the test well. The

hydraulic properties in the immediate vicinity of the well will affect when the well returns to static equilibrium conditions. Details of the slug tests are described in this section.

2.1.1 TSA Regional Aquifer Well Slug Tests

Prior to testing, water levels were measured in regional groundwater monitoring wells HMW-48, HMW-49, HMW-50 and HMW-52; groundwater was encountered between 89 and 90 ft bgs. Pressure transducers were deployed prior to the testing conducted at each well. Measurements of temperature and pressure were recorded during the slug testing. Pressure transducers at the tested well were set to record data at one-second intervals. While testing at one well was being conducted, pressure transducers at the other wells were collecting background data every one minute.

Planned tests consisted of the addition of an initial two-gallon distilled water slug and, after the test well recovered to static equilibrium, the addition of a four-gallon distilled water slug to each of the four regional wells. Three of the wells (HMW-48, HMW-49, and HMW-50) recovered relatively quickly to the two-gallon slug test and, therefore, the four-gallon and slug test was conducted at these wells. HMW-52 did not recover quickly from the two-gallon slug test and, therefore, no four-gallon test was conducted at that well. None of the other wells monitored responded to slug testing at the individual test wells.

Pressure data collected from the slug testing was imported into Excel for reduction and then into the data analysis program AQTESOLV™. AQTESOLV™ uses a set of solutions to groundwater flow and curve matching to provide estimates of hydraulic properties. As stated above, slug testing only provides information in the vicinity of the tested well. AQTESOLV™ data analysis sheets for these wells are provided in Appendix F.

Slug testing data imported into AQTESOLV™ were analyzed using the Hvorslev confined solution to instantaneous changes in hydraulic head in partially penetration wells (Hvorslev, 1951). Assumptions of this method are that the aquifer is infinite, homogenous, and uniform in thickness, and that flow is steady. This method uses straight line matching to observed water level displacement. Estimates of hydraulic conductivity (K) at HMW-48 and HMW-49 were approximately 2.8 and 1.7 ft/day, respectively. The estimate of K at HMW-52 was considerably less at 0.08 ft/day. These three data sets fit the Hvorslev solution well. However, HMW-50 did not fit the Hvorslev solution well and a second solution was used, as described in the following paragraph.

When HMW-50 was analyzed using the Hvorslev straight line solution method, there was a significant deviation from the straight line solution after approximately 30 minutes. Estimates of the early time data produced a K estimate of 1.2 ft/day; a straight line K estimate of data beyond 30 minutes was approximately 4.2 ft/day. The data were then analyzed using the Kansas Geological Survey (KGS) solution with well skin (Hyder, et. al, 1994). A well skin is the disturbance in the outer boring annulus during drilling and well installation, often referred to as smearing. Smearing of clay or silts can reduce the effective hydraulic conductivity (K_e) in the well vicinity. The estimated K value for HMW-50 using this method is approximately 2.3 ft/day. The KGS model data sheets for HMW-50 are provided in Appendix F.

2.1.2 TSA Vadose Zone Well Slug Tests

Slug testing, similar to the slug testing described above, was performed, at shallow monitoring wells HVW-04 and HVW-05. HVW-04 is a four-inch diameter well and HVW-05 is a two-inch diameter well and, therefore, a four-gallon slug test and a two-gallon slug test, respectively, were conducted. Pressure transducers were deployed in these test wells and observation wells HVW-06, HVW-08 and HVW-10;

HVW-9 was dry during the field activities. One observation well, HVW-10 located approximately five feet away from HVW-05, responded slightly to slug testing at HVW-05, indicating limited hydraulic connectivity.

Data from these slug testing events were also imported into Excel for data reduction and then into AQTESOLV™ for analysis. Based on boring log information, the KGS confined model solution was selected for analysis of the slug test data. The KGS model has similar assumptions as those presented above, except that the water level response is overdamped and flow is unsteady. The KGS model is similar to the Cooper-Bredehoeft-Papadopulous (CBP) solution (Cooper, et.al., 1967), except that it allows for simultaneous analysis of multiple wells (such as the HVW-5 slug test with an observed response at HVW-10).

Estimates of K are made by a curve matching process similar to the analysis presented in the previous section. The AQTESOLV™ data analysis sheets are presented in Appendix F. The estimated K value for HVW-4 is 15.4 ft/day. Utilizing the CBP solution, the estimated K value for HVW-5 is 3.1 ft/day, assuming that the average aquifer thickness is approximately 4.2 feet, based on the boring logs for HVW-5 and HVW-10.

2.2 Product Recovery Testing

Product recovery testing was performed in November 2009, January 2010, and March 2010 to assess the recoverability of LNAPL present in some of the TSA wells (vadose zone wells) screened in the saturated imbedded soils.

2.2.1 November 2009 Baildown Tests

On November 16, 2009, prior to conducting the baildown tests, water and product level measurements were taken using an interface probe at all vadose zone wells, and water level measurements were taken at all Regional Aquifer wells using a water level indicator. Measurable product was encountered in five vadose zone wells, as follows (product thicknesses noted in parentheses): HVW-03 (0.17 ft), HVW-04 (0.01 ft), HVW-05 (0.43 ft), HVW-08 (0.62 ft), and HVW-10 (0.44 ft). HVW-05, HVW-08, and HVW-10 were selected for product baildown tests. Monitoring well water and LNAPL levels were allowed to equilibrate with atmospheric pressure in all three test wells. Fluid levels were gauged periodically for five to ten minutes to monitor changes in head to ensure that levels had equilibrated.

Testing was initiated at one well by bailing all NAPL from the well. A bailer was slowly lowered into the well until it was just below the LNAPL-water interface. The LNAPL was evacuated by gently bailing, minimizing water production. Once the LNAPL was fully removed (or to the extent practicable), that time was marked as the starting time for the recovery test.

LNAPL and water level measurements were taken at one-minute intervals at the beginning of the test and the measurement intervals were adjusted thereafter based on site-specific conditions (such as rate of recovery). Fluid levels were measured to the nearest hundredth of a foot with the interface probe and recorded with the corresponding time reading in minutes and seconds. The product test measurements are provided in Appendix G.

Once the rate of recovery had slowed, the test was initiated at the next well. Periodic measurements continued to be taken until water and product levels stabilized. The field team returned to the site on November 17, 2009 to measure water and product levels after 17 to 19 hours had elapsed.

Care was taken to avoid splashing and to avoid lowering the probe too far beyond the LNAPL-water interface when introducing the oil-water interface indicator in order to avoid altering the fluid-level measurements. Care was also taken to avoid the introduction of surface soil or other material into the monitoring well by staging downhole equipment on a clean and dry working surface between measurements.

The interface probe was decontaminated with an Alconox® and water wash followed by a double distilled water rinse. Rinse water, PPE, used bailers, and other waste materials generated were placed in labeled containers. The wastes associated with the product recovery tests are characteristically hazardous waste for benzene; liquids may also be characteristically hazardous for ignitability. The wastes were transported to the WSMR WMC, and the WMC arranged for final disposition of the wastes.

2.2.2 January 2010 Baildown Tests

Additional baildown tests were conducted between January 19 and 25, 2010 to further evaluate the recoverability of the LNAPL. With the exception of the frequency of the product removal and measurements, the same general procedures implemented in November 2009 were followed for the January 2010 tests.

After removing the well caps and allowing the fluid levels to equilibrate inside the wells, water and product level measurements were measured using an interface probe in all vadose zone wells and using a water level indicator in all Regional Aquifer wells on January 19th, at the beginning of the test, and again on the 25th at end of the test (Appendix G).

On January 19th, 20th, and the 21st, water and NAPL product levels were measured only in the wells containing product, HVW-03, HVW-05, HVW-08 and HVW-10. After initial the initial measurements were made each day, product was removed from each well having product using a dedicated disposable bailer. Product was removed from all four wells on January 19th and 20th. Only HVW-03 and HVW 08 had measurable product on the third day of the test (January 21st), and only HVW 08 had measurable product on January 25th, the final day of the test. Product was removed from HVW-03 and HVW-08 on January 21st and from HVW-08 on January 25th. On each day of the test, after initial measurements were made and after the product was removed from each well, two additional measurements were taken at each of the four wells at approximately every 1.5 to 2 hours to gauge how quickly the product recovered. Over the three days, a total of 607, 550, 1,424 and 1,000 mL were bailed from HVW-03, HVW-05, HVW-08 and HVW-10, respectively. At each location, the recoverable amount of product decreased with each event.

Based on the limited recoverable quantities observed during the November 2009 and January 2010 product recovery tests, it was determined that a passive recovery system would likely be the most appropriate technology for product recovery in the TSA vadose zone wells.

2.2.3 March 2010 –Passive Product Recovery Pilot Test

Between March 22 and April 12, 2010, product recovery and monitoring activities were continued. Based on the low recoverability of product demonstrated during the November 2009 and January 2010 product recovery tests, a pilot test using a passive product recovery system was implemented at Wells HVW-03, HVW-05, and HVW-08. HVW-10 also had recoverable product, but because HVW-10 is a one-inch diameter well, product was hand bailed from this well during the test. The passive product recovery system selected for the test was the GeoSorb System, consisting of a stainless steel screened/meshed cage assembly containing an absorbent sock, which was installed in each of the three test wells.

2.2.3.1 Test Schedule

The product recovery test was implemented according to the schedule described in this section. The test methodologies are described in Section 2.2.3.2.

First Weekly Visit – March 22, 2010

- Water and product levels were measured in all 10 vadose zone wells and recorded on the field work sheets (Appendix G).

- GeoSorb units were installed in Wells HVW-03, HVW-05, and HVW-08, and product was hand-bailed from Well HVW-10. The volume of product removed from HVW-10 was recorded on the field work sheets (Appendix G).

Second Weekly Visit – March 29, 2010

- The absorbent socks were removed from Wells HVW-03, HVW-05, and HVW-08 and the height of product on the removed socks was recorded on the field work sheets in Appendix G. The volume of product was to be estimated based on the height of product; however, due to the small amount of product and the light color of the product, it was difficult to discern the product thickness on the wetted portion of the sock and volumes recovered could not be estimated confidently.

- The product in HVW-10 was hand-bailed, and the volume of product recovered was measured and recorded on the field work sheets.

- The used socks were placed in a properly labeled container, which was stored in the Satellite Accumulation Point (SAP) established at the TSA.

- New GeoSorb units were placed in Wells HVW-03, HVW-05, and HVW-08. Prior to placement in the wells, the socks were weighed in order to evaluate if the volume of product recovered could be estimated based on weight.

Third Weekly Visit – April 5, 2010

- The absorbent socks were removed from Wells HVW-03, HVW-05, and HVW-08. The socks were weighed and the fluid was then squeezed from each sock into a graduated cylinder. The estimated volume of product recovered was based on the amount of product measured in the recovered fluid.

- The product in HVW-10 was hand-bailed, and the volume of product recovered was measured and recorded in Appendix G.

- The used socks were placed in the properly labeled container, which was stored in the SAP established at the TSA.

- New absorbent socks were NOT placed back into the wells. Instead, the wells were left to equilibrate so that static conditions could be measured during the next visit.

Fourth Weekly Visit – April 12, 2010

The field team returned to the site to take a final round of water and product level measurements in all 10 vadose zone monitoring wells. The water and product levels were recorded on the field work sheets in Appendix G.

2.2.3.2 Methodologies

The field methods implemented by the field crew for water and product level measurements, GeoSorb System Installation and Removal, manual product removal from HVW-10, equipment decontamination, and IDW management are described herein.

Water and Product Level Measurements

The following procedures were implemented to measure water levels and product levels during the product recovery test:

- The covers were removed from all monitoring wells and all wells were allowed to equilibrate to atmospheric pressure for up to 30 minutes.

- An interface probe was used to perform the water and product measurements in the wells known to have product and a water level meter was used to measure water levels in the wells without product. Depth to water and product thickness (if present) were recorded on the field data sheets in Appendix G.

- In wells with product, the interface probe was lowered below the water/free phase interface. The depth to water and depth to product were measured on the way down and on the way back up. Any product on the probe was wiped off with oil absorbent pads after each measurement and the probe was rinsed with water. The measurements made on the way down were determined to be most accurate. These measurements were recorded on the field data sheets in Appendix G. All rinse water and absorbent pads were placed in properly labeled containers, which were placed in the SAP established at the TSA.

2.2.3.2.1 GeoSorb System Installation

A four-inch diameter GeoSorb unit was installed in Well HVW-3 while two-inch diameter GeoSorb units were deployed in Wells HVW-05 and HVW-08. Installation and monitoring details were recorded on the field data sheets in Appendix G. The Geosorb units were installed during the first weekly visit, and monitored and changed out during the second weekly visit. Prior to re-installing the GeoSorb units during the second week, the socks were weighed. New socks were not placed in the wells during the third weekly event so that wells could equilibrate and allow for accurate water and product level measurements during the fourth weekly event. The following procedures detail the methods for installation of the GeoSorb unit in each of the three wells:

- Clean plastic sheeting and several oil absorbent pads were placed on the ground next to each test well prior to installing the GeoSorb System.

- The upper end of the GeoSorb screen assembly was placed, at a minimum, 0.5 ft above the measured product level. Once the depth of placement was determined, a fixed point at the well cap was selected for securing the cable or cord of the GeoSorb System. Prior to installation into the well during the second week, the socks were weighed.

- The sock was inserted into the stainless steel assembly and the safety cable or cord was affixed to the hanger on the screen assembly. The other end of the cable or cord was securely tied off on the well cap or casing.

- The GeoSorb System was slowly lowered to the desired depth and secured. The depth, time and date of installation were recorded on the field data sheets in Appendix G.

2.2.3.2.2 GeoSorb System Removal

The following procedures were implemented during removal of the GeoSorb System:

- Prior to removal of the GeoSorb System, clean plastic sheeting and several oil absorbent pads were placed on the ground next to the well.

- The GeoSorb System was withdrawn slowly from the well and placed on clean plastic sheeting.

- The sock was carefully withdrawn from the stainless steel assembly. During the second weekly event, if product was present in the sock, the height of product was measured and recorded on the field data sheets. As stated previously, due to the light color of the product, the difficulty in measuring the height of the product on the sock, and the small volume of product recovered during the first week of the test, the socks were weighed after removal during the third weekly event in an effort to better estimate the volume of product recovered. To provide an additional estimate of the volume of product recovered, the liquid was then squeezed from the sock into a graduated cylinder.

- The used sock was placed into the proper labeled waste collection container, which was stored in the SAP established at the TSA.

- A new sock was placed into the stainless steel assembly, which was then placed in each well in accordance with the procedures in Section 2.2.3.2.1. However, as noted above, no new socks were placed in the wells during the third weekly event.

2.2.3.2.3 GeoSorb System Installation

Since the casing diameter for HVW-10 is one inch, the product in HVW-10 was hand bailed during the product recovery test. Prior to bailing the product from HVW-10, the water and product levels were measured and recorded on the data sheets in Appendix G. A bailer was used to remove as much product as practically possible, minimizing the amount of water collected. The volume of product was measured by pouring it into a graduated cylinder.

2.2.4 Decontamination of Equipment and IDW Management

The following procedures were followed to decontaminate the equipment and manage IDW generated during the product recovery test:

- Between each use, the interface probe was decontaminated with an Alconox® and water solution, distilled water rinse, alcohol rinse, and another distilled water rinse. All decontamination fluids were placed in the container with the groundwater and recovered product.

- All recovered product and groundwater collected during the test were placed into an appropriate container for proper waste management. Groundwater containing product and product recovered

from these wells is typically characteristically hazardous for ignitability and/or benzene. Therefore, all hazardous waste storage and management was conducted in accordance with hazardous waste regulatory requirements and the WSMR WMC's requirements.

- All used absorbent socks containing oil, the oil absorbent pads used for decontamination, and personal protective equipment (PPE) were placed in a separate container than non-hazardous plastic sheeting, and general trash. The absorbent socks containing oil and the used oil absorbent pads may be hazardous waste (i.e., characteristically hazardous for benzene). The plastic sheeting would only be expected to be hazardous if there was a significant spill of product onto the plastic.

- All segregated non-hazardous wastes were placed in the appropriate container and disposed of properly.

A temporary SAP was established for the hazardous wastes generated at the TSA site during the product recovery and monitoring. Drums are stored in a locking drum cabinet and weekly inspections are performed. When the waste containers are full, waste characterization sampling will be conducted and a waste profile will be developed for the WSMR WMC, who will manage the waste and arrange for final disposition off site.

ARCADIS

Appendix B

Utility Clearance, Mar 2009

MEMORANDUM FOR UTILITIES SERVICES SECTIONS

SUBJECT: UTILITY CLEARANCES

Site Location: HELSTF TSA Gas Station

Work Order No._____

1. Request that individuals locating existing utility lines at the designated site acknowledge identification of the utility by signing and dating next to the appropriate utility section listed below. See attached figure for planned locations of subsurface activities.

DEPARTMENT	Signature (Names Printed)	
GAS (3-2397)	_____ ( )	Date: _____
WATER / SEWER (3-1917)	_____ ( )	Date: _____
ELECTRICAL DEPT. (3-2851)	_____ ( )	Date: _____
COMMO. SECTION (3-2162)	DAVID A. MORRIS ( )	Date: 3/17/09
EOD SECTION (3-2035)	_____ ( )	Date: _____

2. Above clearance does not relive the contractor of responsibility to use proper excavation methods and due care working around the approximate locations of utility services.

Requested by:

Brad T. Davis Date: 3-17-09
(Bradley T. Davis)
Zia Engineering and Environmental, LLC

Technical Inspector:

_____ Date: _____
( )

MEMORANDUM FOR UTILITIES SERVICES SECTIONS

SUBJECT: UTILITY CLEARANCES

Site Location: HELSTF TSA

Work Order No._____

1. Request that individuals locating existing utility lines at the designated site acknowledge identification of the utility by signing and dating next to the appropriate utility section listed below. See attached figure for planned locations of subsurface activities.

DEPARTMENT	Signature (Names Printed)	
GAS (3-2397)	Robert Gonzales ( )	Date: 3-16-09
WATER / SEWER (3-1917)	" ( )	Date: "
ELECTRICAL DEPT. (3-2851)	" ( )	Date: "
COMMO. SECTION (3-2162)	( )	Date:
EOD SECTION (3-2035)	( )	Date:

2. Above clearance does not relive the contractor of responsibility to use proper excavation methods and due care working around the approximate locations of utility services.

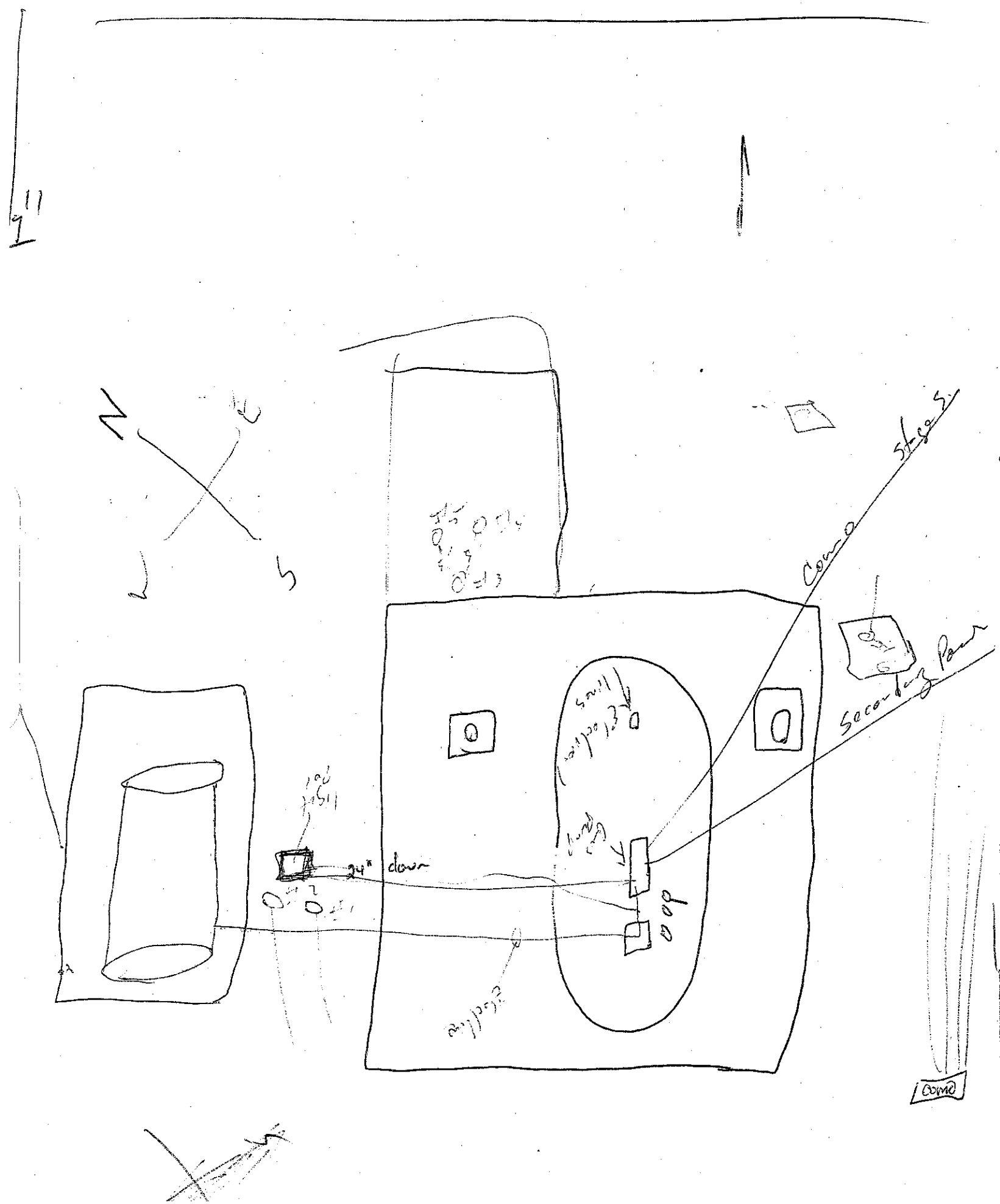
Requested by:

Date: 3-10-09

(Bradley T. Davis)
Zia Engineering and Environmental, LLC

Technical Inspector:

_____ Date: _____
( )


N
E
W
S
Como
Stage
Secondary Power
24" down
Como

Appendix C

Boring and Well Construction Logs

WELL LOG

WELL NUMBER: **HVW-05**

WELL DEPTH: **39 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: WSMR HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/24/09
DATE COMPLETED: 3/25/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3963.13 ft.
REFERENCE: St. Plane, NAD 83
NORTHING: 588620.5911
EASTING: 1624485.516

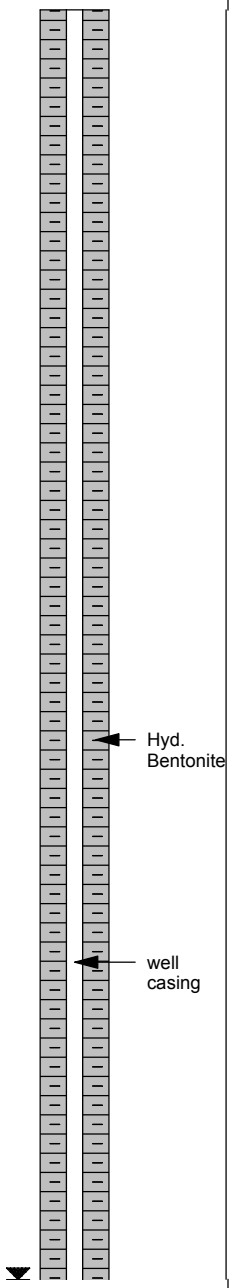
WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch
WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand
ANNULUS SEAL
Port. Cement/Hyd. Bent.
GROUT
Hyd. Bentonite
SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR		NR: No Samples/Hand Augered			0
5		Fill		Fill: brown (10YR 5/3) sand/gravel fill			0
	4.5	SM		Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding, moist, fine grained sand, moderately dense			0
10		SP		Sand, Fine: pale brown (10YR 6/3), sand w/ white crystals, moist, loose, very fine grained, poorly graded			0
	3.5	SM		Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding, moist, moderately dense			0
15	3.0	SP		Sand, Fine: pale brown (10YR 6/3), sand, moist, loose, very fine grained, poorly graded			0
20				Sand, Fine: pale brown (10YR 6/3), sand, moist, wet at 20 ft, loose, very fine grained, poorly graded, moderate			



Measuring point is ground surface unless otherwise noted.

Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
USCS - Unified Soil Classification System
Privileged and Confidential - Attorney/Client Work Product

WELL LOG

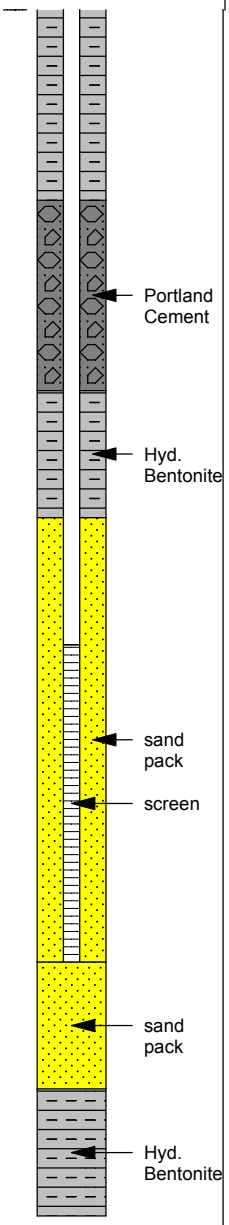
WELL NUMBER: **HVW-05**

WELL DEPTH: **39 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION		DRILLING INFORMATION			WELL CONSTRUCTION	
PROJECT:	WSMR HELSTEF	DRILLING CO.:	WDC	ELEVATION TOC: 3963.13 ft.	WELL CASING	SAND PACK
SITE LOCATION:	WSMR - TSA Area	DRILLER:	Matt Cain	REFERENCE: St. Plane, NAD 83	Material: Sch 40 PVC	10/20 Graded Silica Sand
PROJECT NUMBER:	GP08WSMR.0C16	DRILLER HELPER	Mo/Daniel	NORTHING: 588620.5911	Diameter: 2 inch	ANNULUS SEAL
LOGGED BY:	Laura Madsen	DRILLING METHOD:	HSA	EASTING: 1624485.516	WELL SCREEN	Port. Cement/Hyd. Bent.
DATE STARTED:	3/24/09	SAMPLING METHOD:	5' x 3" CME barrel		Material: SS wire-wrap	GROUT
DATE COMPLETED:	3/25/09				Diameter: 2-inch	Hyd. Bentonite
					Opening: 10-slot	SURFACE COMPLETION
						Lock cap/8 or 12" f. mount

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
20	3.0	SP		odor.			
25	5.0	CL		Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			0 0
		SM		Silty Sand: brown (10YR 5/3), silty sand, wet, moderately dense, very fine grained, moderate odor			0
		CL		Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			0
30	4.0	ML		Silt: brown (10YR 5/3), silt with fine grained sand, wet, soft to moderately dense			0 0 0
35	5.0	CL		Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			

WATER LEVEL:
- During drilling
- After completion



Measuring point is ground surface unless otherwise noted.

Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
USCS - Unified Soil Classification System
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WELL LOG

WELL NUMBER: **HVW-06**

WELL DEPTH: **30 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: WSMR HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/25/09
DATE COMPLETED: 3/25/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3963.08 ft.
REFERENCE: St. Plane, NAD 83
NORTHING: 588623.6066
EASTING: 1624480.492

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

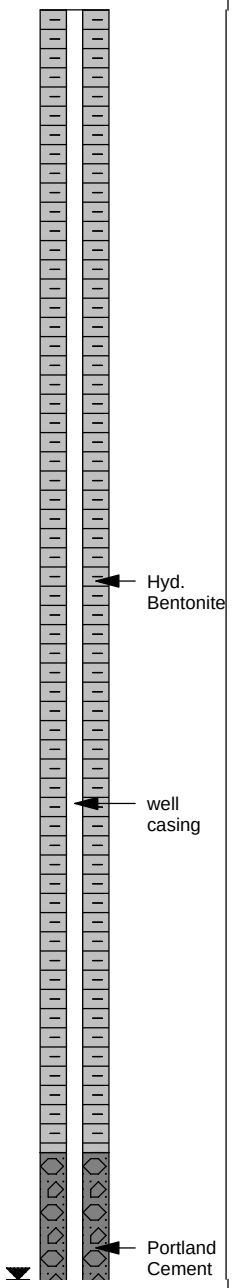
ANNULUS SEAL
Port. Cement/Hyd. Bent.

GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR		NR: Note: Borehole not logged due to proximity to HVW-05 and HVW-10. The lithologic information here was taken from HVW-05, the well construction information is for HVW-06. No Samples/Hand Augered			0
5	4.5	Fill		Fill: brown (10YR 5/3) sand/gravel fill			0 0
		SM		Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding, moist, fine grained sand, moderately dense			0 0
10	3.5	SP		Sand, Fine: pale brown (10YR 6/3), sand w/ white crystals, moist, loose, very fine grained, poorly graded			0
		SM		Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding, moist, moderately dense			0 0 0
15	3.0	SP		Sand, Fine: pale brown (10YR 6/3), sand, moist, loose, very fine grained, poorly graded			0 0 0
20				Sand, Fine: pale brown (10YR 6/3), sand, moist, wet at 20 ft, loose, very fine grained, poorly graded, moderate			



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WELL LOG

WELL NUMBER: **HVW-06**

WELL DEPTH: **30 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: WSMR HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/25/09
DATE COMPLETED: 3/25/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3963.08 ft.
REFERENCE: St. Plane, NAD 83
NORTHING: 588623.6066
EASTING: 1624480.492

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

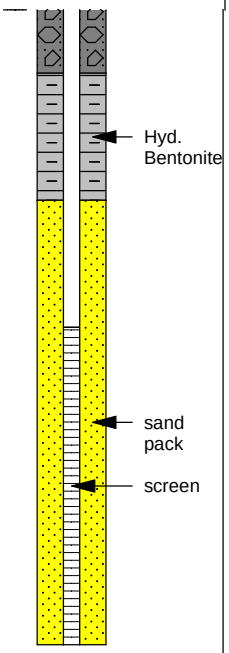
ANNULUS SEAL
Port. Cement/Hyd. Bent.

GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
20	3.0	SP	odor.			
25	5.0	CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			0 0
		SM	Silty Sand: brown (10YR 5/3), silty sand, wet, moderately dense, very fine grained, moderate odor			0
		CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			0
30	4.0	ML	Silt: brown (10YR 5/3), silt with fine grained sand, wet, soft to moderately dense			0 0 0
35	5.0	CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic, no odor			



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WELL LOG

WELL NUMBER: **HVW-07**

WELL DEPTH: **29 feet** HOLE DIAMETER: **12 INCHES**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/24/09
DATE COMPLETED: 3/24/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3962.93 ft.
REFERENCE: St. Plane, NAD 83
NORTHING: 588611.6954
EASTING: 1624463.712

WELL CONSTRUCTION

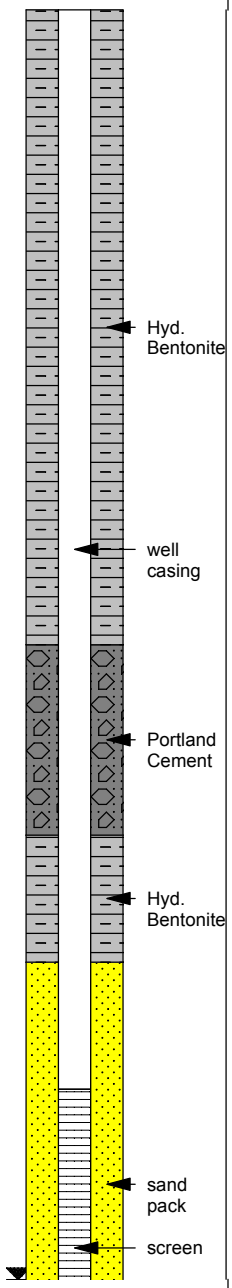
WELL CASING
Material: Sch 40 PVC
Diameter: 4 inch
WELL SCREEN
Material: SS wire-wrap
Diameter: 4 inch
Opening: 20-slot

SAND PACK
10/20 Graded Silica Sand
ANNULUS SEAL
Port. Cement/Hyd. Bent.
GROUT
Hyd. Bentonite
SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

LITHOLOGY / SAMPLING DETAIL

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR	NR: No Samples/Hand Augered			0
5	3.5	SP	Sand, Fine: pale brown (10YR 6/3), sand w/ trace silt and white crystals, moist, loose, fine grained			0, 0
		CL	Clay: brown (10YR 5/3), clay w/ white crystalline horizontal banding, moist, hard, slightly plastic			0
10	3.5	SM	Silty Sand: yellowish brown (10YR 5/4), silt w/ very fine grained sand and white crystals, moist, loose, becomes moderately dense at -11.5'			0, 0, 0
15	2.5	SP	Sand, Fine: pale brown, (10YR 6/3), very fine grained sand with no fines, moist, loose, wet at -20'			0, 0, 0
20						



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Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
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Well Log
Prepared by: Laura Madsen

WELL LOG

WELL NUMBER: **HVW-07**

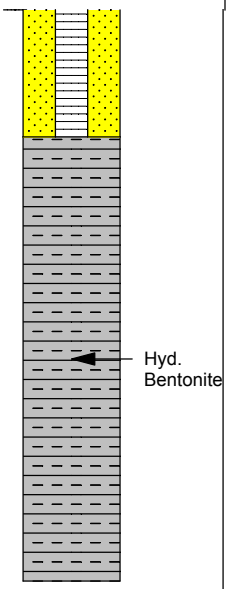
WELL DEPTH: **29 feet** HOLE DIAMETER: **12 INCHES**

PROJECT INFORMATION		DRILLING INFORMATION				WELL CONSTRUCTION	
PROJECT:	White Sands HELSTEF	DRILLING CO.:	WDC	ELEVATION TOC:	3962.93 ft.	WELL CASING	SAND PACK
SITE LOCATION:	WSMR - TSA Area	DRILLER:	Matt Cain	REFERENCE:	St. Plane, NAD 83	Material: Sch 40 PVC	10/20 Graded Silica Sand
PROJECT NUMBER:	GP08WSMR.0C16	DRILLER HELPER	Mo/Daniel	NORTHING:	588611.6954	Diameter: 4 inch	ANNULUS SEAL
LOGGED BY:	Laura Madsen	DRILLING METHOD:	HSA	EASTING:	1624463.712	WELL SCREEN	Port. Cement/Hyd. Bent.
DATE STARTED:	3/24/09	SAMPLING METHOD:	5' x 3" CME barrel			Material: SS wire-wrap	GROUT
DATE COMPLETED:	3/24/09					Diameter: 4 inch	Hyd. Bentonite
						Opening: 20-slot	SURFACE COMPLETION
							Lock cap/8 or 12" f. mount

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)	DEPTH (ft bgs)
20	3.5						0	20
							0	
25	5.0	CL		Clay: brown (10YR 5/3), clay with white crystals, moist, hard, slightly plastic				25
		SP		Sand, Fine: brown (10YR 5/3), fine grained sand, wet, loose				
		CL		Clay: brown (10YR 5/3), clay with white crystals, moist, hard, slightly plastic				

WATER LEVEL:

- During drilling
- After completion



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WELL LOG

WELL NUMBER: **HVW-08**

WELL DEPTH: **39 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/24/09
DATE COMPLETED: 3/24/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3962.75 ft
REFERENCE: St. Plane, NAD 83
NORTHING: 588602.6008
EASTING: 1624462.061

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

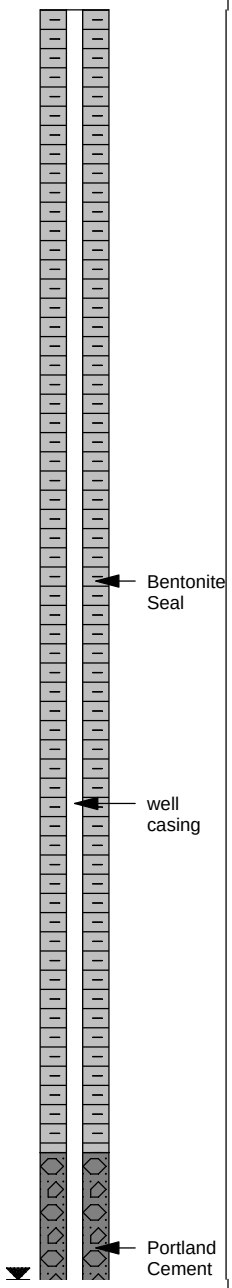
ANNULUS SEAL
Port. Cement/Hyd. Bent.

GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR	NR: No Samples/Hand Augered			0
5	4.0	Fill	Fill: brown (10YR 5/3) sand/gravel fill, moist, loose			0
		SM	Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding, moist, very fine grained, moderately dense			0
10	3.5	SP	Sand, Fine: pale brown (10YR 6/3), sand w/ white crystals, moist, loose, very fine grained, poorly graded			0
		ML	Silt: brown (10YR 5/3), silt w/ white crystalline horizontal banding, moist, moderately dense			0
15	2.5	SP	Sand, Fine: pale brown (10YR 6/3), sand, moist, loose, very fine grained, poorly graded,			0
20			Sand, Fine: pale brown (10YR 6/3), sand, wet at 20 ft, loose, very fine grained, poorly graded, moderate odor,			0.1



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Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
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Well Log
Prepared by: Laura Madsen

WELL LOG

WELL NUMBER: **HVW-08**

WELL DEPTH: **39 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/24/09
DATE COMPLETED: 3/24/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3962.75 ft
REFERENCE: St. Plane, NAD 83
NORTHING: 588602.6008
EASTING: 1624462.061

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

ANNULUS SEAL
Port. Cement/Hyd. Bent.

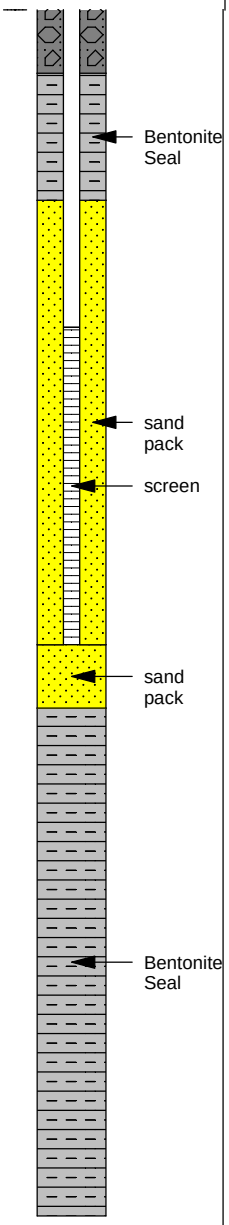
GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

LITHOLOGY / SAMPLING DETAIL

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
20	3.0					1.1
						0
25	5.0	CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic			0
		SM	Silty Sand: brown (10YR 5/3), silty sand, wet, moderately dense, very fine grained			0
		CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic			0
30	5.0	ML	Silt: brown (10YR 5/3), silt with very fine grained sand, wet, moderately dense, moderate odor			0
						0
		CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic			0
		SP	Sand, Fine: brown (10YR 5/3), sand, wet, loose, fine grained, poorly graded			0
35	5.0	CL	Clay: brown (10YR 5/3), clay, moist, hard, slightly plastic			



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Well Log
Prepared by: Laura Madsen

WELL LOG

WELL NUMBER: **HVW-09**

WELL DEPTH: **29 feet** HOLE DIAMETER: **12 inches**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/23/09
DATE COMPLETED: 3/23/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3961.57 ft.
REFERENCE: St. Plane, NAD 83
NORTHING: 588598.1779
EASTING: 1624506.207

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 4 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 4 inch
Opening: 20-slot

SAND PACK
10/20 Graded Silica Sand

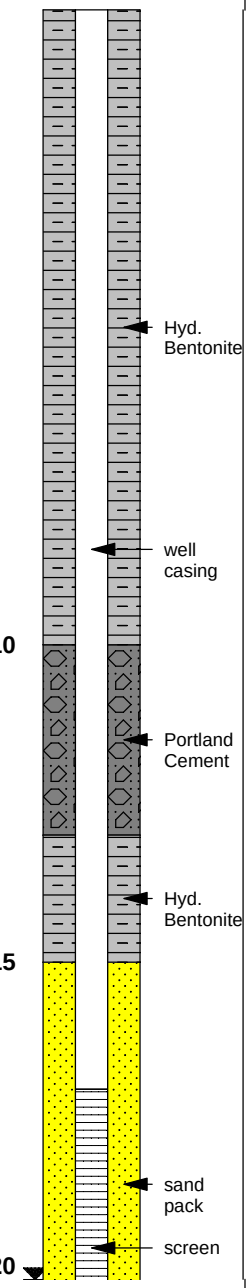
ANNULUS SEAL
Port. Cement/Hyd. Bent.

GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR		NR: No Samples/Hand Augered			
							0
5	1.0	SM		Silty Sand: brown (10YR 5/3), silty sand w/ fine gravel, 15% silt, moist, well graded, loose fine to medium sand, subangular fine gravel			
							0
		SM		Silty Sand: brown (7.5YR 5/3), silty sand w/ fine gravel, 15% silt, moist, well graded, loose fine to medium sand, subangular fine gravel			
10	2.0	ML		Silt: brown (7.5YR 5/3), silt w. white crystalline horizontal banding (1-2 mm thick), moist, firm			
							0
15	4.0			Silt: brown (10YR 5/3), silt, w/ very fine grained sand, moist, soft, w/ interbedded sandy silt lenses and clear crystalline horizontal banding at -15.5', with slight odor at -16.5'			0
							21
							24
20				Sand: brown (10YR 5/3), sand, moist, slight odor, very fine grained with little to no fines, very moist to wet at -			



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WELL LOG

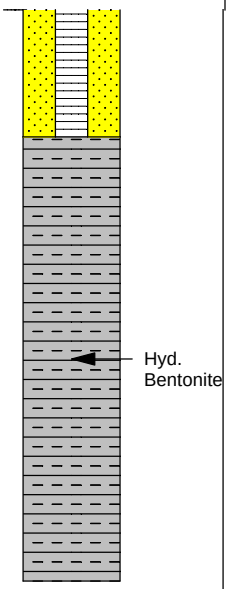
WELL NUMBER: **HVW-09**

WELL DEPTH: **29 feet** HOLE DIAMETER: **12 inches**

PROJECT INFORMATION		DRILLING INFORMATION				WELL CONSTRUCTION	
PROJECT:	White Sands HELSTEF	DRILLING CO.:	WDC	ELEVATION TOC:	3961.57 ft.	WELL CASING	SAND PACK
SITE LOCATION:	WSMR - TSA Area	DRILLER:	Matt Cain	REFERENCE:	St. Plane, NAD 83	Material: Sch 40 PVC	10/20 Graded Silica Sand
PROJECT NUMBER:	GP08WSMR.0C16	DRILLER HELPER	Mo/Daniel	NORTHING:	588598.1779	Diameter: 4 inch	ANNULUS SEAL
LOGGED BY:	Laura Madsen	DRILLING METHOD:	HSA	EASTING:	1624506.207	WELL SCREEN	Port. Cement/Hyd. Bent.
DATE STARTED:	3/23/09	SAMPLING METHOD:	5' x 3" CME barrel			Material: SS wire-wrap	GROUT
DATE COMPLETED:	3/23/09					Diameter: 4 inch	Hyd. Bentonite
						Opening: 20-slot	SURFACE COMPLETION
							Lock cap/8 or 12" f. mount

WATER LEVEL:
- During drilling
- After completion

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)	DEPTH (ft bgs)
20	2.5	SP		20' to -21', slightly consolidated at -21'			2	20
							0	
25	5.0	CL		Clay: brown (10YR 5/3), clay w/ white crystals, moist, firm, slightly plastic, with lenses of silty sand at -25.5' and -28.5'			0	25
							0	
							0	



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WELL LOG

WELL NUMBER: **HVW-10**

WELL DEPTH: **44 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/23/09
DATE COMPLETED: 3/23/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3963.21 ft
REFERENCE: St. Plane, NAD 83
NORTHING: 588618.9056
EASTING: 1624481.423

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

ANNULUS SEAL
Port. Cement/Hyd. Bent.

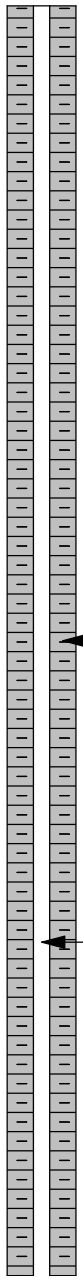
GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

LITHOLOGY / SAMPLING DETAIL

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SYMBOL	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
0		NR		NR: No Samples/Hand Augered			0
5	4.5	SM		Silty Sand: brown (10YR 5/3), silty sand w/ white crystalline horizontal banding and interbedded silt layers 1-2mm thick, moist, very fine grained, moderately dense			0, 0, 0
10	4.0	SP/SM		Sand and Silt: brown (10YR 5/3), sand/silt w/ white crystals, moist, loose, sand is very fine grained			0
		ML		Clayey Silt: brown (10YR 5/3), clayey silt w/ white crystals, moist, moderately stiff			0, 0, 0, 0
15	3.0	SP/ML		Sand and Silt: brown (10YR 5/3), interbedded sand w/ no fines and silt, moist, loose to soft, no odor, sand is very fine grained			0, 0, 5
20				Sand, Fine: brown (10YR 5/3), sand w/ white crystals and no fines, moist, loose, strong odor, no staining,			15



Measuring point is ground surface unless otherwise noted.

Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
USCS - Unified Soil Classification System
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WELL LOG

WELL NUMBER: **HVW-10**

WELL DEPTH: **44 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT:	White Sands HELSTEF
SITE LOCATION:	WSMR - TSA Area
PROJECT NUMBER:	GP08WSMR.0C16
LOGGED BY:	Laura Madsen
DATE STARTED:	3/23/09
DATE COMPLETED:	3/23/09

DRILLING INFORMATION

DRILLING CO.:	WDC
DRILLER:	Matt Cain
DRILLER HELPER	Mo/Daniel
DRILLING METHOD:	HSA
SAMPLING METHOD:	5' x 3" CME barrel
ELEVATION TOC:	3963.21 ft
REFERENCE:	St. Plane, NAD 83
NORTHING:	588618.9056
EASTING:	1624481.423

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

ANNULUS SEAL
Port. Cement/Hyd. Bent.

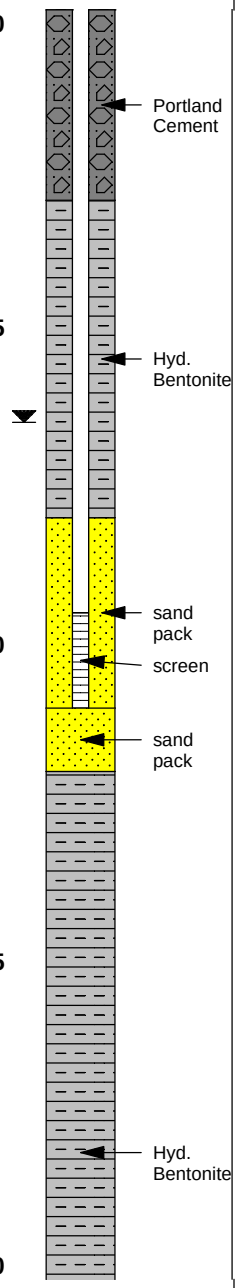
GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

LITHOLOGY / SAMPLING DETAIL

DEPTH (ft bgs)	RECOVERY (ft)	USCS	SOIL DESCRIPTIONS	SAMPLE COLLECTED	ANALYTES	PID (ppm)
20	3.5	SP	sand is fine grained			
25	5.0	SP/ML	Sand and Silt: brown (10YR 5/3), interbedded sand and silt, wet at -26.5', soft, strong odor, sand is very fine grained			
		CL	Clay: brown (10YR 5/3), clay, moist, firm to hard, slightly plastic			
30	5.0	SP	Sand, Fine: brown (10YR 5/3), sand, wet loose, sand is very fine grained with no fines			
35	5.0	CL	Clay: brown (10YR 5/3), clay w/ white crystals at -34' to -36', moist, hard			
40						



Measuring point is ground surface unless otherwise noted.

Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
USCS - Unified Soil Classification System
Privileged and Confidential - Attorney/Client Work Product

Well Log
Prepared by: Laura Madsen

WELL LOG

WELL NUMBER: **HVW-10**

WELL DEPTH: **44 feet** HOLE DIAMETER: **8.5 inches**

PROJECT INFORMATION

PROJECT: White Sands HELSTEF
SITE LOCATION: WSMR - TSA Area
PROJECT NUMBER: GP08WSMR.0C16
LOGGED BY: Laura Madsen
DATE STARTED: 3/23/09
DATE COMPLETED: 3/23/09

DRILLING INFORMATION

DRILLING CO.: WDC
DRILLER: Matt Cain
DRILLER HELPER Mo/Daniel
DRILLING METHOD: HSA
SAMPLING METHOD: 5' x 3" CME barrel

ELEVATION TOC: 3963.21 ft
REFERENCE: St. Plane, NAD 83
NORTHING: 588618.9056
EASTING: 1624481.423

WELL CONSTRUCTION

WELL CASING
Material: Sch 40 PVC
Diameter: 2 inch

WELL SCREEN
Material: SS wire-wrap
Diameter: 2-inch
Opening: 10-slot

SAND PACK
10/20 Graded Silica Sand

ANNULUS SEAL
Port. Cement/Hyd. Bent.

GROUT
Hyd. Bentonite

SURFACE COMPLETION
Lock cap/8 or 12" f. mount

WATER LEVEL:
During drilling
After completion

DEPTH (ft bgs)	RECOVERY (ft)	LITHOLOGY: USCS	LITHOLOGY: SYMBOL	LITHOLOGY: SOIL DESCRIPTIONS	SAMPLING DETAIL: SAMPLE COLLECTED	SAMPLING DETAIL: ANALYTES	SAMPLING DETAIL: PID (ppm)	DEPTH (ft bgs)
40								40
		ML		Sandy Silt: brown (10YR 5/3), sandy silt, moist, firm				
		CL		Clay: brown (10YR 5/3), clay, moist, hard				

Measuring point is ground surface unless otherwise noted.

Notes: in - inches, ft bgs - feet below ground surface, ppm - part per million
USCS - Unified Soil Classification System
Privileged and Confidential - Attorney/Client Work Product

Appendix D

Analytical and Data Validation Reports

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director

Case Narrative

Samples for project HELSTF TSA CMI were received by TraceAnalysis, Inc. on 2009-03-25 and assigned to work order 9032530. Samples for work order 9032530 were received intact at a temperature of 3.7 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	49492	2009-03-25 at 10:04	57951	2009-03-25 at 10:04
BTEX	S 8021B	49538	2009-03-26 at 08:03	57999	2009-03-26 at 08:03
BTEX	S 8021B	49590	2009-03-27 at 11:06	58061	2009-03-27 at 11:06
MTBE	S 8021B	49492	2009-03-25 at 10:04	57951	2009-03-25 at 10:04
MTBE	S 8021B	49538	2009-03-26 at 08:03	57999	2009-03-26 at 08:03
MTBE	S 8021B	49590	2009-03-27 at 11:06	58061	2009-03-27 at 11:06
TPH GRO	S 8015B	49590	2009-03-27 at 11:06	58062	2009-03-27 at 11:06

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9032530 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 191140 - HTSA-0197-HVW-009-(16.0-17.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	58061	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.00145	<0.0200	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene		**0.270**	**0.270**	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene		**0.0269**	**0.0269**	<0.00611	mg/Kg	1	0.00611	0.02	0.00611
Ethylbenzene	U	<0.00630	<0.0200	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene		**0.0709**	**0.0709**	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1]	0.570	mg/Kg	1	2.00	28	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[2]	0.530	mg/Kg	1	2.00	26	42.1 - 116

Sample: 191140 - HTSA-0197-HVW-009-(16.0-17.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**9.43**	**9.43**	0.602	mg/Kg	1	0.403	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[3]	0.470	mg/Kg	1	2.00	24	86.3 - 112
4-Bromofluorobenzene (4-BFB)	[4]	0.534	mg/Kg	1	2.00	27	61.8 - 107

Sample: 191141 - HTSA-0197-HVW-009-(19.0-20.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035

[1] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[2] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[3] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[4] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.

QC Batch:	58061	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.00145	<0.0200	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene	U	<0.00505	<0.0200	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene	U	<0.00611	<0.0200	<0.00611	mg/Kg	1	0.00611	0.02	0.00611
Ethylbenzene	U	<0.00630	<0.0200	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene	U	<0.00673	<0.0200	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[5]	0.258	mg/Kg	1	2.00	13	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[6]	0.269	mg/Kg	1	2.00	13	42.1 - 116

Sample: 191141 - HTSA-0197-HVW-009-(19.0-20.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	B	**2.28**	**2.28**	0.602	mg/Kg	1	0.403	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[7]	0.242	mg/Kg	1	2.00	12	86.3 - 112
4-Bromofluorobenzene (4-BFB)	[8]	0.284	mg/Kg	1	2.00	14	61.8 - 107

Sample: 191142 - HTSA-0197-HVW-010-(25.5-26.5')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	57999	Date Analyzed:	2009-03-26	Analyzed By:	ER
Prep Batch:	49538	Sample Preparation:	2009-03-26	Prepared By:	ER

[5] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[6] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[7] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[8] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.00145	<0.0200	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene		**0.539**	**0.539**	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene		**1.24**	**1.24**	<0.00611	mg/Kg	1	0.00611	0.02	0.00611
Ethylbenzene	U	<0.00630	<0.0200	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene		**13.2**	**13.2**	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.77	mg/Kg	1	2.00	88	72.9 - 113
4-Bromofluorobenzene (4-BFB)	9	8.34	mg/Kg	1	2.00	417	42.1 - 116

Sample: 191142 - HTSA-0197-HVW-010-(25.5-26.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**2070**	**2070**	6.02	mg/Kg	10	4.03	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	10	23.8	mg/Kg	10	20.0	119	86.3 - 112
4-Bromofluorobenzene (4-BFB)	11	50.2	mg/Kg	10	20.0	251	61.8 - 107

Sample: 191143 - HTSA-0197-HVW-007-20.0-22.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	58061	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.00145	<0.0200	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene	U	<0.00505	<0.0200	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene	U	<0.00611	<0.0200	<0.00611	mg/Kg	1	0.00611	0.02	0.00611

continued ...

[9] High surrogate recovery due to peak interference.
[10] High surrogate recovery due to peak interference.
[11] High surrogate recovery due to peak interference.

sample 191143 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Ethylbenzene	U	<0.00630	<0.0200	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene	U	<0.00673	<0.0200	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[12]	0.324	mg/Kg	1	2.00	16	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[13]	0.344	mg/Kg	1	2.00	17	42.1 - 116

Sample: 191143 - HTSA-0197-HVW-007-20.0-22.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	B	**5.46**	**5.46**	0.602	mg/Kg	1	0.403	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[14]	0.332	mg/Kg	1	2.00	17	86.3 - 112
4-Bromofluorobenzene (4-BFB)	[15]	0.439	mg/Kg	1	2.00	22	61.8 - 107

Sample: 191144 - HTSA-0197-HVW-008-(30.0-31.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	57999	Date Analyzed:	2009-03-26	Analyzed By:	ER
Prep Batch:	49538	Sample Preparation:	2009-03-26	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**1.18**	**1.18**	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene		**4.82**	**4.82**	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene		**40.0**	**40.0**	<0.00611	mg/Kg	1	0.00611	0.02	0.00611

continued ...

[12] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[13] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[14] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[15] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.

sample 191144 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Ethylbenzene		**19.4**	**19.4**	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene		**61.5**	**61.5**	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.03	mg/Kg	1	2.00	102	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[16]	4.65	mg/Kg	1	2.00	232	42.1 - 116

Sample: 191144 - HTSA-0197-HVW-008-(30.0-31.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**320**	**320**	6.02	mg/Kg	10	4.03	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		17.4	mg/Kg	10	20.0	87	86.3 - 112
4-Bromofluorobenzene (4-BFB)		20.8	mg/Kg	10	20.0	104	61.8 - 107

Sample: 191145 - HTSA-0197-HVW-008-(20-22.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	58061	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	*U*	<0.00725	<0.100	<0.00725	mg/Kg	5	0.00725	0.02	0.00145
Benzene	[17] *U*	<0.0252	<0.100	<0.0252	mg/Kg	5	0.0252	0.02	0.00505
Toluene	*J*	**0.0315**	<0.100	<0.0306	mg/Kg	5	0.0306	0.02	0.00611
Ethylbenzene	*U*	<0.0315	<0.100	<0.0315	mg/Kg	5	0.0315	0.02	0.0063
Xylene		**0.512**	**0.512**	<0.0336	mg/Kg	5	0.0336	0.02	0.00673

[16] High surrogate recovery due to peak interference.
[17] Sample ran at dilution due to hydrocarbons with a retention time greater than xylene.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		11.3	mg/Kg	5	10.0	113	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[18]	12.2	mg/Kg	5	10.0	122	42.1 - 116

Sample: 191145 - HTSA-0197-HVW-008-(20-22.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**120**	**120**	3.01	mg/Kg	5	2.02	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[19]	11.7	mg/Kg	5	10.0	117	86.3 - 112
4-Bromofluorobenzene (4-BFB)	[20]	12.4	mg/Kg	5	10.0	124	61.8 - 107

Sample: 191146 - HTSA-0197-HVW-108-(20.0-22.0')

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	58061	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	*U*	<0.00145	<0.0200	<0.00145	mg/Kg	1	0.00145	0.02	0.00145
Benzene	*U*	<0.00505	<0.0200	<0.00505	mg/Kg	1	0.00505	0.02	0.00505
Toluene	*U*	<0.00611	<0.0200	<0.00611	mg/Kg	1	0.00611	0.02	0.00611
Ethylbenzene	*U*	<0.00630	<0.0200	<0.00630	mg/Kg	1	0.00630	0.02	0.0063
Xylene		**0.316**	**0.316**	<0.00673	mg/Kg	1	0.00673	0.02	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[21]	0.515	mg/Kg	1	2.00	26	72.9 - 113
4-Bromofluorobenzene (4-BFB)	[22]	0.802	mg/Kg	1	2.00	40	42.1 - 116

[18] High surrogate recovery due to peak interference.
[19] High surrogate recovery due to peak interference.
[20] High surrogate recovery due to peak interference.
[21] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[22] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.

Sample: 191146 - HTSA-0197-HVW-108-(20.0-22.0')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	58062	Date Analyzed:	2009-03-27	Analyzed By:	MT
Prep Batch:	49590	Sample Preparation:	2009-03-27	Prepared By:	MT

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**63.4**	**63.4**	0.602	mg/Kg	1	0.403	1	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[23]	0.590	mg/Kg	1	2.00	30	86.3 - 112
4-Bromofluorobenzene (4-BFB)	[24]	0.989	mg/Kg	1	2.00	49	61.8 - 107

Sample: 191147 - HTSA-0197-TB-001

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5030B
QC Batch:	57951	Date Analyzed:	2009-03-25	Analyzed By:	ER
Prep Batch:	49492	Sample Preparation:	2009-03-25	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	*U*	<0.000469	<0.00100	<0.000469	mg/L	1	0.000469	0.001	0.000469
Benzene	*U*	<0.000149	<0.00100	<0.000149	mg/L	1	0.000149	0.001	0.000149
Toluene	*U*	<0.000188	<0.00100	<0.000188	mg/L	1	0.000188	0.001	0.000188
Ethylbenzene	*U*	<0.000178	<0.00100	<0.000178	mg/L	1	0.000178	0.001	0.000178
Xylene	*U*	<0.000163	<0.00100	<0.000163	mg/L	1	0.000163	0.001	0.000163

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0903	mg/L	1	0.100	90	77 - 118
4-Bromofluorobenzene (4-BFB)		0.0976	mg/L	1	0.100	98	77 - 121

Method Blank (1)

QC Batch:	57951	Date Analyzed:	2009-03-25	Analyzed By:	ER
Prep Batch:	49492	QC Preparation:	2009-03-25	Prepared By:	ER

Parameter	Flag	Result	Units	Reporting Limits
MTBE		<0.000469	mg/L	0.000469

continued ...

[23] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.
[24] Surrogate out due to matrix interference. Sample was reran on 3/27/2009 to confirm matrix interference results.

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
Benzene		<0.000149	mg/L	0.000149
Toluene		<0.000188	mg/L	0.000188
Ethylbenzene		<0.000178	mg/L	0.000178
Xylene		<0.000163	mg/L	0.000163

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0900	mg/L	1	0.100	90	77 - 118
4-Bromofluorobenzene (4-BFB)		0.0963	mg/L	1	0.100	96	77 - 121

Method Blank (1)

QC Batch: 57999 Date Analyzed: 2009-03-26 Analyzed By: ER
Prep Batch: 49538 QC Preparation: 2009-03-26 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
MTBE		<0.00145	mg/Kg	0.00145
Benzene		<0.00505	mg/Kg	0.00505
Toluene		<0.00611	mg/Kg	0.00611
Ethylbenzene		<0.00630	mg/Kg	0.0063
Xylene		<0.00673	mg/Kg	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	72.9 - 113
4-Bromofluorobenzene (4-BFB)		1.97	mg/Kg	1	2.00	98	42.1 - 116

Method Blank (1)

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

Parameter	Flag	Result	Units	Reporting Limits
MTBE		<0.00145	mg/Kg	0.00145
Benzene		<0.00505	mg/Kg	0.00505
Toluene		<0.00611	mg/Kg	0.00611
Ethylbenzene		<0.00630	mg/Kg	0.0063
Xylene		<0.00673	mg/Kg	0.00673

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	72.9 - 113
4-Bromofluorobenzene (4-BFB)		1.97	mg/Kg	1	2.00	98	42.1 - 116

Method Blank (1)

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

Parameter	Flag	Result	Units	Reporting Limits
GRO		0.602	mg/Kg	0.403

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.06	mg/Kg	1	2.00	103	86.3 - 112
4-Bromofluorobenzene (4-BFB)		2.04	mg/Kg	1	2.00	102	61.8 - 107

Laboratory Control Spike (LCS-1)

QC Batch: 57951 Date Analyzed: 2009-03-25 Analyzed By: ER
Prep Batch: 49492 QC Preparation: 2009-03-25 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	0.0853	mg/L	1	0.100	<0.000469	85	68.9 - 134
Benzene	0.0853	mg/L	1	0.100	<0.000149	85	80.9 - 110
Toluene	0.0910	mg/L	1	0.100	<0.000188	91	82.8 - 112
Ethylbenzene	0.0910	mg/L	1	0.100	<0.000178	91	83.3 - 113
Xylene	0.266	mg/L	1	0.300	<0.000163	89	82 - 111

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	0.0824	mg/L	1	0.100	<0.000469	82	68.9 - 134	3	20
Benzene	0.0836	mg/L	1	0.100	<0.000149	84	80.9 - 110	2	20
Toluene	0.0889	mg/L	1	0.100	<0.000188	89	82.8 - 112	2	20
Ethylbenzene	0.0888	mg/L	1	0.100	<0.000178	89	83.3 - 113	2	20
Xylene	0.259	mg/L	1	0.300	<0.000163	86	82 - 111	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0855	0.0852	mg/L	1	0.100	86	85	73 - 110
4-Bromofluorobenzene (4-BFB)	0.0880	0.0881	mg/L	1	0.100	88	88	74.4 - 113

Laboratory Control Spike (LCS-1)

QC Batch: 57999 Date Analyzed: 2009-03-26 Analyzed By: ER
Prep Batch: 49538 QC Preparation: 2009-03-26 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	1.89	mg/Kg	1	2.00	<0.00145	94	76.1 - 115
Benzene	1.76	mg/Kg	1	2.00	<0.00505	88	79.1 - 109
Toluene	1.79	mg/Kg	1	2.00	<0.00611	90	79.4 - 111
Ethylbenzene	1.76	mg/Kg	1	2.00	<0.00630	88	77.7 - 112
Xylene	5.40	mg/Kg	1	6.00	<0.00673	90	78.4 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	2.03	mg/Kg	1	2.00	<0.00145	102	76.1 - 115	7	20
Benzene	1.98	mg/Kg	1	2.00	<0.00505	99	79.1 - 109	12	20
Toluene	2.03	mg/Kg	1	2.00	<0.00611	102	79.4 - 111	13	20
Ethylbenzene	1.91	mg/Kg	1	2.00	<0.00630	96	77.7 - 112	8	20
Xylene	6.05	mg/Kg	1	6.00	<0.00673	101	78.4 - 112	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.74	mg/Kg	1	2.00	86	87	72.9 - 111
4-Bromofluorobenzene (4-BFB)	1.83	2.00	mg/Kg	1	2.00	92	100	68.5 - 114

Laboratory Control Spike (LCS-1)

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	1.97	mg/Kg	1	2.00	<0.00145	98	76.1 - 115
Benzene	1.86	mg/Kg	1	2.00	<0.00505	93	79.1 - 109
Toluene	2.04	mg/Kg	1	2.00	<0.00611	102	79.4 - 111
Ethylbenzene	1.96	mg/Kg	1	2.00	<0.00630	98	77.7 - 112
Xylene	6.02	mg/Kg	1	6.00	<0.00673	100	78.4 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	1.98	mg/Kg	1	2.00	<0.00145	99	76.1 - 115	0	20
Benzene	2.00	mg/Kg	1	2.00	<0.00505	100	79.1 - 109	7	20
Toluene	2.03	mg/Kg	1	2.00	<0.00611	102	79.4 - 111	0	20
Ethylbenzene	1.96	mg/Kg	1	2.00	<0.00630	98	77.7 - 112	0	20
Xylene	6.02	mg/Kg	1	6.00	<0.00673	100	78.4 - 112	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	2.03	mg/Kg	1	2.00	90	102	72.9 - 111
4-Bromofluorobenzene (4-BFB)	1.94	2.03	mg/Kg	1	2.00	97	102	68.5 - 114

Laboratory Control Spike (LCS-1)

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	21.8	mg/Kg	1	20.0	0.602	109	78.1 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO [25]	22.5	mg/Kg	1	20.0	0.602	112	78.1 - 109	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	2.14	mg/Kg	1	2.00	96	107	80.3 - 108
4-Bromofluorobenzene (4-BFB)	1.91	2.17	mg/Kg	1	2.00	96	108	82.6 - 109

Matrix Spike (MS-1) Spiked Sample: 191037

QC Batch: 57951 Date Analyzed: 2009-03-25 Analyzed By: ER
Prep Batch: 49492 QC Preparation: 2009-03-25 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	0.0906	mg/L	1	0.100	0.0075	83	39.8 - 154
Benzene	0.508	mg/L	1	0.100	0.4269	81	60.2 - 125
Toluene	0.0767	mg/L	1	0.100	0.0008	76	61.9 - 127
Ethylbenzene	0.158	mg/L	1	0.100	0.0824	76	69 - 121
Xylene	0.221	mg/L	1	0.300	0.0018	73	65.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

[25] LCSD analyte out of range. LCS/LCSD has a RPD within limits. Therfore, LCS shows extraction occured properly.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	[26]	0.0448	mg/L	1	0.100	0.0075	37	39.8 - 154	68	20
Benzene	[27]	0.453	mg/L	1	0.100	0.4269	26	60.2 - 125	11	20
Toluene	[28]	0.0237	mg/L	1	0.100	0.0008	23	61.9 - 127	106	20
Ethylbenzene	[29]	0.108	mg/L	1	0.100	0.0824	26	69 - 121	38	20
Xylene	[30]	0.0690	mg/L	1	0.300	0.0018	22	65.4 - 120	105	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0808	0.0804	mg/L	1	0.1	81	80	72.4 - 112
4-Bromofluorobenzene (4-BFB)	0.0944	0.0968	mg/L	1	0.1	94	97	74.1 - 115

Matrix Spike (MS-1) Spiked Sample: 191144

QC Batch:	57999	Date Analyzed:	2009-03-26	Analyzed By:	ER
Prep Batch:	49538	QC Preparation:	2009-03-26	Prepared By:	ER

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	[31]	0.630	mg/Kg	1	2.00	1.18	-26	51.3 - 171
Benzene	[32]	3.14	mg/Kg	1	2.00	4.82	-84	55.2 - 162
Toluene	[33]	18.9	mg/Kg	1	2.00	40	-1055	56.5 - 172
Ethylbenzene	[34]	9.38	mg/Kg	1	2.00	19.4	-501	62.3 - 180
Xylene	[35]	29.4	mg/Kg	1	6.00	61.5	-535	62.2 - 182

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	[36]	1.99	mg/Kg	1	2.00	1.18	40	51.3 - 171	104	20
Benzene	[37]	2.99	mg/Kg	1	2.00	4.82	-90	55.2 - 162	5	20
Toluene	[38]	10.4	mg/Kg	1	2.00	40	-1480	56.5 - 172	58	20

continued . . .

[26] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[27] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[28] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[29] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[30] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[31] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[32] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[33] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[34] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[35] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[36] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[37] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[38] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene	[39]	4.85	mg/Kg	1	2.00	19.4	-726	62.3 - 180	64	20
Xylene	[40]	14.9	mg/Kg	1	6.00	61.5	-775	62.2 - 182	66	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	[41]	0.945	1.17	mg/Kg	1	2	47	58	52.2 - 173
4-Bromofluorobenzene (4-BFB)		2.38	1.82	mg/Kg	1	2	119	91	63.5 - 171

Matrix Spike (MS-1) Spiked Sample: 191513

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
MTBE	2.13	mg/Kg	1	2.00	<0.00145	106	51.3 - 171
Benzene	1.97	mg/Kg	1	2.00	<0.00505	98	55.2 - 162
Toluene	2.10	mg/Kg	1	2.00	0.0064	105	56.5 - 172
Ethylbenzene	2.18	mg/Kg	1	2.00	<0.00630	109	62.3 - 180
Xylene	6.59	mg/Kg	1	6.00	0.019	110	62.2 - 182

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
MTBE	2.11	mg/Kg	1	2.00	<0.00145	106	51.3 - 171	1	20
Benzene	2.08	mg/Kg	1	2.00	<0.00505	104	55.2 - 162	5	20
Toluene	2.21	mg/Kg	1	2.00	0.0064	110	56.5 - 172	5	20
Ethylbenzene	2.27	mg/Kg	1	2.00	<0.00630	114	62.3 - 180	4	20
Xylene	6.88	mg/Kg	1	6.00	0.019	114	62.2 - 182	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.23	2.31	mg/Kg	1	2	112	116	52.2 - 173
4-Bromofluorobenzene (4-BFB)	2.04	2.08	mg/Kg	1	2	102	104	63.5 - 171

Matrix Spike (MS-1) Spiked Sample: 191516

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT
Prep Batch: 49590 QC Preparation: 2009-03-27 Prepared By: MT

[39] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[40] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[41] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.0	mg/Kg	1	20.0	<0.403	100	54.3 - 180

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	20.4	mg/Kg	1	20.0	<0.403	102	54.3 - 180	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	1.95	mg/Kg	1	2	102	98	65.8 - 165
4-Bromofluorobenzene (4-BFB)	2.08	2.04	mg/Kg	1	2	104	102	68.6 - 210

Standard (CCV-1)

QC Batch: 57951 Date Analyzed: 2009-03-25 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.100	0.0848	85	80 - 120	2009-03-25
Benzene		mg/L	0.100	0.0884	88	80 - 120	2009-03-25
Toluene		mg/L	0.100	0.0930	93	80 - 120	2009-03-25
Ethylbenzene		mg/L	0.100	0.0915	92	80 - 120	2009-03-25
Xylene		mg/L	0.300	0.268	89	80 - 120	2009-03-25

Standard (CCV-2)

QC Batch: 57951 Date Analyzed: 2009-03-25 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.100	0.0801	80	80 - 120	2009-03-25
Benzene		mg/L	0.100	0.0810	81	80 - 120	2009-03-25
Toluene		mg/L	0.100	0.0863	86	80 - 120	2009-03-25
Ethylbenzene		mg/L	0.100	0.0850	85	80 - 120	2009-03-25
Xylene		mg/L	0.300	0.249	83	80 - 120	2009-03-25

Standard (CCV-1)

QC Batch: 57999 Date Analyzed: 2009-03-26 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.100	0.0891	89	80 - 120	2009-03-26
Benzene		mg/Kg	0.100	0.0947	95	80 - 120	2009-03-26
Toluene		mg/Kg	0.100	0.0973	97	80 - 120	2009-03-26
Ethylbenzene		mg/Kg	0.100	0.0962	96	80 - 120	2009-03-26
Xylene		mg/Kg	0.300	0.293	98	80 - 120	2009-03-26

Standard (CCV-2)

QC Batch: 57999 Date Analyzed: 2009-03-26 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.100	0.0959	96	80 - 120	2009-03-26
Benzene		mg/Kg	0.100	0.0974	97	80 - 120	2009-03-26
Toluene		mg/Kg	0.100	0.0993	99	80 - 120	2009-03-26
Ethylbenzene		mg/Kg	0.100	0.0982	98	80 - 120	2009-03-26
Xylene		mg/Kg	0.300	0.306	102	80 - 120	2009-03-26

Standard (CCV-1)

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.100	0.0880	88	80 - 120	2009-03-27
Benzene		mg/Kg	0.100	0.0938	94	80 - 120	2009-03-27
Toluene		mg/Kg	0.100	0.100	100	80 - 120	2009-03-27
Ethylbenzene		mg/Kg	0.100	0.0981	98	80 - 120	2009-03-27
Xylene		mg/Kg	0.300	0.299	100	80 - 120	2009-03-27

Standard (CCV-2)

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.100	0.0996	100	80 - 120	2009-03-27
Benzene		mg/Kg	0.100	0.0999	100	80 - 120	2009-03-27
Toluene		mg/Kg	0.100	0.101	101	80 - 120	2009-03-27
Ethylbenzene		mg/Kg	0.100	0.0965	96	80 - 120	2009-03-27
Xylene		mg/Kg	0.300	0.297	99	80 - 120	2009-03-27

Standard (CCV-3)

QC Batch: 58061 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/Kg	0.100	0.0986	99	80 - 120	2009-03-27
Benzene		mg/Kg	0.100	0.0947	95	80 - 120	2009-03-27
Toluene		mg/Kg	0.100	0.0970	97	80 - 120	2009-03-27
Ethylbenzene		mg/Kg	0.100	0.0939	94	80 - 120	2009-03-27
Xylene		mg/Kg	0.300	0.290	97	80 - 120	2009-03-27

Standard (CCV-1)

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.15	115	80 - 120	2009-03-27

Standard (CCV-2)

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.10	110	80 - 120	2009-03-27

Standard (CCV-3)

QC Batch: 58062 Date Analyzed: 2009-03-27 Analyzed By: MT

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.998	100	80 - 120	2009-03-27

191140 - 141

zia engineering & environmental consultants, llc

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Las Cruces, NM 88011
575-532-1526 u
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9032530

HTSA 001
~~000~~

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

PROJECT NO.:

PROJECT NAME: HELSTF TSA CMI

SAMPLER'S SIGNATURE: Bradley T. Davis

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX	MTBE	TPH GRO								REMARKS
3-23-09	0924	HTSA-0197-HVW-009-(16.0-17.0)	Soil	191140	4X	X	X	X								
3-23-09	0935	HTSA-0197-HVW-009-(19.0-20.0)	Soil	141	4X	X	X	X								
3-23-09	1205	HTSA-0197-HVW-010-(25.5-26.5)	Soil	142	4X	X	X	X								Strong hydrocarbon odor
3-24-09	1040	HTSA-0197-HVW-007-(20.0-22.0)	Soil	143	4	X	X	X								Strong hydrocarbon odor
3-24-09	1407	HTSA-0197-HVW-008-(30.0-31.0)	Soil	144	4	X	X	X								Strong hydrocarbon
3-24-09	1407	HTSA-0197-HVW-008-(30.0-31.0)-ms/msd	Soil	144	4	X	X	X								ms/msd Sample
3-24-09	1351	HTSA-0197-HVW-008-(20.0-22.0)	Soil	145	4	X	X	X								Strong hydrocarbon
3-24-09	1351	HTSA-0197-HVW-108-(20.0-22.0)	Soil	146	4	X	X	X								Strong hydrocarbon
3-24-09	1407	HTSA-0197-TB-001	Water	147	2	X	X									Trip Blank

PROJECT INFORMATION	SAMPLES RECEIVED	CF	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) Bradley T. Davis	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	& yes	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace - LBK
	GOOD CONDITION/CHILLED	yes	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 3-25-09 9:10
VIA: Fed Ex ~~Lab Courier~~	CONFORMS TO RECORD	4.0 3.7 Probe	SPECIAL INSTRUCTIONS/COMMENTS: ~~PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS~~		BTD Fed 832605785840

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: May 19, 2009

Work Order: 9051329

Project Name: HELSTF TSA Long-Term Groundwater HVW Wells

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195784	HTSA-0197-HVW-006-0509	water	2009-05-11	11:45	2009-05-11

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 20 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director

Case Narrative

Samples for project HELSTF TSA Long-Term Groundwater HVW Wells were received by TraceAnalysis, Inc. on 2009-05-11 and assigned to work order 9051329. Samples for work order 9051329 were received intact at a temperature of 13.0 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TDS	SM 2540C	50874	2009-05-14 at 14:14	59605	2009-05-14 at 14:14
TPH GRO	S 8015B	50749	2009-05-14 at 14:33	59464	2009-05-14 at 14:33
Volatiles	S 8260B	50788	2009-05-14 at 12:00	59509	2009-05-14 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9051329 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	El Paso				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59605	Date Analyzed:	2009-05-14	Analyzed By:	MD
Prep Batch:	50874	Sample Preparation:	2009-05-14	Prepared By:	MD

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**6060**	**6060**	<5.00	mg/L	1	5.00		5

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59464	Date Analyzed:	2009-05-14	Analyzed By:	ER
Prep Batch:	50749	Sample Preparation:	2009-05-14	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	J	**0.180**	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.106	mg/L	1	0.100	106	63.6 - 117

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.370	<1.00	<0.370	μg/L	1	0.370	1	0.37
Dichlorodifluoromethane	U	<0.450	<1.00	<0.450	μg/L	1	0.450	1	0.45
Chloromethane (methyl chloride)	U	<0.590	<1.00	<0.590	μg/L	1	0.590	1	0.59
Vinyl Chloride	U	<0.690	<1.00	<0.690	μg/L	1	0.690	1	0.69
Bromomethane (methyl bromide)	U	<0.750	<5.00	<0.750	μg/L	1	0.750	5	0.75
Chloroethane	U	<0.570	<1.00	<0.570	μg/L	1	0.570	1	0.57
Trichlorofluoromethane	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47

continued . . .

sample 195784 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Acetone	U	<1.75	<10.0	2.30	μg/L	1	1.75	10	1.75
Iodomethane (methyl iodide)	U	<0.320	<5.00	<0.320	μg/L	1	0.320	5	0.32
Carbon Disulfide	U	<0.250	<1.00	<0.250	μg/L	1	0.250	1	0.25
Acrylonitrile	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
2-Butanone (MEK)	U	<0.810	<5.00	<0.810	μg/L	1	0.810	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<0.790	<5.00	<0.790	μg/L	1	0.790	5	0.79
2-Hexanone	U	<0.510	<5.00	<0.510	μg/L	1	0.510	5	0.51
trans 1,4-Dichloro-2-butene	U	<0.490	<10.0	<0.490	μg/L	1	0.490	10	0.49
1,1-Dichloroethene	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Methylene chloride	U	<0.450	<5.00	<0.450	μg/L	1	0.450	5	0.45
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
trans-1,2-Dichloroethene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
1,1-Dichloroethane	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
cis-1,2-Dichloroethene	U	<0.200	<1.00	<0.200	μg/L	1	0.200	1	0.2
2,2-Dichloropropane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
1,2-Dichloroethane (EDC)	U	<0.350	<1.00	<0.350	μg/L	1	0.350	1	0.35
Chloroform		**1.59**	**1.59**	<0.270	μg/L	1	0.270	1	0.27
1,1,1-Trichloroethane	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
1,1-Dichloropropene	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Benzene		**11.2**	**11.2**	<0.240	μg/L	1	0.240	1	0.24
Carbon Tetrachloride	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dichloropropane	U	<0.360	<1.00	<0.360	μg/L	1	0.360	1	0.36
Trichloroethene (TCE)	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
Dibromomethane (methylene bromide)	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Bromodichloromethane		**1.52**	**1.52**	<0.280	μg/L	1	0.280	1	0.28
2-Chloroethyl vinyl ether	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
cis-1,3-Dichloropropene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
trans-1,3-Dichloropropene	U	<0.380	<1.00	<0.380	μg/L	1	0.380	1	0.38
Toluene		**5.60**	**5.60**	0.450	μg/L	1	0.270	1	0.27
1,1,2-Trichloroethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichloropropane	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Dibromochloromethane	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
1,2-Dibromoethane (EDB)	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Tetrachloroethene (PCE)	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
Chlorobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
1,1,1,2-Tetrachloroethane	U	<0.220	<1.00	<0.220	μg/L	1	0.220	1	0.22
Ethylbenzene	J	**0.580**	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene		**11.2**	**11.2**	<0.540	μg/L	1	0.540	1	0.54
Bromoform	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
Styrene	U	<0.210	<1.00	<0.210	μg/L	1	0.210	1	0.21
o-Xylene		**5.60**	**5.60**	<0.260	μg/L	1	0.260	1	0.26
1,1,2,2-Tetrachloroethane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
2-Chlorotoluene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
1,2,3-Trichloropropane	U	<0.430	<1.00	<0.430	μg/L	1	0.430	1	0.43
Isopropylbenzene		**1.13**	**1.13**	<0.260	μg/L	1	0.260	1	0.26

continued ...

sample 195784 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene		**1.87**	**1.87**	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene		**2.78**	**2.78**	<0.270	μg/L	1	0.270	1	0.27
tert-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2,4-Trimethylbenzene		**6.66**	**6.66**	<0.290	μg/L	1	0.290	1	0.29
1,4-Dichlorobenzene (para)	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
sec-Butylbenzene	J	**0.440**	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichlorobenzene (meta)	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
p-Isopropyltoluene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
4-Chlorotoluene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,2-Dichlorobenzene (ortho)	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
n-Butylbenzene	J	**0.440**	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dibromo-3-chloropropane	U	<0.680	<5.00	<0.680	μg/L	1	0.680	5	0.68
1,2,3-Trichlorobenzene	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
1,2,4-Trichlorobenzene	U	<0.340	<5.00	<0.340	μg/L	1	0.340	5	0.34
Naphthalene	J	**0.340**	<5.00	<0.280	μg/L	1	0.280	5	0.28
Hexachlorobutadiene	U	<0.540	<5.00	<0.540	μg/L	1	0.540	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.8	μg/L	1	50.0	102	75.3 - 131
Toluene-d8		48.5	μg/L	1	50.0	97	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.2	μg/L	1	50.0	96	83.8 - 108

Method Blank (1)

QC Batch: 59464 Date Analyzed: 2009-05-14 Analyzed By: ER
Prep Batch: 50749 QC Preparation: 2009-05-14 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0966	mg/L	1	0.100	97	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0986	mg/L	1	0.100	99	63.6 - 117

Method Blank (1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45
Chloromethane (methyl chloride)		<0.590	μg/L	0.59
Vinyl Chloride		<0.690	μg/L	0.69
Bromomethane (methyl bromide)		<0.750	μg/L	0.75
Chloroethane		<0.570	μg/L	0.57
Trichlorofluoromethane		<0.470	μg/L	0.47
Acetone		2.30	μg/L	1.75
Iodomethane (methyl iodide)		<0.320	μg/L	0.32
Carbon Disulfide		<0.250	μg/L	0.25
Acrylonitrile		<0.320	μg/L	0.32
2-Butanone (MEK)		<0.810	μg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	μg/L	0.79
2-Hexanone		<0.510	μg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	μg/L	0.49
1,1-Dichloroethene		<0.400	μg/L	0.4
Methylene chloride		<0.450	μg/L	0.45
MTBE		<0.400	μg/L	0.4
trans-1,2-Dichloroethene		<0.330	μg/L	0.33
1,1-Dichloroethane		<0.290	μg/L	0.29
cis-1,2-Dichloroethene		<0.200	μg/L	0.2
2,2-Dichloropropane		<0.420	μg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	μg/L	0.35
Chloroform		<0.270	μg/L	0.27
1,1,1-Trichloroethane		<0.230	μg/L	0.23
1,1-Dichloropropene		<0.340	μg/L	0.34
Benzene		<0.240	μg/L	0.24
Carbon Tetrachloride		<0.300	μg/L	0.3
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		0.450	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.8	μg/L	1	50.0	96	75.3 - 131
Toluene-d8		49.4	μg/L	1	50.0	99	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.0	μg/L	1	50.0	96	83.8 - 108

Method Blank (1)

QC Batch: 59605 Date Analyzed: 2009-05-14 Analyzed By: MD
Prep Batch: 50874 QC Preparation: 2009-05-14 Prepared By: MD

Parameter	Flag	Result	Units	Reporting Limits
Total Dissolved Solids		<5.00	mg/L	5

Duplicate (1) Duplicated Sample: 195784

QC Batch: 59605 Date Analyzed: 2009-05-14 Analyzed By: MD
Prep Batch: 50874 QC Preparation: 2009-05-14 Prepared By: MD

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	6030	6060	mg/L	1	0	10

Laboratory Control Spike (LCS-1)

QC Batch: 59464 Date Analyzed: 2009-05-14 Analyzed By: ER
Prep Batch: 50749 QC Preparation: 2009-05-14 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	0.961	mg/L	1	1.00	<0.152	96	78.6 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	0.981	mg/L	1	1.00	<0.152	98	78.6 - 123	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0960	0.0963	mg/L	1	0.100	96	96	79.3 - 124
4-Bromofluorobenzene (4-BFB)	0.0996	0.0985	mg/L	1	0.100	100	98	80.9 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	47.7	µg/L	1	50.0	<0.370	95	80.2 - 127
Dichlorodifluoromethane	30.7	µg/L	1	50.0	<0.450	61	37.7 - 159
Chloromethane (methyl chloride)	41.1	µg/L	1	50.0	<0.590	82	46.1 - 146
Vinyl Chloride	39.4	µg/L	1	50.0	<0.690	79	49.9 - 145
Bromomethane (methyl bromide)	43.4	µg/L	1	50.0	<0.750	87	48.1 - 144
Chloroethane	43.7	µg/L	1	50.0	<0.570	87	50.1 - 138
Trichlorofluoromethane	41.1	µg/L	1	50.0	<0.470	82	54.8 - 151
Acetone	32.8	µg/L	1	50.0	2.3	66	19.1 - 189
Iodomethane (methyl iodide)	48.9	µg/L	1	50.0	<0.320	98	77.6 - 134
Carbon Disulfide	49.0	µg/L	1	50.0	<0.250	98	67.9 - 138
Acrylonitrile	44.2	µg/L	1	50.0	<0.320	88	76.7 - 131
2-Butanone (MEK)	33.4	µg/L	1	50.0	<0.810	67	39.9 - 171
4-Methyl-2-pentanone (MIBK)	46.6	µg/L	1	50.0	<0.790	93	68.6 - 133
2-Hexanone	35.8	µg/L	1	50.0	<0.510	72	43.4 - 167
trans 1,4-Dichloro-2-butene	51.3	µg/L	1	50.0	<0.490	103	40.2 - 160
1,1-Dichloroethene	45.3	µg/L	1	50.0	<0.400	91	77 - 127

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Methylene chloride	42.7	μg/L	1	50.0	<0.450	85	73.7 - 133
MTBE	48.8	μg/L	1	50.0	<0.400	98	81.3 - 125
trans-1,2-Dichloroethene	47.1	μg/L	1	50.0	<0.330	94	75.9 - 131
1,1-Dichloroethane	48.5	μg/L	1	50.0	<0.290	97	73.3 - 135
cis-1,2-Dichloroethene	47.5	μg/L	1	50.0	<0.200	95	76.7 - 132
2,2-Dichloropropane	55.7	μg/L	1	50.0	<0.420	111	57.1 - 147
1,2-Dichloroethane (EDC)	49.0	μg/L	1	50.0	<0.350	98	75.5 - 129
Chloroform	47.2	μg/L	1	50.0	<0.270	94	75.8 - 129
1,1,1-Trichloroethane	50.2	μg/L	1	50.0	<0.230	100	80.2 - 126
1,1-Dichloropropene	49.9	μg/L	1	50.0	<0.340	100	89.2 - 120
Benzene	47.9	μg/L	1	50.0	<0.240	96	86.6 - 116
Carbon Tetrachloride	52.1	μg/L	1	50.0	<0.300	104	76.6 - 133
1,2-Dichloropropane	48.0	μg/L	1	50.0	<0.360	96	85.6 - 121
Trichloroethene (TCE)	48.0	μg/L	1	50.0	<0.300	96	80.2 - 127
Dibromomethane (methylene bromide)	47.9	μg/L	1	50.0	<0.470	96	88.7 - 118
Bromodichloromethane	50.8	μg/L	1	50.0	<0.280	102	82.4 - 129
2-Chloroethyl vinyl ether	26.2	μg/L	1	50.0	<0.330	52	12.4 - 157
cis-1,3-Dichloropropene	52.2	μg/L	1	50.0	<0.330	104	89 - 121
trans-1,3-Dichloropropene	51.2	μg/L	1	50.0	<0.380	102	85.3 - 125
Toluene	46.9	μg/L	1	50.0	0.45	94	86.6 - 117
1,1,2-Trichloroethane	49.0	μg/L	1	50.0	<0.280	98	87.5 - 117
1,3-Dichloropropane	49.7	μg/L	1	50.0	<0.270	99	87.9 - 118
Dibromochloromethane	55.2	μg/L	1	50.0	<0.320	110	69.4 - 135
1,2-Dibromoethane (EDB)	49.9	μg/L	1	50.0	<0.340	100	88.3 - 121
Tetrachloroethene (PCE)	41.2	μg/L	1	50.0	<0.280	82	49.4 - 137
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	86.9 - 116
1,1,1,2-Tetrachloroethane	53.6	μg/L	1	50.0	<0.220	107	83.7 - 125
Ethylbenzene	50.5	μg/L	1	50.0	<0.260	101	88.4 - 115
m,p-Xylene	103	μg/L	1	100	<0.540	103	86.7 - 116
Bromoform	52.4	μg/L	1	50.0	<0.230	105	71.8 - 119
Styrene	53.5	μg/L	1	50.0	<0.210	107	86.4 - 117
o-Xylene	52.8	μg/L	1	50.0	<0.260	106	86.4 - 120
1,1,2,2-Tetrachloroethane	54.1	μg/L	1	50.0	<0.420	108	71 - 131
2-Chlorotoluene	51.1	μg/L	1	50.0	<0.240	102	85 - 120
1,2,3-Trichloropropane	56.8	μg/L	1	50.0	<0.430	114	78.1 - 137
Isopropylbenzene	54.1	μg/L	1	50.0	<0.260	108	84 - 127
Bromobenzene	51.0	μg/L	1	50.0	<0.260	102	84.2 - 121
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	81.1 - 122
1,3,5-Trimethylbenzene	52.0	μg/L	1	50.0	<0.270	104	84.7 - 121
tert-Butylbenzene	54.7	μg/L	1	50.0	<0.300	109	82 - 122
1,2,4-Trimethylbenzene	53.2	μg/L	1	50.0	<0.290	106	84.6 - 124
1,4-Dichlorobenzene (para)	48.0	μg/L	1	50.0	<0.240	96	84.6 - 114
sec-Butylbenzene	53.7	μg/L	1	50.0	<0.280	107	81.7 - 124
1,3-Dichlorobenzene (meta)	48.8	μg/L	1	50.0	<0.310	98	85.6 - 116
p-Isopropyltoluene	54.3	μg/L	1	50.0	<0.330	109	81.4 - 124
4-Chlorotoluene	50.7	μg/L	1	50.0	<0.290	101	85.8 - 121
1,2-Dichlorobenzene (ortho)	48.9	μg/L	1	50.0	<0.270	98	86.5 - 118

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
n-Butylbenzene	54.2	μg/L	1	50.0	<0.300	108	81.2 - 129
1,2-Dibromo-3-chloropropane	55.3	μg/L	1	50.0	<0.680	111	71.7 - 128
1,2,3-Trichlorobenzene	51.5	μg/L	1	50.0	<0.330	103	79.5 - 126
1,2,4-Trichlorobenzene	52.7	μg/L	1	50.0	<0.340	105	64.5 - 126
Naphthalene	52.1	μg/L	1	50.0	<0.280	104	67.7 - 127
Hexachlorobutadiene	54.0	μg/L	1	50.0	<0.540	108	76.7 - 134

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	48.2	μg/L	1	50.0	<0.370	96	80.2 - 127	1	20
Dichlorodifluoromethane	31.1	μg/L	1	50.0	<0.450	62	37.7 - 159	1	20
Chloromethane (methyl chloride)	42.7	μg/L	1	50.0	<0.590	85	46.1 - 146	4	20
Vinyl Chloride	40.4	μg/L	1	50.0	<0.690	81	49.9 - 145	2	20
Bromomethane (methyl bromide)	47.7	μg/L	1	50.0	<0.750	95	48.1 - 144	9	20
Chloroethane	46.3	μg/L	1	50.0	<0.570	93	50.1 - 138	6	20
Trichlorofluoromethane	43.7	μg/L	1	50.0	<0.470	87	54.8 - 151	6	20
Acetone	32.1	μg/L	1	50.0	2.3	64	19.1 - 189	2	20
Iodomethane (methyl iodide)	50.6	μg/L	1	50.0	<0.320	101	77.6 - 134	3	20
Carbon Disulfide	49.0	μg/L	1	50.0	<0.250	98	67.9 - 138	0	20
Acrylonitrile	45.2	μg/L	1	50.0	<0.320	90	76.7 - 131	2	20
2-Butanone (MEK)	34.9	μg/L	1	50.0	<0.810	70	39.9 - 171	4	20
4-Methyl-2-pentanone (MIBK)	48.8	μg/L	1	50.0	<0.790	98	68.6 - 133	5	20
2-Hexanone	37.6	μg/L	1	50.0	<0.510	75	43.4 - 167	5	20
trans 1,4-Dichloro-2-butene	52.3	μg/L	1	50.0	<0.490	105	40.2 - 160	2	20
1,1-Dichloroethene	44.9	μg/L	1	50.0	<0.400	90	77 - 127	1	20
Methylene chloride	43.1	μg/L	1	50.0	<0.450	86	73.7 - 133	1	20
MTBE	48.4	μg/L	1	50.0	<0.400	97	81.3 - 125	1	20
trans-1,2-Dichloroethene	47.6	μg/L	1	50.0	<0.330	95	75.9 - 131	1	20
1,1-Dichloroethane	47.9	μg/L	1	50.0	<0.290	96	73.3 - 135	1	20
cis-1,2-Dichloroethene	48.0	μg/L	1	50.0	<0.200	96	76.7 - 132	1	20
2,2-Dichloropropane	54.7	μg/L	1	50.0	<0.420	109	57.1 - 147	2	20
1,2-Dichloroethane (EDC)	49.8	μg/L	1	50.0	<0.350	100	75.5 - 129	2	20
Chloroform	47.9	μg/L	1	50.0	<0.270	96	75.8 - 129	2	20
1,1,1-Trichloroethane	51.6	μg/L	1	50.0	<0.230	103	80.2 - 126	3	20
1,1-Dichloropropene	49.9	μg/L	1	50.0	<0.340	100	89.2 - 120	0	20
Benzene	48.1	μg/L	1	50.0	<0.240	96	86.6 - 116	0	20
Carbon Tetrachloride	53.7	μg/L	1	50.0	<0.300	107	76.6 - 133	3	20
1,2-Dichloropropane	49.0	μg/L	1	50.0	<0.360	98	85.6 - 121	2	20
Trichloroethene (TCE)	48.9	μg/L	1	50.0	<0.300	98	80.2 - 127	2	20
Dibromomethane (methylene bromide)	48.5	μg/L	1	50.0	<0.470	97	88.7 - 118	1	20
Bromodichloromethane	50.8	μg/L	1	50.0	<0.280	102	82.4 - 129	0	20
2-Chloroethyl vinyl ether	29.5	μg/L	1	50.0	<0.330	59	12.4 - 157	12	20
cis-1,3-Dichloropropene	52.8	μg/L	1	50.0	<0.330	106	89 - 121	1	20
trans-1,3-Dichloropropene	53.2	μg/L	1	50.0	<0.380	106	85.3 - 125	4	20
Toluene	47.3	μg/L	1	50.0	0.45	95	86.6 - 117	1	20
1,1,2-Trichloroethane	48.3	μg/L	1	50.0	<0.280	97	87.5 - 117	1	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,3-Dichloropropane	49.7	µg/L	1	50.0	<0.270	99	87.9 - 118	0	20
Dibromochloromethane	55.2	µg/L	1	50.0	<0.320	110	69.4 - 135	0	20
1,2-Dibromoethane (EDB)	50.4	µg/L	1	50.0	<0.340	101	88.3 - 121	1	20
Tetrachloroethene (PCE)	45.9	µg/L	1	50.0	<0.280	92	49.4 - 137	11	20
Chlorobenzene	49.0	µg/L	1	50.0	<0.260	98	86.9 - 116	0	20
1,1,1,2-Tetrachloroethane	52.6	µg/L	1	50.0	<0.220	105	83.7 - 125	2	20
Ethylbenzene	50.0	µg/L	1	50.0	<0.260	100	88.4 - 115	1	20
m,p-Xylene	102	µg/L	1	100	<0.540	102	86.7 - 116	1	20
Bromoform	52.7	µg/L	1	50.0	<0.230	105	71.8 - 119	1	20
Styrene	53.0	µg/L	1	50.0	<0.210	106	86.4 - 117	1	20
o-Xylene	52.2	µg/L	1	50.0	<0.260	104	86.4 - 120	1	20
1,1,2,2-Tetrachloroethane	52.7	µg/L	1	50.0	<0.420	105	71 - 131	3	20
2-Chlorotoluene	50.9	µg/L	1	50.0	<0.240	102	85 - 120	0	20
1,2,3-Trichloropropane	56.5	µg/L	1	50.0	<0.430	113	78.1 - 137	0	20
Isopropylbenzene	53.9	µg/L	1	50.0	<0.260	108	84 - 127	0	20
Bromobenzene	48.4	µg/L	1	50.0	<0.260	97	84.2 - 121	5	20
n-Propylbenzene	51.6	µg/L	1	50.0	<0.310	103	81.1 - 122	0	20
1,3,5-Trimethylbenzene	51.9	µg/L	1	50.0	<0.270	104	84.7 - 121	0	20
tert-Butylbenzene	53.8	µg/L	1	50.0	<0.300	108	82 - 122	2	20
1,2,4-Trimethylbenzene	52.3	µg/L	1	50.0	<0.290	105	84.6 - 124	2	20
1,4-Dichlorobenzene (para)	47.7	µg/L	1	50.0	<0.240	95	84.6 - 114	1	20
sec-Butylbenzene	53.5	µg/L	1	50.0	<0.280	107	81.7 - 124	0	20
1,3-Dichlorobenzene (meta)	49.2	µg/L	1	50.0	<0.310	98	85.6 - 116	1	20
p-Isopropyltoluene	54.1	µg/L	1	50.0	<0.330	108	81.4 - 124	0	20
4-Chlorotoluene	50.7	µg/L	1	50.0	<0.290	101	85.8 - 121	0	20
1,2-Dichlorobenzene (ortho)	49.1	µg/L	1	50.0	<0.270	98	86.5 - 118	0	20
n-Butylbenzene	54.2	µg/L	1	50.0	<0.300	108	81.2 - 129	0	20
1,2-Dibromo-3-chloropropane	56.4	µg/L	1	50.0	<0.680	113	71.7 - 128	2	20
1,2,3-Trichlorobenzene	52.4	µg/L	1	50.0	<0.330	105	79.5 - 126	2	20
1,2,4-Trichlorobenzene	53.3	µg/L	1	50.0	<0.340	107	64.5 - 126	1	20
Naphthalene	52.7	µg/L	1	50.0	<0.280	105	67.7 - 127	1	20
Hexachlorobutadiene	55.3	µg/L	1	50.0	<0.540	111	76.7 - 134	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	47.0	47.4	µg/L	1	50.0	94	95	77.3 - 126
Toluene-d8	49.7	48.9	µg/L	1	50.0	99	98	91.9 - 108
4-Bromofluorobenzene (4-BFB)	51.6	50.8	µg/L	1	50.0	103	102	93 - 107

Matrix Spike (MS-1) Spiked Sample: 195784

QC Batch:	59464	Date Analyzed:	2009-05-14	Analyzed By:	ER
Prep Batch:	50749	QC Preparation:	2009-05-14	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	0.761	mg/L	1	1.00	0.18	58	44.6 - 142

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO [1]	1.10	mg/L	1	1.00	0.18	92	44.6 - 142	36	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) [2]	0.0386	0.0707	mg/L	1	0.1	39	71	57.8 - 132
4-Bromofluorobenzene (4-BFB) [3]	0.0416	0.0719	mg/L	1	0.1	42	72	69.4 - 128

Matrix Spike (MS-1) Spiked Sample: 195743

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	46.0	µg/L	1	50.0	<0.370	92	56.3 - 153
Dichlorodifluoromethane	19.0	µg/L	1	50.0	<0.450	38	33.3 - 142
Chloromethane (methyl chloride)	36.8	µg/L	1	50.0	<0.590	74	39.6 - 149
Vinyl Chloride	34.4	µg/L	1	50.0	<0.690	69	33.6 - 159
Bromomethane (methyl bromide)	46.8	µg/L	1	50.0	<0.750	94	35.2 - 161
Chloroethane	44.7	µg/L	1	50.0	<0.570	89	28.1 - 169
Trichlorofluoromethane	34.8	µg/L	1	50.0	<0.470	70	34.7 - 158
Acetone	25.8	µg/L	1	50.0	<1.75	52	10 - 123
Iodomethane (methyl iodide)	45.9	µg/L	1	50.0	<0.320	92	60.9 - 143
Carbon Disulfide	47.1	µg/L	1	50.0	<0.250	94	41.3 - 162
Acrylonitrile	41.1	µg/L	1	50.0	<0.320	82	37.4 - 188
2-Butanone (MEK)	27.1	µg/L	1	50.0	<0.810	54	34.8 - 143
4-Methyl-2-pentanone (MIBK)	43.6	µg/L	1	50.0	<0.790	87	57.3 - 153
2-Hexanone	32.7	µg/L	1	50.0	<0.510	65	37 - 159
trans 1,4-Dichloro-2-butene	40.2	µg/L	1	50.0	<0.490	80	10 - 182
1,1-Dichloroethene	44.9	µg/L	1	50.0	<0.400	90	44.8 - 153
Methylene chloride	40.9	µg/L	1	50.0	<0.450	82	48.6 - 161
MTBE	42.5	µg/L	1	50.0	<0.400	85	45.3 - 173
trans-1,2-Dichloroethene	44.8	µg/L	1	50.0	<0.330	90	45.4 - 164
1,1-Dichloroethane	44.5	µg/L	1	50.0	<0.290	89	43.2 - 168
cis-1,2-Dichloroethene	44.7	µg/L	1	50.0	<0.200	89	48.8 - 163
2,2-Dichloropropane	38.3	µg/L	1	50.0	<0.420	77	10 - 160
1,2-Dichloroethane (EDC)	46.5	µg/L	1	50.0	1.45	90	50.6 - 164
Chloroform	44.3	µg/L	1	50.0	<0.270	89	44.7 - 162

continued ...

[1] Matrix spike RPD out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[2] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.
[3] Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,1,1-Trichloroethane	46.5	µg/L	1	50.0	<0.230	93	49.4 - 158
1,1-Dichloropropene	44.4	µg/L	1	50.0	<0.340	89	50.9 - 156
Benzene	43.7	µg/L	1	50.0	<0.240	87	59.1 - 151
Carbon Tetrachloride	47.6	µg/L	1	50.0	<0.300	95	49.2 - 155
1,2-Dichloropropane	44.5	µg/L	1	50.0	<0.360	89	50.1 - 158
Trichloroethene (TCE)	43.1	µg/L	1	50.0	<0.300	86	66 - 130
Dibromomethane (methylene bromide)	44.5	µg/L	1	50.0	<0.470	89	60.1 - 146
Bromodichloromethane	45.7	µg/L	1	50.0	<0.280	91	54.8 - 157
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	44.4	µg/L	1	50.0	<0.330	89	54.6 - 141
trans-1,3-Dichloropropene	45.0	µg/L	1	50.0	<0.380	90	54.2 - 143
Toluene	43.0	µg/L	1	50.0	0.38	85	61.7 - 143
1,1,2-Trichloroethane	45.4	µg/L	1	50.0	<0.280	91	59.4 - 145
1,3-Dichloropropane	45.3	µg/L	1	50.0	<0.270	91	61.4 - 149
Dibromochloromethane	49.2	µg/L	1	50.0	<0.320	98	63.8 - 136
1,2-Dibromoethane (EDB)	45.5	µg/L	1	50.0	<0.340	91	66.2 - 140
Tetrachloroethene (PCE)	25.9	µg/L	1	50.0	<0.280	52	42.6 - 72.8
Chlorobenzene	45.2	µg/L	1	50.0	<0.260	90	67.2 - 133
1,1,1,2-Tetrachloroethane	47.4	µg/L	1	50.0	<0.220	95	59.9 - 142
Ethylbenzene	44.9	µg/L	1	50.0	<0.260	90	59.2 - 144
m,p-Xylene	91.5	µg/L	1	100	<0.540	92	59.6 - 144
Bromoform	44.7	µg/L	1	50.0	<0.230	89	56.2 - 122
Styrene	47.1	µg/L	1	50.0	<0.210	94	10 - 203
o-Xylene	47.3	µg/L	1	50.0	<0.260	95	59.9 - 151
1,1,2,2-Tetrachloroethane	51.3	µg/L	1	50.0	<0.420	103	57.9 - 160
2-Chlorotoluene	44.8	µg/L	1	50.0	<0.240	90	56.8 - 150
1,2,3-Trichloropropane	51.2	µg/L	1	50.0	<0.430	102	47.7 - 156
Isopropylbenzene	47.3	µg/L	1	50.0	<0.260	95	54.8 - 150
Bromobenzene	44.5	µg/L	1	50.0	<0.260	89	57.5 - 144
n-Propylbenzene	45.4	µg/L	1	50.0	<0.310	91	64.6 - 141
1,3,5-Trimethylbenzene	45.4	µg/L	1	50.0	<0.270	91	63.9 - 140
tert-Butylbenzene	47.3	µg/L	1	50.0	<0.300	95	61.5 - 142
1,2,4-Trimethylbenzene	46.0	µg/L	1	50.0	<0.290	92	45.5 - 157
1,4-Dichlorobenzene (para)	43.2	µg/L	1	50.0	<0.240	86	69.8 - 126
sec-Butylbenzene	45.8	µg/L	1	50.0	<0.280	92	61.9 - 144
1,3-Dichlorobenzene (meta)	44.4	µg/L	1	50.0	<0.310	89	69.4 - 131
p-Isopropyltoluene	46.7	µg/L	1	50.0	<0.330	93	59.2 - 141
4-Chlorotoluene	44.3	µg/L	1	50.0	<0.290	89	68.6 - 139
1,2-Dichlorobenzene (ortho)	44.3	µg/L	1	50.0	<0.270	89	70.4 - 132
n-Butylbenzene	45.0	µg/L	1	50.0	<0.300	90	55.7 - 146
1,2-Dibromo-3-chloropropane	47.6	µg/L	1	50.0	<0.680	95	59.6 - 136
1,2,3-Trichlorobenzene	43.4	µg/L	1	50.0	<0.330	87	54.2 - 130
1,2,4-Trichlorobenzene	43.5	µg/L	1	50.0	<0.340	87	49 - 123
Naphthalene	45.5	µg/L	1	50.0	<0.280	91	56.4 - 131
Hexachlorobutadiene	41.2	µg/L	1	50.0	<0.540	82	24.8 - 144

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	49.9	µg/L	1	50.0	<0.370	100	56.3 - 153	8	20
Dichlorodifluoromethane	21.8	µg/L	1	50.0	<0.450	44	33.3 - 142	14	20
Chloromethane (methyl chloride)	39.8	µg/L	1	50.0	<0.590	80	39.6 - 149	8	20
Vinyl Chloride	37.8	µg/L	1	50.0	<0.690	76	33.6 - 159	9	20
Bromomethane (methyl bromide)	47.2	µg/L	1	50.0	<0.750	94	35.2 - 161	1	20
Chloroethane	45.6	µg/L	1	50.0	<0.570	91	28.1 - 169	2	20
Trichlorofluoromethane	37.6	µg/L	1	50.0	<0.470	75	34.7 - 158	8	20
Acetone	28.2	µg/L	1	50.0	<1.75	56	10 - 123	9	20
Iodomethane (methyl iodide)	49.3	µg/L	1	50.0	<0.320	99	60.9 - 143	7	20
Carbon Disulfide	48.8	µg/L	1	50.0	<0.250	98	41.3 - 162	4	20
Acrylonitrile	46.2	µg/L	1	50.0	<0.320	92	37.4 - 188	12	20
2-Butanone (MEK)	30.7	µg/L	1	50.0	<0.810	61	34.8 - 143	12	20
4-Methyl-2-pentanone (MIBK)	49.4	µg/L	1	50.0	<0.790	99	57.3 - 153	12	20
2-Hexanone	36.3	µg/L	1	50.0	<0.510	73	37 - 159	10	20
trans 1,4-Dichloro-2-butene	45.6	µg/L	1	50.0	<0.490	91	10 - 182	13	20
1,1-Dichloroethene	49.4	µg/L	1	50.0	<0.400	99	44.8 - 153	10	20
Methylene chloride	45.4	µg/L	1	50.0	<0.450	91	48.6 - 161	10	20
MTBE	47.6	µg/L	1	50.0	<0.400	95	45.3 - 173	11	20
trans-1,2-Dichloroethene	48.5	µg/L	1	50.0	<0.330	97	45.4 - 164	8	20
1,1-Dichloroethane	48.8	µg/L	1	50.0	<0.290	98	43.2 - 168	9	20
cis-1,2-Dichloroethene	48.8	µg/L	1	50.0	<0.200	98	48.8 - 163	9	20
2,2-Dichloropropane	41.0	µg/L	1	50.0	<0.420	82	10 - 160	7	20
1,2-Dichloroethane (EDC)	50.8	µg/L	1	50.0	1.45	99	50.6 - 164	9	20
Chloroform	48.2	µg/L	1	50.0	<0.270	96	44.7 - 162	8	20
1,1,1-Trichloroethane	50.6	µg/L	1	50.0	<0.230	101	49.4 - 158	8	20
1,1-Dichloropropene	48.7	µg/L	1	50.0	<0.340	97	50.9 - 156	9	20
Benzene	48.4	µg/L	1	50.0	<0.240	97	59.1 - 151	10	20
Carbon Tetrachloride	52.2	µg/L	1	50.0	<0.300	104	49.2 - 155	9	20
1,2-Dichloropropane	48.8	µg/L	1	50.0	<0.360	98	50.1 - 158	9	20
Trichloroethene (TCE)	47.8	µg/L	1	50.0	<0.300	96	66 - 130	10	20
Dibromomethane (methylene bromide)	48.6	µg/L	1	50.0	<0.470	97	60.1 - 146	9	20
Bromodichloromethane	50.6	µg/L	1	50.0	<0.280	101	54.8 - 157	10	20
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene	49.2	µg/L	1	50.0	<0.330	98	54.6 - 141	10	20
trans-1,3-Dichloropropene	49.4	µg/L	1	50.0	<0.380	99	54.2 - 143	9	20
Toluene	46.6	µg/L	1	50.0	0.38	92	61.7 - 143	8	20
1,1,2-Trichloroethane	50.5	µg/L	1	50.0	<0.280	101	59.4 - 145	11	20
1,3-Dichloropropane	50.1	µg/L	1	50.0	<0.270	100	61.4 - 149	10	20
Dibromochloromethane	55.2	µg/L	1	50.0	<0.320	110	63.8 - 136	12	20
1,2-Dibromoethane (EDB)	51.1	µg/L	1	50.0	<0.340	102	66.2 - 140	12	20
Tetrachloroethene (PCE)	28.7	µg/L	1	50.0	<0.280	57	42.6 - 72.8	10	20
Chlorobenzene	49.4	µg/L	1	50.0	<0.260	99	67.2 - 133	9	20
1,1,1,2-Tetrachloroethane	53.3	µg/L	1	50.0	<0.220	107	59.9 - 142	12	20
Ethylbenzene	49.8	µg/L	1	50.0	<0.260	100	59.2 - 144	10	20
m,p-Xylene	101	µg/L	1	100	<0.540	101	59.6 - 144	10	20
Bromoform	50.8	µg/L	1	50.0	<0.230	102	56.2 - 122	13	20
Styrene	52.8	µg/L	1	50.0	<0.210	106	10 - 203	11	20
o-Xylene	52.9	µg/L	1	50.0	<0.260	106	59.9 - 151	11	20

continued ...

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	57.4	µg/L	1	50.0	<0.420	115	57.9 - 160	11	20
2-Chlorotoluene	49.4	µg/L	1	50.0	<0.240	99	56.8 - 150	10	20
1,2,3-Trichloropropane	56.7	µg/L	1	50.0	<0.430	113	47.7 - 156	10	20
Isopropylbenzene	51.7	µg/L	1	50.0	<0.260	103	54.8 - 150	9	20
Bromobenzene	49.8	µg/L	1	50.0	<0.260	100	57.5 - 144	11	20
n-Propylbenzene	50.0	µg/L	1	50.0	<0.310	100	64.6 - 141	10	20
1,3,5-Trimethylbenzene	50.0	µg/L	1	50.0	<0.270	100	63.9 - 140	10	20
tert-Butylbenzene	52.6	µg/L	1	50.0	<0.300	105	61.5 - 142	11	20
1,2,4-Trimethylbenzene	51.2	µg/L	1	50.0	<0.290	102	45.5 - 157	11	20
1,4-Dichlorobenzene (para)	47.1	µg/L	1	50.0	<0.240	94	69.8 - 126	9	20
sec-Butylbenzene	50.7	µg/L	1	50.0	<0.280	101	61.9 - 144	10	20
1,3-Dichlorobenzene (meta)	48.7	µg/L	1	50.0	<0.310	97	69.4 - 131	9	20
p-Isopropyltoluene	51.4	µg/L	1	50.0	<0.330	103	59.2 - 141	10	20
4-Chlorotoluene	48.5	µg/L	1	50.0	<0.290	97	68.6 - 139	9	20
1,2-Dichlorobenzene (ortho)	48.1	µg/L	1	50.0	<0.270	96	70.4 - 132	8	20
n-Butylbenzene	50.0	µg/L	1	50.0	<0.300	100	55.7 - 146	10	20
1,2-Dibromo-3-chloropropane	54.2	µg/L	1	50.0	<0.680	108	59.6 - 136	13	20
1,2,3-Trichlorobenzene	49.9	µg/L	1	50.0	<0.330	100	54.2 - 130	14	20
1,2,4-Trichlorobenzene	49.6	µg/L	1	50.0	<0.340	99	49 - 123	13	20
Naphthalene	51.6	µg/L	1	50.0	<0.280	103	56.4 - 131	13	20
Hexachlorobutadiene	47.6	µg/L	1	50.0	<0.540	95	24.8 - 144	14	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	50.1	49.3	µg/L	1	50	100	99	82.8 - 123
Toluene-d8	49.0	48.9	µg/L	1	50	98	98	92.3 - 106
4-Bromofluorobenzene (4-BFB)	51.4	50.8	µg/L	1	50	103	102	93.2 - 108

Standard (CCV-1)

QC Batch: 59464 Date Analyzed: 2009-05-14 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	0.993	99	80 - 120	2009-05-14

Standard (CCV-2)

QC Batch: 59464 Date Analyzed: 2009-05-14 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-05-14

Standard (CCV-1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	43.3	87	80 - 120	2009-05-14
Dichlorodifluoromethane	[4]	µg/L	50.0	28.8	58	80 - 120	2009-05-14
Chloromethane (methyl chloride)	[5]	µg/L	50.0	39.3	79	80 - 120	2009-05-14
Vinyl Chloride	[6]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
Bromomethane (methyl bromide)		µg/L	50.0	43.6	87	80 - 120	2009-05-14
Chloroethane		µg/L	50.0	42.9	86	80 - 120	2009-05-14
Trichlorofluoromethane	[7]	µg/L	50.0	39.0	78	80 - 120	2009-05-14
Acetone	[8]	µg/L	50.0	29.0	58	80 - 120	2009-05-14
Iodomethane (methyl iodide)		µg/L	50.0	47.0	94	80 - 120	2009-05-14
Carbon Disulfide		µg/L	50.0	46.2	92	80 - 120	2009-05-14
Acrylonitrile		µg/L	50.0	40.8	82	80 - 120	2009-05-14
2-Butanone (MEK)	[9]	µg/L	50.0	29.8	60	80 - 120	2009-05-14
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	42.7	85	80 - 120	2009-05-14
2-Hexanone	[10]	µg/L	50.0	33.1	66	80 - 120	2009-05-14
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.9	94	80 - 120	2009-05-14
1,1-Dichloroethene		µg/L	50.0	41.1	82	80 - 120	2009-05-14
Methylene chloride	[11]	µg/L	50.0	39.7	79	80 - 120	2009-05-14
MTBE		µg/L	50.0	44.5	89	80 - 120	2009-05-14
trans-1,2-Dichloroethene		µg/L	50.0	43.6	87	80 - 120	2009-05-14
1,1-Dichloroethane		µg/L	50.0	44.4	89	80 - 120	2009-05-14
cis-1,2-Dichloroethene		µg/L	50.0	43.7	87	80 - 120	2009-05-14
2,2-Dichloropropane		µg/L	50.0	52.1	104	80 - 120	2009-05-14
1,2-Dichloroethane (EDC)		µg/L	50.0	44.8	90	80 - 120	2009-05-14
Chloroform		µg/L	50.0	43.6	87	80 - 120	2009-05-14
1,1,1-Trichloroethane		µg/L	50.0	46.8	94	80 - 120	2009-05-14
1,1-Dichloropropene		µg/L	50.0	45.8	92	80 - 120	2009-05-14
Benzene		µg/L	50.0	44.1	88	80 - 120	2009-05-14
Carbon Tetrachloride		µg/L	50.0	48.5	97	80 - 120	2009-05-14
1,2-Dichloropropane		µg/L	50.0	44.6	89	80 - 120	2009-05-14
Trichloroethene (TCE)		µg/L	50.0	43.6	87	80 - 120	2009-05-14
Dibromomethane (methylene bromide)		µg/L	50.0	44.0	88	80 - 120	2009-05-14
Bromodichloromethane		µg/L	50.0	46.1	92	80 - 120	2009-05-14
2-Chloroethyl vinyl ether	[12]	µg/L	50.0	25.8	52	80 - 120	2009-05-14
cis-1,3-Dichloropropene		µg/L	50.0	48.3	97	80 - 120	2009-05-14
trans-1,3-Dichloropropene		µg/L	50.0	48.0	96	80 - 120	2009-05-14
Toluene		µg/L	50.0	43.5	87	80 - 120	2009-05-14

continued ...

[4] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[5] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[6] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[7] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[8] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[9] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[10] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[11] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[12] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,1,2-Trichloroethane		µg/L	50.0	44.5	89	80 - 120	2009-05-14
1,3-Dichloropropane		µg/L	50.0	45.6	91	80 - 120	2009-05-14
Dibromochloromethane		µg/L	50.0	50.2	100	80 - 120	2009-05-14
1,2-Dibromoethane (EDB)		µg/L	50.0	45.3	91	80 - 120	2009-05-14
Tetrachloroethene (PCE)	[13]	µg/L	50.0	32.6	65	80 - 120	2009-05-14
Chlorobenzene		µg/L	50.0	45.2	90	80 - 120	2009-05-14
1,1,1,2-Tetrachloroethane		µg/L	50.0	48.1	96	80 - 120	2009-05-14
Ethylbenzene		µg/L	50.0	46.4	93	80 - 120	2009-05-14
m,p-Xylene		µg/L	100	94.3	94	80 - 120	2009-05-14
Bromoform		µg/L	50.0	46.8	94	80 - 120	2009-05-14
Styrene		µg/L	50.0	48.7	97	80 - 120	2009-05-14
o-Xylene		µg/L	50.0	48.1	96	80 - 120	2009-05-14
1,1,2,2-Tetrachloroethane		µg/L	50.0	48.8	98	80 - 120	2009-05-14
2-Chlorotoluene		µg/L	50.0	46.9	94	80 - 120	2009-05-14
1,2,3-Trichloropropane		µg/L	50.0	50.5	101	80 - 120	2009-05-14
Isopropylbenzene		µg/L	50.0	49.2	98	80 - 120	2009-05-14
Bromobenzene		µg/L	50.0	44.2	88	80 - 120	2009-05-14
n-Propylbenzene		µg/L	50.0	47.6	95	80 - 120	2009-05-14
1,3,5-Trimethylbenzene		µg/L	50.0	47.7	95	80 - 120	2009-05-14
tert-Butylbenzene		µg/L	50.0	49.9	100	80 - 120	2009-05-14
1,2,4-Trimethylbenzene		µg/L	50.0	49.0	98	80 - 120	2009-05-14
1,4-Dichlorobenzene (para)		µg/L	50.0	43.9	88	80 - 120	2009-05-14
sec-Butylbenzene		µg/L	50.0	48.9	98	80 - 120	2009-05-14
1,3-Dichlorobenzene (meta)		µg/L	50.0	45.3	91	80 - 120	2009-05-14
p-Isopropyltoluene		µg/L	50.0	49.7	99	80 - 120	2009-05-14
4-Chlorotoluene		µg/L	50.0	46.3	93	80 - 120	2009-05-14
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.8	90	80 - 120	2009-05-14
n-Butylbenzene		µg/L	50.0	49.4	99	80 - 120	2009-05-14
1,2-Dibromo-3-chloropropane		µg/L	50.0	49.9	100	80 - 120	2009-05-14
1,2,3-Trichlorobenzene		µg/L	50.0	46.5	93	80 - 120	2009-05-14
1,2,4-Trichlorobenzene		µg/L	50.0	48.1	96	80 - 120	2009-05-14
Naphthalene		µg/L	50.0	47.1	94	80 - 120	2009-05-14
Hexachlorobutadiene		µg/L	50.0	48.1	96	80 - 120	2009-05-14

Standard (CCV-2)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	51.0	102	80 - 120	2009-05-14
Dichlorodifluoromethane	[14]	µg/L	50.0	27.5	55	80 - 120	2009-05-14
Chloromethane (methyl chloride)		µg/L	50.0	44.8	90	80 - 120	2009-05-14

continued ...

[13] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[14] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50.0	46.1	92	80 - 120	2009-05-14
Bromomethane (methyl bromide)		µg/L	50.0	56.2	112	80 - 120	2009-05-14
Chloroethane		µg/L	50.0	55.8	112	80 - 120	2009-05-14
Trichlorofluoromethane		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Acetone	[15]	µg/L	50.0	35.7	71	80 - 120	2009-05-14
Iodomethane (methyl iodide)		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Carbon Disulfide		µg/L	50.0	52.1	104	80 - 120	2009-05-14
Acrylonitrile		µg/L	50.0	45.1	90	80 - 120	2009-05-14
2-Butanone (MEK)	[16]	µg/L	50.0	32.6	65	80 - 120	2009-05-14
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.6	97	80 - 120	2009-05-14
2-Hexanone	[17]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
trans 1,4-Dichloro-2-butene		µg/L	50.0	43.2	86	80 - 120	2009-05-14
1,1-Dichloroethene		µg/L	50.0	48.2	96	80 - 120	2009-05-14
Methylene chloride		µg/L	50.0	45.6	91	80 - 120	2009-05-14
MTBE		µg/L	50.0	46.2	92	80 - 120	2009-05-14
trans-1,2-Dichloroethene		µg/L	50.0	49.6	99	80 - 120	2009-05-14
1,1-Dichloroethane		µg/L	50.0	49.3	99	80 - 120	2009-05-14
cis-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-05-14
2,2-Dichloropropane	[18]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
1,2-Dichloroethane (EDC)		µg/L	50.0	50.1	100	80 - 120	2009-05-14
Chloroform		µg/L	50.0	49.8	100	80 - 120	2009-05-14
1,1,1-Trichloroethane		µg/L	50.0	51.9	104	80 - 120	2009-05-14
1,1-Dichloropropene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
Benzene		µg/L	50.0	48.4	97	80 - 120	2009-05-14
Carbon Tetrachloride		µg/L	50.0	52.8	106	80 - 120	2009-05-14
1,2-Dichloropropane		µg/L	50.0	49.3	99	80 - 120	2009-05-14
Trichloroethene (TCE)		µg/L	50.0	58.1	116	80 - 120	2009-05-14
Dibromomethane (methylene bromide)		µg/L	50.0	49.2	98	80 - 120	2009-05-14
Bromodichloromethane		µg/L	50.0	50.4	101	80 - 120	2009-05-14
2-Chloroethyl vinyl ether	[19]	µg/L	50.0	27.9	56	80 - 120	2009-05-14
cis-1,3-Dichloropropene		µg/L	50.0	49.8	100	80 - 120	2009-05-14
trans-1,3-Dichloropropene		µg/L	50.0	49.9	100	80 - 120	2009-05-14
Toluene		µg/L	50.0	47.8	96	80 - 120	2009-05-14
1,1,2-Trichloroethane		µg/L	50.0	49.2	98	80 - 120	2009-05-14
1,3-Dichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-05-14
Dibromochloromethane		µg/L	50.0	53.8	108	80 - 120	2009-05-14
1,2-Dibromoethane (EDB)		µg/L	50.0	50.0	100	80 - 120	2009-05-14
Tetrachloroethene (PCE)		µg/L	50.0	53.9	108	80 - 120	2009-05-14
Chlorobenzene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
1,1,1,2-Tetrachloroethane		µg/L	50.0	52.1	104	80 - 120	2009-05-14
Ethylbenzene		µg/L	50.0	49.8	100	80 - 120	2009-05-14
m,p-Xylene		µg/L	100	101	101	80 - 120	2009-05-14

continued ...

[15] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[16] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[17] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[18] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[19] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromoform		µg/L	50.0	49.8	100	80 - 120	2009-05-14
Styrene		µg/L	50.0	53.6	107	80 - 120	2009-05-14
o-Xylene		µg/L	50.0	52.0	104	80 - 120	2009-05-14
1,1,2,2-Tetrachloroethane	[20]	µg/L	50.0	39.4	79	80 - 120	2009-05-14
2-Chlorotoluene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
1,2,3-Trichloropropane		µg/L	50.0	54.0	108	80 - 120	2009-05-14
Isopropylbenzene		µg/L	50.0	51.8	104	80 - 120	2009-05-14
Bromobenzene		µg/L	50.0	49.1	98	80 - 120	2009-05-14
n-Propylbenzene		µg/L	50.0	50.0	100	80 - 120	2009-05-14
1,3,5-Trimethylbenzene		µg/L	50.0	50.4	101	80 - 120	2009-05-14
tert-Butylbenzene		µg/L	50.0	52.4	105	80 - 120	2009-05-14
1,2,4-Trimethylbenzene		µg/L	50.0	50.6	101	80 - 120	2009-05-14
1,4-Dichlorobenzene (para)		µg/L	50.0	47.5	95	80 - 120	2009-05-14
sec-Butylbenzene		µg/L	50.0	51.1	102	80 - 120	2009-05-14
1,3-Dichlorobenzene (meta)		µg/L	50.0	48.7	97	80 - 120	2009-05-14
p-Isopropyltoluene		µg/L	50.0	51.6	103	80 - 120	2009-05-14
4-Chlorotoluene		µg/L	50.0	48.5	97	80 - 120	2009-05-14
1,2-Dichlorobenzene (ortho)		µg/L	50.0	48.6	97	80 - 120	2009-05-14
n-Butylbenzene		µg/L	50.0	50.4	101	80 - 120	2009-05-14
1,2-Dibromo-3-chloropropane		µg/L	50.0	52.6	105	80 - 120	2009-05-14
1,2,3-Trichlorobenzene		µg/L	50.0	49.6	99	80 - 120	2009-05-14
1,2,4-Trichlorobenzene		µg/L	50.0	49.3	99	80 - 120	2009-05-14
Naphthalene		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Hexachlorobutadiene		µg/L	50.0	47.6	95	80 - 120	2009-05-14

Standard (ICV-1)

QC Batch: 59605 Date Analyzed: 2009-05-14 Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	978	98	90 - 110	2009-05-14

Standard (CCV-1)

QC Batch: 59605 Date Analyzed: 2009-05-14 Analyzed By: MD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1020	102	90 - 110	2009-05-14

[20] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

9051329

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOU Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS	REMARKS
5-11-09	1145	HTSA-0197-HVOU-006-0509	Water	195784	4	X	X	X	

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME) Gabriel Garcia	(PRINTED NAME) James Gutierrez	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace-LBK
	GOOD CONDITION/COLD (ICE) By-21	(TIME/DATE) 1600 5/11/09	(TIME/DATE) 1700 5-11-09	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS (LS Cannot find Air Bill)		IR 4.3 4.8

FOR LAB USE ONLY - PRINT BELOW

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

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575-532-1526 u
575-532-1587 f

9051329

108

CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOC Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS								REMARKS
5-11-09	1145	HTSA-0197-HVOC-~~0001~~ 006 -0509-ms/msd	Water		4	X	X	X								

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME) James Gutierrez	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace - LBK
	GOOD CONDITION/CHILLED Byd	(TIME) (DATE) 1600 5/11/09	(TIME) (DATE) 1200 5-12-09	(TIME) (DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

Analyte List – HELSTF TSA Long-Term Groundwater Monitoring HVW wells HVW-05, HVW-06, HVW-07, HVW-08, HVW-09, HVW-10					
Parameter		Reference Method	Container	Maximum hold time	Preservative
Water Quality	Conductivity pH Temperature Dissolved Oxygen ORP Turbidity	Field measured with YSI and turbidimeter	NA	NA	NA
	Total Dissolved Solids	160.1	500 mL- polyethylene	NA 7 days	Chill to 4 °C
Organics	VOCs including MTBE	8260B	40-mL VOAs (3)	14 days	HCl, pH<2 Chill to 4 °C
	TPH GRO	8015	40-mL VOAs (3)	14 days	HCl, pH<2 Chill to 4 °C

Note: 5 Day Turn Around.

TraceAnalysis, Inc.

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200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: May 20, 2009

Work Order: 9051322

Project Name: HELSTF TSA Long-Term Groundwater HVW Wells

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195746	HTSA-0197-HVW-005-0509	water	2009-05-12	12:35	2009-05-13
195747	HTSA-0197-HVW-006-0509	water	2009-05-11	11:45	2009-05-13
195748	HTSA-0197-HVW-010-0509	water	2009-05-12	10:24	2009-05-13
195749	HTSA-0197-HVW-105-0509	water	2009-05-12	12:35	2009-05-13
195750	HTSA-0197-TB-09-103	water	2009-05-12	12:35	2009-05-13
195751	HTSA-0197-HVW-008-0509	water	2009-05-12	13:18	2009-05-13
195752	HTSA-0197-RB-001-0509	water	2009-05-12	13:45	2009-05-13

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 47 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director

Case Narrative

Samples for project HELSTF TSA Long-Term Groundwater HVW Wells were received by TraceAnalysis, Inc. on 2009-05-13 and assigned to work order 9051322. Samples for work order 9051322 were received intact at a temperature of 4.8 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TDS	SM 2540C	50927	2009-05-19 at 14:02	59665	2009-05-20 at 13:38
TPH GRO	S 8015B	50843	2009-05-18 at 14:43	59566	2009-05-18 at 14:43
Volatiles	S 8260B	50739	2009-05-13 at 12:00	59454	2009-05-13 at 12:00
Volatiles	S 8260B	50788	2009-05-14 at 12:00	59509	2009-05-14 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9051322 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 195746 - HTSA-0197-HVW-005-0509

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	Sample Preparation:	2009-05-19	Prepared By:	SS

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**5170**	**5170**	<25.00	mg/L	5	25.00	10	5

Sample: 195746 - HTSA-0197-HVW-005-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**155**	**155**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.40	mg/L	100	10.0	94	75.6 - 110
4-Bromofluorobenzene (4-BFB)		9.22	mg/L	100	10.0	92	63.6 - 117

Sample: 195746 - HTSA-0197-HVW-005-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59454	Date Analyzed:	2009-05-13	Analyzed By:	KB
Prep Batch:	50739	Sample Preparation:	2009-05-13	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<74.0	<200	<74.0	μg/L	200	74.0	1	0.37
Dichlorodifluoromethane	U	<90.0	<200	<90.0	μg/L	200	90.0	1	0.45
Chloromethane (methyl chloride)	U	<118	<200	<118	μg/L	200	118	1	0.59
Vinyl Chloride	U	<138	<200	<138	μg/L	200	138	1	0.69
Bromomethane (methyl bromide)	U	<150	<1000	<150	μg/L	200	150	5	0.75
Chloroethane	U	<114	<200	<114	μg/L	200	114	1	0.57
Trichlorofluoromethane	U	<94.0	<200	<94.0	μg/L	200	94.0	1	0.47

continued . . .

sample 195746 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Acetone	JB	**1870**	<2000	406	μg/L	200	350	10	1.75
Iodomethane (methyl iodide)	U	<64.0	<1000	<64.0	μg/L	200	64.0	5	0.32
Carbon Disulfide	U	<50.0	<200	<50.0	μg/L	200	50.0	1	0.25
Acrylonitrile	U	<64.0	<200	<64.0	μg/L	200	64.0	1	0.32
2-Butanone (MEK)	J	**418**	<1000	<162	μg/L	200	162	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<158	<1000	<158	μg/L	200	158	5	0.79
2-Hexanone	U	<102	<1000	<102	μg/L	200	102	5	0.51
trans 1,4-Dichloro-2-butene	U	<98.0	<2000	<98.0	μg/L	200	98.0	10	0.49
1,1-Dichloroethene	U	<80.0	<200	<80.0	μg/L	200	80.0	1	0.4
Methylene chloride	U	<90.0	<1000	<90.0	μg/L	200	90.0	5	0.45
MTBE	U	<80.0	<200	<80.0	μg/L	200	80.0	1	0.4
trans-1,2-Dichloroethene	U	<66.0	<200	<66.0	μg/L	200	66.0	1	0.33
1,1-Dichloroethane	U	<58.0	<200	<58.0	μg/L	200	58.0	1	0.29
cis-1,2-Dichloroethene	U	<40.0	<200	<40.0	μg/L	200	40.0	1	0.2
2,2-Dichloropropane	U	<84.0	<200	<84.0	μg/L	200	84.0	1	0.42
1,2-Dichloroethane (EDC)		**777**	**777**	<70.0	μg/L	200	70.0	1	0.35
Chloroform	U	<54.0	<200	<54.0	μg/L	200	54.0	1	0.27
1,1,1-Trichloroethane	U	<46.0	<200	<46.0	μg/L	200	46.0	1	0.23
1,1-Dichloropropene	U	<68.0	<200	<68.0	μg/L	200	68.0	1	0.34
Benzene		**31000**	**31000**	<48.0	μg/L	200	48.0	1	0.24
Carbon Tetrachloride	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
1,2-Dichloropropane	U	<72.0	<200	<72.0	μg/L	200	72.0	1	0.36
Trichloroethene (TCE)	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
Dibromomethane (methylene bromide)	U	<94.0	<200	<94.0	μg/L	200	94.0	1	0.47
Bromodichloromethane	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
2-Chloroethyl vinyl ether	U	<66.0	<1000	<66.0	μg/L	200	66.0	5	0.33
cis-1,3-Dichloropropene	U	<66.0	<200	<66.0	μg/L	200	66.0	1	0.33
trans-1,3-Dichloropropene	U	<76.0	<200	<76.0	μg/L	200	76.0	1	0.38
Toluene	[1]	**55100**	**55100**	<54.0	μg/L	200	54.0	1	0.27
1,1,2-Trichloroethane	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
1,3-Dichloropropane	U	<54.0	<200	<54.0	μg/L	200	54.0	1	0.27
Dibromochloromethane	U	<64.0	<200	<64.0	μg/L	200	64.0	1	0.32
1,2-Dibromoethane (EDB)	U	<68.0	<200	<68.0	μg/L	200	68.0	1	0.34
Tetrachloroethene (PCE)	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
Chlorobenzene	U	<52.0	<200	<52.0	μg/L	200	52.0	1	0.26
1,1,1,2-Tetrachloroethane	U	<44.0	<200	<44.0	μg/L	200	44.0	1	0.22
Ethylbenzene		**4640**	**4640**	<52.0	μg/L	200	52.0	1	0.26
m,p-Xylene		**9310**	**9310**	<108	μg/L	200	108	1	0.54
Bromoform	U	<46.0	<200	<46.0	μg/L	200	46.0	1	0.23
Styrene	U	<42.0	<200	<42.0	μg/L	200	42.0	1	0.21
o-Xylene		**4430**	**4430**	<52.0	μg/L	200	52.0	1	0.26
1,1,2,2-Tetrachloroethane	U	<84.0	<200	<84.0	μg/L	200	84.0	1	0.42
2-Chlorotoluene	U	<48.0	<200	<48.0	μg/L	200	48.0	1	0.24
1,2,3-Trichloropropane	U	<86.0	<200	<86.0	μg/L	200	86.0	1	0.43

continued ...

[1] Estimated concentration value greater than standard range.

sample 195746 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Isopropylbenzene	J	**108**	<200	<52.0	μg/L	200	52.0	1	0.26
Bromobenzene	U	<52.0	<200	<52.0	μg/L	200	52.0	1	0.26
n-Propylbenzene	J	**199**	<200	<62.0	μg/L	200	62.0	1	0.31
1,3,5-Trimethylbenzene		**262**	**262**	<54.0	μg/L	200	54.0	1	0.27
tert-Butylbenzene	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
1,2,4-Trimethylbenzene		**1220**	**1220**	<58.0	μg/L	200	58.0	1	0.29
1,4-Dichlorobenzene (para)	U	<48.0	<200	<48.0	μg/L	200	48.0	1	0.24
sec-Butylbenzene	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
1,3-Dichlorobenzene (meta)	U	<62.0	<200	<62.0	μg/L	200	62.0	1	0.31
p-Isopropyltoluene	U	<66.0	<200	<66.0	μg/L	200	66.0	1	0.33
4-Chlorotoluene	U	<58.0	<200	<58.0	μg/L	200	58.0	1	0.29
1,2-Dichlorobenzene (ortho)	U	<54.0	<200	<54.0	μg/L	200	54.0	1	0.27
n-Butylbenzene	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
1,2-Dibromo-3-chloropropane	U	<136	<1000	<136	μg/L	200	136	5	0.68
1,2,3-Trichlorobenzene	U	<66.0	<1000	<66.0	μg/L	200	66.0	5	0.33
1,2,4-Trichlorobenzene	U	<68.0	<1000	<68.0	μg/L	200	68.0	5	0.34
Naphthalene	J	**209**	<1000	<56.0	μg/L	200	56.0	5	0.28
Hexachlorobutadiene	U	<108	<1000	<108	μg/L	200	108	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		10900	μg/L	200	10000	109	75.3 - 131
Toluene-d8		9410	μg/L	200	10000	94	91.4 - 112
4-Bromofluorobenzene (4-BFB)		10000	μg/L	200	10000	100	83.8 - 108

Sample: 195747 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	J	**0.187**	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0966	mg/L	1	0.100	97	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0955	mg/L	1	0.100	96	63.6 - 117

Sample: 195747 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59454	Date Analyzed:	2009-05-13	Analyzed By:	KB
Prep Batch:	50739	Sample Preparation:	2009-05-13	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.370	<1.00	<0.370	μg/L	1	0.370	1	0.37
Dichlorodifluoromethane	U	<0.450	<1.00	<0.450	μg/L	1	0.450	1	0.45
Chloromethane (methyl chloride)	U	<0.590	<1.00	<0.590	μg/L	1	0.590	1	0.59
Vinyl Chloride	U	<0.690	<1.00	<0.690	μg/L	1	0.690	1	0.69
Bromomethane (methyl bromide)	U	<0.750	<5.00	<0.750	μg/L	1	0.750	5	0.75
Chloroethane	U	<0.570	<1.00	<0.570	μg/L	1	0.570	1	0.57
Trichlorofluoromethane	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Acetone	U	<1.75	<10.0	2.03	μg/L	1	1.75	10	1.75
Iodomethane (methyl iodide)	U	<0.320	<5.00	<0.320	μg/L	1	0.320	5	0.32
Carbon Disulfide	U	<0.250	<1.00	<0.250	μg/L	1	0.250	1	0.25
Acrylonitrile	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
2-Butanone (MEK)	U	<0.810	<5.00	<0.810	μg/L	1	0.810	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<0.790	<5.00	<0.790	μg/L	1	0.790	5	0.79
2-Hexanone	U	<0.510	<5.00	<0.510	μg/L	1	0.510	5	0.51
trans 1,4-Dichloro-2-butene	U	<0.490	<10.0	<0.490	μg/L	1	0.490	10	0.49
1,1-Dichloroethene	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Methylene chloride	U	<0.450	<5.00	<0.450	μg/L	1	0.450	5	0.45
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
trans-1,2-Dichloroethene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
1,1-Dichloroethane	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
cis-1,2-Dichloroethene	U	<0.200	<1.00	<0.200	μg/L	1	0.200	1	0.2
2,2-Dichloropropane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
1,2-Dichloroethane (EDC)	U	<0.350	<1.00	<0.350	μg/L	1	0.350	1	0.35
Chloroform		**1.76**	**1.76**	<0.270	μg/L	1	0.270	1	0.27
1,1,1-Trichloroethane	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
1,1-Dichloropropene	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Benzene		**9.90**	**9.90**	<0.240	μg/L	1	0.240	1	0.24
Carbon Tetrachloride	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dichloropropane	U	<0.360	<1.00	<0.360	μg/L	1	0.360	1	0.36
Trichloroethene (TCE)	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
Dibromomethane (methylene bromide)	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Bromodichloromethane		**1.61**	**1.61**	<0.280	μg/L	1	0.280	1	0.28
2-Chloroethyl vinyl ether	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
cis-1,3-Dichloropropene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
trans-1,3-Dichloropropene	U	<0.380	<1.00	<0.380	μg/L	1	0.380	1	0.38
Toluene		**2.98**	**2.98**	<0.270	μg/L	1	0.270	1	0.27
1,1,2-Trichloroethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichloropropane	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Dibromochloromethane	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
1,2-Dibromoethane (EDB)	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Tetrachloroethene (PCE)	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
Chlorobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26

continued . . .

sample 195747 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
1,1,1,2-Tetrachloroethane	U	<0.220	<1.00	<0.220	μg/L	1	0.220	1	0.22
Ethylbenzene	J	**0.390**	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene		**10.4**	**10.4**	<0.540	μg/L	1	0.540	1	0.54
Bromoform	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
Styrene	U	<0.210	<1.00	<0.210	μg/L	1	0.210	1	0.21
o-Xylene		**5.01**	**5.01**	<0.260	μg/L	1	0.260	1	0.26
1,1,2,2-Tetrachloroethane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
2-Chlorotoluene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
1,2,3-Trichloropropane	U	<0.430	<1.00	<0.430	μg/L	1	0.430	1	0.43
Isopropylbenzene	J	**0.980**	<1.00	<0.260	μg/L	1	0.260	1	0.26
Bromobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene		**1.85**	**1.85**	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene		**2.68**	**2.68**	<0.270	μg/L	1	0.270	1	0.27
tert-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2,4-Trimethylbenzene		**6.60**	**6.60**	<0.290	μg/L	1	0.290	1	0.29
1,4-Dichlorobenzene (para)	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
sec-Butylbenzene	J	**0.460**	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichlorobenzene (meta)	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
p-Isopropyltoluene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
4-Chlorotoluene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,2-Dichlorobenzene (ortho)	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
n-Butylbenzene	J	**0.520**	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dibromo-3-chloropropane	U	<0.680	<5.00	<0.680	μg/L	1	0.680	5	0.68
1,2,3-Trichlorobenzene	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
1,2,4-Trichlorobenzene	U	<0.340	<5.00	<0.340	μg/L	1	0.340	5	0.34
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28
Hexachlorobutadiene	U	<0.540	<5.00	<0.540	μg/L	1	0.540	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.2	μg/L	1	50.0	108	75.3 - 131
Toluene-d8		48.0	μg/L	1	50.0	96	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.4	μg/L	1	50.0	97	83.8 - 108

Sample: 195748 - HTSA-0197-HVW-010-0509

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	Sample Preparation:	2009-05-19	Prepared By:	SS

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**4815**	**4815**	<25.00	mg/L	5	25.00	10	5

Sample: 195748 - HTSA-0197-HVW-010-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**123**	**123**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.27	mg/L	100	10.0	93	75.6 - 110
4-Bromofluorobenzene (4-BFB)		10.3	mg/L	100	10.0	103	63.6 - 117

Sample: 195748 - HTSA-0197-HVW-010-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<185	<500	<185	µg/L	500	185	1	0.37
Dichlorodifluoromethane	U	<225	<500	<225	µg/L	500	225	1	0.45
Chloromethane (methyl chloride)	U	<295	<500	<295	µg/L	500	295	1	0.59
Vinyl Chloride	U	<345	<500	<345	µg/L	500	345	1	0.69
Bromomethane (methyl bromide)	U	<375	<2500	<375	µg/L	500	375	5	0.75
Chloroethane	U	<285	<500	<285	µg/L	500	285	1	0.57
Trichlorofluoromethane	U	<235	<500	<235	µg/L	500	235	1	0.47
Acetone	B	**8440**	**8440**	1150	µg/L	500	875	10	1.75
Iodomethane (methyl iodide)	U	<160	<2500	<160	µg/L	500	160	5	0.32
Carbon Disulfide	U	<125	<500	<125	µg/L	500	125	1	0.25
Acrylonitrile	U	<160	<500	<160	µg/L	500	160	1	0.32
2-Butanone (MEK)		**6370**	**6370**	<405	µg/L	500	405	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<395	<2500	<395	µg/L	500	395	5	0.79
2-Hexanone	U	<255	<2500	<255	µg/L	500	255	5	0.51
trans 1,4-Dichloro-2-butene	U	<245	<5000	<245	µg/L	500	245	10	0.49

continued . . .

sample 195748 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
1,1-Dichloroethene	U	<200	<500	<200	μg/L	500	200	1	0.4
Methylene chloride	J	**312**	<2500	<225	μg/L	500	225	5	0.45
MTBE	U	<200	<500	<200	μg/L	500	200	1	0.4
trans-1,2-Dichloroethene	U	<165	<500	<165	μg/L	500	165	1	0.33
1,1-Dichloroethane	U	<145	<500	<145	μg/L	500	145	1	0.29
cis-1,2-Dichloroethene	U	<100	<500	<100	μg/L	500	100	1	0.2
2,2-Dichloropropane	U	<210	<500	<210	μg/L	500	210	1	0.42
1,2-Dichloroethane (EDC)	U	<175	<500	<175	μg/L	500	175	1	0.35
Chloroform	U	<135	<500	<135	μg/L	500	135	1	0.27
1,1,1-Trichloroethane	U	<115	<500	<115	μg/L	500	115	1	0.23
1,1-Dichloropropene	U	<170	<500	<170	μg/L	500	170	1	0.34
Benzene		**29100**	**29100**	<120	μg/L	500	120	1	0.24
Carbon Tetrachloride	U	<150	<500	<150	μg/L	500	150	1	0.3
1,2-Dichloropropane	U	<180	<500	<180	μg/L	500	180	1	0.36
Trichloroethene (TCE)	U	<150	<500	<150	μg/L	500	150	1	0.3
Dibromomethane (methylene bromide)	U	<235	<500	<235	μg/L	500	235	1	0.47
Bromodichloromethane	U	<140	<500	<140	μg/L	500	140	1	0.28
2-Chloroethyl vinyl ether	U	<165	<2500	<165	μg/L	500	165	5	0.33
cis-1,3-Dichloropropene	U	<165	<500	<165	μg/L	500	165	1	0.33
trans-1,3-Dichloropropene	U	<190	<500	<190	μg/L	500	190	1	0.38
Toluene		**57200**	**57200**	225	μg/L	500	135	1	0.27
1,1,2-Trichloroethane	U	<140	<500	<140	μg/L	500	140	1	0.28
1,3-Dichloropropane	U	<135	<500	<135	μg/L	500	135	1	0.27
Dibromochloromethane	U	<160	<500	<160	μg/L	500	160	1	0.32
1,2-Dibromoethane (EDB)	U	<170	<500	<170	μg/L	500	170	1	0.34
Tetrachloroethene (PCE)	U	<140	<500	<140	μg/L	500	140	1	0.28
Chlorobenzene	U	<130	<500	<130	μg/L	500	130	1	0.26
1,1,1,2-Tetrachloroethane	U	<110	<500	<110	μg/L	500	110	1	0.22
Ethylbenzene		**6660**	**6660**	<130	μg/L	500	130	1	0.26
m,p-Xylene		**13800**	**13800**	<270	μg/L	500	270	1	0.54
Bromoform	U	<115	<500	<115	μg/L	500	115	1	0.23
Styrene	U	<105	<500	<105	μg/L	500	105	1	0.21
o-Xylene		**6300**	**6300**	<130	μg/L	500	130	1	0.26
1,1,2,2-Tetrachloroethane	U	<210	<500	<210	μg/L	500	210	1	0.42
2-Chlorotoluene	U	<120	<500	<120	μg/L	500	120	1	0.24
1,2,3-Trichloropropane	U	<215	<500	<215	μg/L	500	215	1	0.43
Isopropylbenzene	J	**325**	<500	<130	μg/L	500	130	1	0.26
Bromobenzene	U	<130	<500	<130	μg/L	500	130	1	0.26
n-Propylbenzene		**709**	**709**	<155	μg/L	500	155	1	0.31
1,3,5-Trimethylbenzene		**870**	**870**	<135	μg/L	500	135	1	0.27
tert-Butylbenzene	U	<150	<500	<150	μg/L	500	150	1	0.3
1,2,4-Trimethylbenzene		**3610**	**3610**	<145	μg/L	500	145	1	0.29
1,4-Dichlorobenzene (para)	U	<120	<500	<120	μg/L	500	120	1	0.24
sec-Butylbenzene	U	<140	<500	<140	μg/L	500	140	1	0.28
1,3-Dichlorobenzene (meta)	U	<155	<500	<155	μg/L	500	155	1	0.31

continued ...

sample 195748 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
p-Isopropyltoluene	U	<165	<500	<165	μg/L	500	165	1	0.33
4-Chlorotoluene	U	<145	<500	<145	μg/L	500	145	1	0.29
1,2-Dichlorobenzene (ortho)	U	<135	<500	<135	μg/L	500	135	1	0.27
n-Butylbenzene	U	<150	<500	<150	μg/L	500	150	1	0.3
1,2-Dibromo-3-chloropropane	U	<340	<2500	<340	μg/L	500	340	5	0.68
1,2,3-Trichlorobenzene	U	<165	<2500	<165	μg/L	500	165	5	0.33
1,2,4-Trichlorobenzene	U	<170	<2500	<170	μg/L	500	170	5	0.34
Naphthalene	J	**452**	<2500	<140	μg/L	500	140	5	0.28
Hexachlorobutadiene	U	<270	<2500	<270	μg/L	500	270	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		24400	μg/L	500	25000	98	75.3 - 131
Toluene-d8		24600	μg/L	500	25000	98	91.4 - 112
4-Bromofluorobenzene (4-BFB)		24800	μg/L	500	25000	99	83.8 - 108

Sample: 195749 - HTSA-0197-HVW-105-0509

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	Sample Preparation:	2009-05-19	Prepared By:	SS

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**5085**	**5085**	<25.00	mg/L	5	25.00	10	5

Sample: 195749 - HTSA-0197-HVW-105-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**142**	**142**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		8.84	mg/L	100	10.0	88	75.6 - 110
4-Bromofluorobenzene (4-BFB)		8.93	mg/L	100	10.0	89	63.6 - 117

Sample: 195749 - HTSA-0197-HVW-105-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<74.0	<200	<74.0	µg/L	200	74.0	1	0.37
Dichlorodifluoromethane	U	<90.0	<200	<90.0	µg/L	200	90.0	1	0.45
Chloromethane (methyl chloride)	U	<118	<200	<118	µg/L	200	118	1	0.59
Vinyl Chloride	U	<138	<200	<138	µg/L	200	138	1	0.69
Bromomethane (methyl bromide)	U	<150	<1000	<150	µg/L	200	150	5	0.75
Chloroethane	U	<114	<200	<114	µg/L	200	114	1	0.57
Trichlorofluoromethane	U	<94.0	<200	<94.0	µg/L	200	94.0	1	0.47
Acetone	JB	**1830**	<2000	460	µg/L	200	350	10	1.75
Iodomethane (methyl iodide)	U	<64.0	<1000	<64.0	µg/L	200	64.0	5	0.32
Carbon Disulfide	U	<50.0	<200	<50.0	µg/L	200	50.0	1	0.25
Acrylonitrile	U	<64.0	<200	<64.0	µg/L	200	64.0	1	0.32
2-Butanone (MEK)	J	**487**	<1000	<162	µg/L	200	162	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<158	<1000	<158	µg/L	200	158	5	0.79
2-Hexanone	U	<102	<1000	<102	µg/L	200	102	5	0.51
trans 1,4-Dichloro-2-butene	U	<98.0	<2000	<98.0	µg/L	200	98.0	10	0.49
1,1-Dichloroethene	U	<80.0	<200	<80.0	µg/L	200	80.0	1	0.4
Methylene chloride	U	<90.0	<1000	<90.0	µg/L	200	90.0	5	0.45
MTBE	U	<80.0	<200	<80.0	µg/L	200	80.0	1	0.4
trans-1,2-Dichloroethene	U	<66.0	<200	<66.0	µg/L	200	66.0	1	0.33
1,1-Dichloroethane	U	<58.0	<200	<58.0	µg/L	200	58.0	1	0.29
cis-1,2-Dichloroethene	U	<40.0	<200	<40.0	µg/L	200	40.0	1	0.2
2,2-Dichloropropane	U	<84.0	<200	<84.0	µg/L	200	84.0	1	0.42
1,2-Dichloroethane (EDC)	U	<70.0	<200	<70.0	µg/L	200	70.0	1	0.35
Chloroform	U	<54.0	<200	<54.0	µg/L	200	54.0	1	0.27
1,1,1-Trichloroethane	U	<46.0	<200	<46.0	µg/L	200	46.0	1	0.23
1,1-Dichloropropene	U	<68.0	<200	<68.0	µg/L	200	68.0	1	0.34
Benzene		**30300**	**30300**	<48.0	µg/L	200	48.0	1	0.24
Carbon Tetrachloride	U	<60.0	<200	<60.0	µg/L	200	60.0	1	0.3
1,2-Dichloropropane	U	<72.0	<200	<72.0	µg/L	200	72.0	1	0.36
Trichloroethene (TCE)	U	<60.0	<200	<60.0	µg/L	200	60.0	1	0.3
Dibromomethane (methylene bromide)	U	<94.0	<200	<94.0	µg/L	200	94.0	1	0.47
Bromodichloromethane	U	<56.0	<200	<56.0	µg/L	200	56.0	1	0.28
2-Chloroethyl vinyl ether	U	<66.0	<1000	<66.0	µg/L	200	66.0	5	0.33

continued . . .

sample 195749 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
cis-1,3-Dichloropropene	U	<66.0	<200	<66.0	μg/L	200	66.0	1	0.33
trans-1,3-Dichloropropene	U	<76.0	<200	<76.0	μg/L	200	76.0	1	0.38
Toluene	[2]	**54000**	**54000**	90.0	μg/L	200	54.0	1	0.27
1,1,2-Trichloroethane	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
1,3-Dichloropropane	U	<54.0	<200	<54.0	μg/L	200	54.0	1	0.27
Dibromochloromethane	U	<64.0	<200	<64.0	μg/L	200	64.0	1	0.32
1,2-Dibromoethane (EDB)	U	<68.0	<200	<68.0	μg/L	200	68.0	1	0.34
Tetrachloroethene (PCE)	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
Chlorobenzene	U	<52.0	<200	<52.0	μg/L	200	52.0	1	0.26
1,1,1,2-Tetrachloroethane	U	<44.0	<200	<44.0	μg/L	200	44.0	1	0.22
Ethylbenzene		**4760**	**4760**	<52.0	μg/L	200	52.0	1	0.26
m,p-Xylene		**9590**	**9590**	<108	μg/L	200	108	1	0.54
Bromoform	U	<46.0	<200	<46.0	μg/L	200	46.0	1	0.23
Styrene	U	<42.0	<200	<42.0	μg/L	200	42.0	1	0.21
o-Xylene		**4550**	**4550**	<52.0	μg/L	200	52.0	1	0.26
1,1,2,2-Tetrachloroethane	U	<84.0	<200	<84.0	μg/L	200	84.0	1	0.42
2-Chlorotoluene	U	<48.0	<200	<48.0	μg/L	200	48.0	1	0.24
1,2,3-Trichloropropane	U	<86.0	<200	<86.0	μg/L	200	86.0	1	0.43
Isopropylbenzene	J	**132**	<200	<52.0	μg/L	200	52.0	1	0.26
Bromobenzene	U	<52.0	<200	<52.0	μg/L	200	52.0	1	0.26
n-Propylbenzene		**243**	**243**	<62.0	μg/L	200	62.0	1	0.31
1,3,5-Trimethylbenzene		**316**	**316**	<54.0	μg/L	200	54.0	1	0.27
tert-Butylbenzene	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
1,2,4-Trimethylbenzene		**1410**	**1410**	<58.0	μg/L	200	58.0	1	0.29
1,4-Dichlorobenzene (para)	U	<48.0	<200	<48.0	μg/L	200	48.0	1	0.24
sec-Butylbenzene	U	<56.0	<200	<56.0	μg/L	200	56.0	1	0.28
1,3-Dichlorobenzene (meta)	U	<62.0	<200	<62.0	μg/L	200	62.0	1	0.31
p-Isopropyltoluene	U	<66.0	<200	<66.0	μg/L	200	66.0	1	0.33
4-Chlorotoluene	U	<58.0	<200	<58.0	μg/L	200	58.0	1	0.29
1,2-Dichlorobenzene (ortho)	U	<54.0	<200	<54.0	μg/L	200	54.0	1	0.27
n-Butylbenzene	U	<60.0	<200	<60.0	μg/L	200	60.0	1	0.3
1,2-Dibromo-3-chloropropane	U	<136	<1000	<136	μg/L	200	136	5	0.68
1,2,3-Trichlorobenzene	U	<66.0	<1000	<66.0	μg/L	200	66.0	5	0.33
1,2,4-Trichlorobenzene	U	<68.0	<1000	<68.0	μg/L	200	68.0	5	0.34
Naphthalene	J	**285**	<1000	<56.0	μg/L	200	56.0	5	0.28
Hexachlorobutadiene	U	<108	<1000	<108	μg/L	200	108	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		10000	μg/L	200	10000	100	75.3 - 131
Toluene-d8		9750	μg/L	200	10000	98	91.4 - 112
4-Bromofluorobenzene (4-BFB)		9820	μg/L	200	10000	98	83.8 - 108

[2] Estimated concentration value greater than standard range.

Sample: 195750 - HTSA-0197-TB-09-103

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59454	Date Analyzed:	2009-05-13	Analyzed By:	KB
Prep Batch:	50739	Sample Preparation:	2009-05-13	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.370	<1.00	<0.370	μg/L	1	0.370	1	0.37
Dichlorodifluoromethane	U	<0.450	<1.00	<0.450	μg/L	1	0.450	1	0.45
Chloromethane (methyl chloride)	U	<0.590	<1.00	<0.590	μg/L	1	0.590	1	0.59
Vinyl Chloride	U	<0.690	<1.00	<0.690	μg/L	1	0.690	1	0.69
Bromomethane (methyl bromide)	U	<0.750	<5.00	<0.750	μg/L	1	0.750	5	0.75
Chloroethane	U	<0.570	<1.00	<0.570	μg/L	1	0.570	1	0.57
Trichlorofluoromethane	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Acetone	JB	**2.94**	<10.0	2.03	μg/L	1	1.75	10	1.75
Iodomethane (methyl iodide)	U	<0.320	<5.00	<0.320	μg/L	1	0.320	5	0.32
Carbon Disulfide	U	<0.250	<1.00	<0.250	μg/L	1	0.250	1	0.25
Acrylonitrile	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
2-Butanone (MEK)	U	<0.810	<5.00	<0.810	μg/L	1	0.810	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<0.790	<5.00	<0.790	μg/L	1	0.790	5	0.79
2-Hexanone	U	<0.510	<5.00	<0.510	μg/L	1	0.510	5	0.51
trans 1,4-Dichloro-2-butene	U	<0.490	<10.0	<0.490	μg/L	1	0.490	10	0.49
1,1-Dichloroethene	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Methylene chloride	J	**3.29**	<5.00	<0.450	μg/L	1	0.450	5	0.45
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
trans-1,2-Dichloroethene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
1,1-Dichloroethane	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
cis-1,2-Dichloroethene	U	<0.200	<1.00	<0.200	μg/L	1	0.200	1	0.2
2,2-Dichloropropane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
1,2-Dichloroethane (EDC)	U	<0.350	<1.00	<0.350	μg/L	1	0.350	1	0.35
Chloroform	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,1,1-Trichloroethane	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
1,1-Dichloropropene	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Carbon Tetrachloride	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dichloropropane	U	<0.360	<1.00	<0.360	μg/L	1	0.360	1	0.36
Trichloroethene (TCE)	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
Dibromomethane (methylene bromide)	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Bromodichloromethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
2-Chloroethyl vinyl ether	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
cis-1,3-Dichloropropene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
trans-1,3-Dichloropropene	U	<0.380	<1.00	<0.380	μg/L	1	0.380	1	0.38
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,1,2-Trichloroethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichloropropane	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Dibromochloromethane	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
1,2-Dibromoethane (EDB)	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34

continued . . .

sample 195750 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Tetrachloroethene (PCE)	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
Chlorobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
1,1,1,2-Tetrachloroethane	U	<0.220	<1.00	<0.220	μg/L	1	0.220	1	0.22
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
Bromoform	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
Styrene	U	<0.210	<1.00	<0.210	μg/L	1	0.210	1	0.21
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
1,1,2,2-Tetrachloroethane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
2-Chlorotoluene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
1,2,3-Trichloropropane	U	<0.430	<1.00	<0.430	μg/L	1	0.430	1	0.43
Isopropylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
Bromobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
tert-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,4-Dichlorobenzene (para)	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
sec-Butylbenzene	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichlorobenzene (meta)	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
p-Isopropyltoluene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
4-Chlorotoluene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,2-Dichlorobenzene (ortho)	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
n-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dibromo-3-chloropropane	U	<0.680	<5.00	<0.680	μg/L	1	0.680	5	0.68
1,2,3-Trichlorobenzene	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
1,2,4-Trichlorobenzene	U	<0.340	<5.00	<0.340	μg/L	1	0.340	5	0.34
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28
Hexachlorobutadiene	U	<0.540	<5.00	<0.540	μg/L	1	0.540	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.3	μg/L	1	50.0	107	75.3 - 131
Toluene-d8		48.0	μg/L	1	50.0	96	91.4 - 112
4-Bromofluorobenzene (4-BFB)		47.8	μg/L	1	50.0	96	83.8 - 108

Sample: 195751 - HTSA-0197-HVW-008-0509

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	Sample Preparation:	2009-05-19	Prepared By:	SS

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**3330**	**3330**	<25.00	mg/L	5	25.00	10	5

Sample: 195751 - HTSA-0197-HVW-008-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**148**	**148**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.05	mg/L	100	10.0	90	75.6 - 110
4-Bromofluorobenzene (4-BFB)		10.7	mg/L	100	10.0	107	63.6 - 117

Sample: 195751 - HTSA-0197-HVW-008-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	*U*	<37.0	<100	<37.0	μg/L	100	37.0	1	0.37
Dichlorodifluoromethane	*U*	<45.0	<100	<45.0	μg/L	100	45.0	1	0.45
Chloromethane (methyl chloride)	*U*	<59.0	<100	<59.0	μg/L	100	59.0	1	0.59
Vinyl Chloride	*U*	<69.0	<100	<69.0	μg/L	100	69.0	1	0.69
Bromomethane (methyl bromide)	*U*	<75.0	<500	<75.0	μg/L	100	75.0	5	0.75
Chloroethane	*U*	<57.0	<100	<57.0	μg/L	100	57.0	1	0.57
Trichlorofluoromethane	*U*	<47.0	<100	<47.0	μg/L	100	47.0	1	0.47
Acetone	*B*	**1960**	**1960**	230	μg/L	100	175	10	1.75
Iodomethane (methyl iodide)	*U*	<32.0	<500	<32.0	μg/L	100	32.0	5	0.32
Carbon Disulfide	*U*	<25.0	<100	<25.0	μg/L	100	25.0	1	0.25
Acrylonitrile	*U*	<32.0	<100	<32.0	μg/L	100	32.0	1	0.32
2-Butanone (MEK)		**638**	**638**	<81.0	μg/L	100	81.0	5	0.81
4-Methyl-2-pentanone (MIBK)	*U*	<79.0	<500	<79.0	μg/L	100	79.0	5	0.79
2-Hexanone	*U*	<51.0	<500	<51.0	μg/L	100	51.0	5	0.51
trans 1,4-Dichloro-2-butene	*U*	<49.0	<1000	<49.0	μg/L	100	49.0	10	0.49

continued . . .

sample 195751 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
1,1-Dichloroethene	U	<40.0	<100	<40.0	μg/L	100	40.0	1	0.4
Methylene chloride	U	<45.0	<500	<45.0	μg/L	100	45.0	5	0.45
MTBE	U	<40.0	<100	<40.0	μg/L	100	40.0	1	0.4
trans-1,2-Dichloroethene	U	<33.0	<100	<33.0	μg/L	100	33.0	1	0.33
1,1-Dichloroethane	U	<29.0	<100	<29.0	μg/L	100	29.0	1	0.29
cis-1,2-Dichloroethene	U	<20.0	<100	<20.0	μg/L	100	20.0	1	0.2
2,2-Dichloropropane	U	<42.0	<100	<42.0	μg/L	100	42.0	1	0.42
1,2-Dichloroethane (EDC)	U	<35.0	<100	<35.0	μg/L	100	35.0	1	0.35
Chloroform	U	<27.0	<100	<27.0	μg/L	100	27.0	1	0.27
1,1,1-Trichloroethane	U	<23.0	<100	<23.0	μg/L	100	23.0	1	0.23
1,1-Dichloropropene	U	<34.0	<100	<34.0	μg/L	100	34.0	1	0.34
Benzene		**7320**	**7320**	<24.0	μg/L	100	24.0	1	0.24
Carbon Tetrachloride	U	<30.0	<100	<30.0	μg/L	100	30.0	1	0.3
1,2-Dichloropropane	U	<36.0	<100	<36.0	μg/L	100	36.0	1	0.36
Trichloroethene (TCE)	U	<30.0	<100	<30.0	μg/L	100	30.0	1	0.3
Dibromomethane (methylene bromide)	U	<47.0	<100	<47.0	μg/L	100	47.0	1	0.47
Bromodichloromethane	U	<28.0	<100	<28.0	μg/L	100	28.0	1	0.28
2-Chloroethyl vinyl ether	U	<33.0	<500	<33.0	μg/L	100	33.0	5	0.33
cis-1,3-Dichloropropene	U	<33.0	<100	<33.0	μg/L	100	33.0	1	0.33
trans-1,3-Dichloropropene	U	<38.0	<100	<38.0	μg/L	100	38.0	1	0.38
Toluene	[3]	**33200**	**33200**	45.0	μg/L	100	27.0	1	0.27
1,1,2-Trichloroethane	U	<28.0	<100	<28.0	μg/L	100	28.0	1	0.28
1,3-Dichloropropane	U	<27.0	<100	<27.0	μg/L	100	27.0	1	0.27
Dibromochloromethane	U	<32.0	<100	<32.0	μg/L	100	32.0	1	0.32
1,2-Dibromoethane (EDB)	U	<34.0	<100	<34.0	μg/L	100	34.0	1	0.34
Tetrachloroethene (PCE)	U	<28.0	<100	<28.0	μg/L	100	28.0	1	0.28
Chlorobenzene	U	<26.0	<100	<26.0	μg/L	100	26.0	1	0.26
1,1,1,2-Tetrachloroethane	U	<22.0	<100	<22.0	μg/L	100	22.0	1	0.22
Ethylbenzene		**5590**	**5590**	<26.0	μg/L	100	26.0	1	0.26
m,p-Xylene		**12000**	**12000**	<54.0	μg/L	100	54.0	1	0.54
Bromoform	U	<23.0	<100	<23.0	μg/L	100	23.0	1	0.23
Styrene	U	<21.0	<100	<21.0	μg/L	100	21.0	1	0.21
o-Xylene		**5230**	**5230**	<26.0	μg/L	100	26.0	1	0.26
1,1,2,2-Tetrachloroethane	U	<42.0	<100	<42.0	μg/L	100	42.0	1	0.42
2-Chlorotoluene	U	<24.0	<100	<24.0	μg/L	100	24.0	1	0.24
1,2,3-Trichloropropane	U	<43.0	<100	<43.0	μg/L	100	43.0	1	0.43
Isopropylbenzene		**198**	**198**	<26.0	μg/L	100	26.0	1	0.26
Bromobenzene	U	<26.0	<100	<26.0	μg/L	100	26.0	1	0.26
n-Propylbenzene		**383**	**383**	<31.0	μg/L	100	31.0	1	0.31
1,3,5-Trimethylbenzene		**496**	**496**	<27.0	μg/L	100	27.0	1	0.27
tert-Butylbenzene	U	<30.0	<100	<30.0	μg/L	100	30.0	1	0.3
1,2,4-Trimethylbenzene		**2290**	**2290**	<29.0	μg/L	100	29.0	1	0.29
1,4-Dichlorobenzene (para)	U	<24.0	<100	<24.0	μg/L	100	24.0	1	0.24
sec-Butylbenzene	U	<28.0	<100	<28.0	μg/L	100	28.0	1	0.28

continued ...

[3] Estimated concentration value greater than standard range.

sample 195751 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
1,3-Dichlorobenzene (meta)	U	<31.0	<100	<31.0	μg/L	100	31.0	1	0.31
p-Isopropyltoluene	U	<33.0	<100	<33.0	μg/L	100	33.0	1	0.33
4-Chlorotoluene	U	<29.0	<100	<29.0	μg/L	100	29.0	1	0.29
1,2-Dichlorobenzene (ortho)	U	<27.0	<100	<27.0	μg/L	100	27.0	1	0.27
n-Butylbenzene	U	<30.0	<100	<30.0	μg/L	100	30.0	1	0.3
1,2-Dibromo-3-chloropropane	U	<68.0	<500	<68.0	μg/L	100	68.0	5	0.68
1,2,3-Trichlorobenzene	U	<33.0	<500	<33.0	μg/L	100	33.0	5	0.33
1,2,4-Trichlorobenzene	U	<34.0	<500	<34.0	μg/L	100	34.0	5	0.34
Naphthalene	J	**391**	<500	<28.0	μg/L	100	28.0	5	0.28
Hexachlorobutadiene	U	<54.0	<500	<54.0	μg/L	100	54.0	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		4980	μg/L	100	5000	100	75.3 - 131
Toluene-d8		4870	μg/L	100	5000	97	91.4 - 112
4-Bromofluorobenzene (4-BFB)		5110	μg/L	100	5000	102	83.8 - 108

Sample: 195752 - HTSA-0197-RB-001-0509

Laboratory:	Lubbock				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	Sample Preparation:	2009-05-19	Prepared By:	SS

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids	J	**9.000**	<10.00	<5.000	mg/L	1	5.000	10	5

Sample: 195752 - HTSA-0197-RB-001-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59566	Date Analyzed:	2009-05-18	Analyzed By:	ER
Prep Batch:	50843	Sample Preparation:	2009-05-18	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0978	mg/L	1	0.100	98	63.6 - 117

Sample: 195752 - HTSA-0197-RB-001-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.370	<1.00	<0.370	μg/L	1	0.370	1	0.37
Dichlorodifluoromethane	U	<0.450	<1.00	<0.450	μg/L	1	0.450	1	0.45
Chloromethane (methyl chloride)	U	<0.590	<1.00	<0.590	μg/L	1	0.590	1	0.59
Vinyl Chloride	U	<0.690	<1.00	<0.690	μg/L	1	0.690	1	0.69
Bromomethane (methyl bromide)	U	<0.750	<5.00	<0.750	μg/L	1	0.750	5	0.75
Chloroethane	U	<0.570	<1.00	<0.570	μg/L	1	0.570	1	0.57
Trichlorofluoromethane	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Acetone	U	<1.75	<10.0	2.30	μg/L	1	1.75	10	1.75
Iodomethane (methyl iodide)	U	<0.320	<5.00	<0.320	μg/L	1	0.320	5	0.32
Carbon Disulfide	U	<0.250	<1.00	<0.250	μg/L	1	0.250	1	0.25
Acrylonitrile	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
2-Butanone (MEK)	U	<0.810	<5.00	<0.810	μg/L	1	0.810	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<0.790	<5.00	<0.790	μg/L	1	0.790	5	0.79
2-Hexanone	U	<0.510	<5.00	<0.510	μg/L	1	0.510	5	0.51
trans 1,4-Dichloro-2-butene	U	<0.490	<10.0	<0.490	μg/L	1	0.490	10	0.49
1,1-Dichloroethene	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Methylene chloride	U	<0.450	<5.00	<0.450	μg/L	1	0.450	5	0.45
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
trans-1,2-Dichloroethene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
1,1-Dichloroethane	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
cis-1,2-Dichloroethene	U	<0.200	<1.00	<0.200	μg/L	1	0.200	1	0.2
2,2-Dichloropropane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
1,2-Dichloroethane (EDC)	U	<0.350	<1.00	<0.350	μg/L	1	0.350	1	0.35
Chloroform		**1.40**	**1.40**	<0.270	μg/L	1	0.270	1	0.27
1,1,1-Trichloroethane	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
1,1-Dichloropropene	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Benzene	J	**0.320**	<1.00	<0.240	μg/L	1	0.240	1	0.24
Carbon Tetrachloride	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dichloropropane	U	<0.360	<1.00	<0.360	μg/L	1	0.360	1	0.36
Trichloroethene (TCE)	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
Dibromomethane (methylene bromide)	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Bromodichloromethane	J	**0.740**	<1.00	<0.280	μg/L	1	0.280	1	0.28
2-Chloroethyl vinyl ether	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33

continued . . .

sample 195752 continued ...

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
cis-1,3-Dichloropropene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
trans-1,3-Dichloropropene	U	<0.380	<1.00	<0.380	μg/L	1	0.380	1	0.38
Toluene	B	**3.02**	**3.02**	0.450	μg/L	1	0.270	1	0.27
1,1,2-Trichloroethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichloropropane	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Dibromochloromethane	J	**0.770**	<1.00	<0.320	μg/L	1	0.320	1	0.32
1,2-Dibromoethane (EDB)	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Tetrachloroethene (PCE)	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
Chlorobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
1,1,1,2-Tetrachloroethane	U	<0.220	<1.00	<0.220	μg/L	1	0.220	1	0.22
Ethylbenzene		**2.03**	**2.03**	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene		**5.11**	**5.11**	<0.540	μg/L	1	0.540	1	0.54
Bromoform	J	**0.310**	<1.00	<0.230	μg/L	1	0.230	1	0.23
Styrene	U	<0.210	<1.00	<0.210	μg/L	1	0.210	1	0.21
o-Xylene		**2.33**	**2.33**	<0.260	μg/L	1	0.260	1	0.26
1,1,2,2-Tetrachloroethane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
2-Chlorotoluene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
1,2,3-Trichloropropane	U	<0.430	<1.00	<0.430	μg/L	1	0.430	1	0.43
Isopropylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
Bromobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	J	**0.590**	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	J	**0.930**	<1.00	<0.270	μg/L	1	0.270	1	0.27
tert-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2,4-Trimethylbenzene		**3.97**	**3.97**	<0.290	μg/L	1	0.290	1	0.29
1,4-Dichlorobenzene (para)	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
sec-Butylbenzene	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichlorobenzene (meta)	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
p-Isopropyltoluene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
4-Chlorotoluene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,2-Dichlorobenzene (ortho)	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
n-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dibromo-3-chloropropane	U	<0.680	<5.00	<0.680	μg/L	1	0.680	5	0.68
1,2,3-Trichlorobenzene	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
1,2,4-Trichlorobenzene	U	<0.340	<5.00	<0.340	μg/L	1	0.340	5	0.34
Naphthalene	J	**0.800**	<5.00	<0.280	μg/L	1	0.280	5	0.28
Hexachlorobutadiene	U	<0.540	<5.00	<0.540	μg/L	1	0.540	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	μg/L	1	50.0	101	75.3 - 131
Toluene-d8		48.2	μg/L	1	50.0	96	91.4 - 112
4-Bromofluorobenzene (4-BFB)		46.9	μg/L	1	50.0	94	83.8 - 108

Method Blank (1)

QC Batch:	59454	Date Analyzed:	2009-05-13	Analyzed By:	KB
Prep Batch:	50739	QC Preparation:	2009-05-13	Prepared By:	KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45
Chloromethane (methyl chloride)		<0.590	μg/L	0.59
Vinyl Chloride		<0.690	μg/L	0.69
Bromomethane (methyl bromide)		<0.750	μg/L	0.75
Chloroethane		<0.570	μg/L	0.57
Trichlorofluoromethane		<0.470	μg/L	0.47
Acetone		2.03	μg/L	1.75
Iodomethane (methyl iodide)		<0.320	μg/L	0.32
Carbon Disulfide		<0.250	μg/L	0.25
Acrylonitrile		<0.320	μg/L	0.32
2-Butanone (MEK)		<0.810	μg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	μg/L	0.79
2-Hexanone		<0.510	μg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	μg/L	0.49
1,1-Dichloroethene		<0.400	μg/L	0.4
Methylene chloride		<0.450	μg/L	0.45
MTBE		<0.400	μg/L	0.4
trans-1,2-Dichloroethene		<0.330	μg/L	0.33
1,1-Dichloroethane		<0.290	μg/L	0.29
cis-1,2-Dichloroethene		<0.200	μg/L	0.2
2,2-Dichloropropane		<0.420	μg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	μg/L	0.35
Chloroform		<0.270	μg/L	0.27
1,1,1-Trichloroethane		<0.230	μg/L	0.23
1,1-Dichloropropene		<0.340	μg/L	0.34
Benzene		<0.240	μg/L	0.24
Carbon Tetrachloride		<0.300	μg/L	0.3
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.2	μg/L	1	50.0	104	75.3 - 131
Toluene-d8		48.4	μg/L	1	50.0	97	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.8	μg/L	1	50.0	98	83.8 - 108

Method Blank (1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45
Chloromethane (methyl chloride)		<0.590	μg/L	0.59
Vinyl Chloride		<0.690	μg/L	0.69
Bromomethane (methyl bromide)		<0.750	μg/L	0.75
Chloroethane		<0.570	μg/L	0.57
Trichlorofluoromethane		<0.470	μg/L	0.47

continued . . .

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
Acetone		2.30	μg/L	1.75
Iodomethane (methyl iodide)		<0.320	μg/L	0.32
Carbon Disulfide		<0.250	μg/L	0.25
Acrylonitrile		<0.320	μg/L	0.32
2-Butanone (MEK)		<0.810	μg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	μg/L	0.79
2-Hexanone		<0.510	μg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	μg/L	0.49
1,1-Dichloroethene		<0.400	μg/L	0.4
Methylene chloride		<0.450	μg/L	0.45
MTBE		<0.400	μg/L	0.4
trans-1,2-Dichloroethene		<0.330	μg/L	0.33
1,1-Dichloroethane		<0.290	μg/L	0.29
cis-1,2-Dichloroethene		<0.200	μg/L	0.2
2,2-Dichloropropane		<0.420	μg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	μg/L	0.35
Chloroform		<0.270	μg/L	0.27
1,1,1-Trichloroethane		<0.230	μg/L	0.23
1,1-Dichloropropene		<0.340	μg/L	0.34
Benzene		<0.240	μg/L	0.24
Carbon Tetrachloride		<0.300	μg/L	0.3
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		0.450	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31

continued . . .

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.8	μg/L	1	50.0	96	75.3 - 131
Toluene-d8		49.4	μg/L	1	50.0	99	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.0	μg/L	1	50.0	96	83.8 - 108

Method Blank (1)

QC Batch: 59566 Date Analyzed: 2009-05-18 Analyzed By: ER
Prep Batch: 50843 QC Preparation: 2009-05-18 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0909	mg/L	1	0.100	91	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0896	mg/L	1	0.100	90	63.6 - 117

Method Blank (1)

QC Batch: 59665 Date Analyzed: 2009-05-20 Analyzed By: SS
Prep Batch: 50927 QC Preparation: 2009-05-19 Prepared By: SS

Parameter	Flag	Result	Units	Reporting Limits
Total Dissolved Solids		<5.000	mg/L	5

Duplicate (1) Duplicated Sample: 195993

QC Batch:	59665	Date Analyzed:	2009-05-20	Analyzed By:	SS
Prep Batch:	50927	QC Preparation:	2009-05-19	Prepared By:	SS

Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids	375.0	373.0	mg/L	1	0	10

Laboratory Control Spike (LCS-1)

QC Batch:	59454	Date Analyzed:	2009-05-13	Analyzed By:	KB
Prep Batch:	50739	QC Preparation:	2009-05-13	Prepared By:	KB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	52.3	μg/L	1	50.0	<0.370	105	80.2 - 127
Dichlorodifluoromethane	38.6	μg/L	1	50.0	<0.450	77	37.7 - 159
Chloromethane (methyl chloride)	53.9	μg/L	1	50.0	<0.590	108	46.1 - 146
Vinyl Chloride	52.9	μg/L	1	50.0	<0.690	106	49.9 - 145
Bromomethane (methyl bromide)	62.3	μg/L	1	50.0	<0.750	125	48.1 - 144
Chloroethane	60.8	μg/L	1	50.0	<0.570	122	50.1 - 138
Trichlorofluoromethane	57.7	μg/L	1	50.0	<0.470	115	54.8 - 151
Acetone	38.8	μg/L	1	50.0	2.03	78	19.1 - 189
Iodomethane (methyl iodide)	53.4	μg/L	1	50.0	<0.320	107	77.6 - 134
Carbon Disulfide	54.1	μg/L	1	50.0	<0.250	108	67.9 - 138
Acrylonitrile	48.2	μg/L	1	50.0	<0.320	96	76.7 - 131
2-Butanone (MEK)	36.4	μg/L	1	50.0	<0.810	73	39.9 - 171
4-Methyl-2-pentanone (MIBK)	50.2	μg/L	1	50.0	<0.790	100	68.6 - 133
2-Hexanone	40.4	μg/L	1	50.0	<0.510	81	43.4 - 167
trans 1,4-Dichloro-2-butene	59.5	μg/L	1	50.0	<0.490	119	40.2 - 160
1,1-Dichloroethene	48.3	μg/L	1	50.0	<0.400	97	77 - 127
Methylene chloride	46.7	μg/L	1	50.0	<0.450	93	73.7 - 133
MTBE	47.7	μg/L	1	50.0	<0.400	95	81.3 - 125
trans-1,2-Dichloroethene	51.0	μg/L	1	50.0	<0.330	102	75.9 - 131
1,1-Dichloroethane	51.1	μg/L	1	50.0	<0.290	102	73.3 - 135
cis-1,2-Dichloroethene	51.3	μg/L	1	50.0	<0.200	103	76.7 - 132
2,2-Dichloropropane	54.1	μg/L	1	50.0	<0.420	108	57.1 - 147
1,2-Dichloroethane (EDC)	51.6	μg/L	1	50.0	<0.350	103	75.5 - 129
Chloroform	50.8	μg/L	1	50.0	<0.270	102	75.8 - 129
1,1,1-Trichloroethane	53.6	μg/L	1	50.0	<0.230	107	80.2 - 126
1,1-Dichloropropene	51.0	μg/L	1	50.0	<0.340	102	89.2 - 120
Benzene	48.9	μg/L	1	50.0	<0.240	98	86.6 - 116
Carbon Tetrachloride	53.8	μg/L	1	50.0	<0.300	108	76.6 - 133
1,2-Dichloropropane	49.7	μg/L	1	50.0	<0.360	99	85.6 - 121
Trichloroethene (TCE)	50.4	μg/L	1	50.0	<0.300	101	80.2 - 127
Dibromomethane (methylene bromide)	50.0	μg/L	1	50.0	<0.470	100	88.7 - 118
Bromodichloromethane	51.6	μg/L	1	50.0	<0.280	103	82.4 - 129

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
2-Chloroethyl vinyl ether	47.6	μg/L	1	50.0	<0.330	95	12.4 - 157
cis-1,3-Dichloropropene	53.6	μg/L	1	50.0	<0.330	107	89 - 121
trans-1,3-Dichloropropene	53.5	μg/L	1	50.0	<0.380	107	85.3 - 125
Toluene	47.6	μg/L	1	50.0	<0.270	95	86.6 - 117
1,1,2-Trichloroethane	48.4	μg/L	1	50.0	<0.280	97	87.5 - 117
1,3-Dichloropropane	48.9	μg/L	1	50.0	<0.270	98	87.9 - 118
Dibromochloromethane	54.4	μg/L	1	50.0	<0.320	109	69.4 - 135
1,2-Dibromoethane (EDB)	49.4	μg/L	1	50.0	<0.340	99	88.3 - 121
Tetrachloroethene (PCE)	42.0	μg/L	1	50.0	<0.280	84	49.4 - 137
Chlorobenzene	48.2	μg/L	1	50.0	<0.260	96	86.9 - 116
1,1,1,2-Tetrachloroethane	51.8	μg/L	1	50.0	<0.220	104	83.7 - 125
Ethylbenzene	48.9	μg/L	1	50.0	<0.260	98	88.4 - 115
m,p-Xylene	99.8	μg/L	1	100	<0.540	100	86.7 - 116
Bromoform	51.9	μg/L	1	50.0	<0.230	104	71.8 - 119
Styrene	52.6	μg/L	1	50.0	<0.210	105	86.4 - 117
o-Xylene	51.2	μg/L	1	50.0	<0.260	102	86.4 - 120
1,1,2,2-Tetrachloroethane	54.0	μg/L	1	50.0	<0.420	108	71 - 131
2-Chlorotoluene	48.1	μg/L	1	50.0	<0.240	96	85 - 120
1,2,3-Trichloropropane	53.7	μg/L	1	50.0	<0.430	107	78.1 - 137
Isopropylbenzene	50.1	μg/L	1	50.0	<0.260	100	84 - 127
Bromobenzene	45.4	μg/L	1	50.0	<0.260	91	84.2 - 121
n-Propylbenzene	49.0	μg/L	1	50.0	<0.310	98	81.1 - 122
1,3,5-Trimethylbenzene	49.2	μg/L	1	50.0	<0.270	98	84.7 - 121
tert-Butylbenzene	51.0	μg/L	1	50.0	<0.300	102	82 - 122
1,2,4-Trimethylbenzene	50.0	μg/L	1	50.0	<0.290	100	84.6 - 124
1,4-Dichlorobenzene (para)	46.7	μg/L	1	50.0	<0.240	93	84.6 - 114
sec-Butylbenzene	50.4	μg/L	1	50.0	<0.280	101	81.7 - 124
1,3-Dichlorobenzene (meta)	47.7	μg/L	1	50.0	<0.310	95	85.6 - 116
p-Isopropyltoluene	52.2	μg/L	1	50.0	<0.330	104	81.4 - 124
4-Chlorotoluene	47.0	μg/L	1	50.0	<0.290	94	85.8 - 121
1,2-Dichlorobenzene (ortho)	47.5	μg/L	1	50.0	<0.270	95	86.5 - 118
n-Butylbenzene	51.9	μg/L	1	50.0	<0.300	104	81.2 - 129
1,2-Dibromo-3-chloropropane	53.3	μg/L	1	50.0	<0.680	107	71.7 - 128
1,2,3-Trichlorobenzene	50.1	μg/L	1	50.0	<0.330	100	79.5 - 126
1,2,4-Trichlorobenzene	49.8	μg/L	1	50.0	<0.340	100	64.5 - 126
Naphthalene	50.7	μg/L	1	50.0	<0.280	101	67.7 - 127
Hexachlorobutadiene	50.7	μg/L	1	50.0	<0.540	101	76.7 - 134

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.6	μg/L	1	50.0	<0.370	103	80.2 - 127	1	20
Dichlorodifluoromethane	35.4	μg/L	1	50.0	<0.450	71	37.7 - 159	9	20
Chloromethane (methyl chloride)	52.4	μg/L	1	50.0	<0.590	105	46.1 - 146	3	20
Vinyl Chloride	51.7	μg/L	1	50.0	<0.690	103	49.9 - 145	2	20
Bromomethane (methyl bromide)	59.1	μg/L	1	50.0	<0.750	118	48.1 - 144	5	20
Chloroethane	59.1	μg/L	1	50.0	<0.570	118	50.1 - 138	3	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Trichlorofluoromethane	55.0	µg/L	1	50.0	<0.470	110	54.8 - 151	5	20
Acetone	38.9	µg/L	1	50.0	2.03	78	19.1 - 189	0	20
Iodomethane (methyl iodide)	51.3	µg/L	1	50.0	<0.320	103	77.6 - 134	4	20
Carbon Disulfide	51.5	µg/L	1	50.0	<0.250	103	67.9 - 138	5	20
Acrylonitrile	48.2	µg/L	1	50.0	<0.320	96	76.7 - 131	0	20
2-Butanone (MEK)	37.0	µg/L	1	50.0	<0.810	74	39.9 - 171	2	20
4-Methyl-2-pentanone (MIBK)	51.1	µg/L	1	50.0	<0.790	102	68.6 - 133	2	20
2-Hexanone	40.3	µg/L	1	50.0	<0.510	81	43.4 - 167	0	20
trans 1,4-Dichloro-2-butene	57.4	µg/L	1	50.0	<0.490	115	40.2 - 160	4	20
1,1-Dichloroethene	47.4	µg/L	1	50.0	<0.400	95	77 - 127	2	20
Methylene chloride	45.4	µg/L	1	50.0	<0.450	91	73.7 - 133	3	20
MTBE	46.1	µg/L	1	50.0	<0.400	92	81.3 - 125	3	20
trans-1,2-Dichloroethene	49.2	µg/L	1	50.0	<0.330	98	75.9 - 131	4	20
1,1-Dichloroethane	49.6	µg/L	1	50.0	<0.290	99	73.3 - 135	3	20
cis-1,2-Dichloroethene	49.4	µg/L	1	50.0	<0.200	99	76.7 - 132	4	20
2,2-Dichloropropane	51.1	µg/L	1	50.0	<0.420	102	57.1 - 147	6	20
1,2-Dichloroethane (EDC)	50.7	µg/L	1	50.0	<0.350	101	75.5 - 129	2	20
Chloroform	49.7	µg/L	1	50.0	<0.270	99	75.8 - 129	2	20
1,1,1-Trichloroethane	51.3	µg/L	1	50.0	<0.230	103	80.2 - 126	4	20
1,1-Dichloropropene	50.1	µg/L	1	50.0	<0.340	100	89.2 - 120	2	20
Benzene	48.5	µg/L	1	50.0	<0.240	97	86.6 - 116	1	20
Carbon Tetrachloride	53.4	µg/L	1	50.0	<0.300	107	76.6 - 133	1	20
1,2-Dichloropropane	49.0	µg/L	1	50.0	<0.360	98	85.6 - 121	1	20
Trichloroethene (TCE)	50.2	µg/L	1	50.0	<0.300	100	80.2 - 127	0	20
Dibromomethane (methylene bromide)	49.8	µg/L	1	50.0	<0.470	100	88.7 - 118	0	20
Bromodichloromethane	51.7	µg/L	1	50.0	<0.280	103	82.4 - 129	0	20
2-Chloroethyl vinyl ether	42.6	µg/L	1	50.0	<0.330	85	12.4 - 157	11	20
cis-1,3-Dichloropropene	52.8	µg/L	1	50.0	<0.330	106	89 - 121	2	20
trans-1,3-Dichloropropene	52.5	µg/L	1	50.0	<0.380	105	85.3 - 125	2	20
Toluene	47.1	µg/L	1	50.0	<0.270	94	86.6 - 117	1	20
1,1,2-Trichloroethane	48.5	µg/L	1	50.0	<0.280	97	87.5 - 117	0	20
1,3-Dichloropropane	48.6	µg/L	1	50.0	<0.270	97	87.9 - 118	1	20
Dibromochloromethane	54.9	µg/L	1	50.0	<0.320	110	69.4 - 135	1	20
1,2-Dibromoethane (EDB)	49.6	µg/L	1	50.0	<0.340	99	88.3 - 121	0	20
Tetrachloroethene (PCE)	46.8	µg/L	1	50.0	<0.280	94	49.4 - 137	11	20
Chlorobenzene	48.3	µg/L	1	50.0	<0.260	97	86.9 - 116	0	20
1,1,1,2-Tetrachloroethane	51.4	µg/L	1	50.0	<0.220	103	83.7 - 125	1	20
Ethylbenzene	48.4	µg/L	1	50.0	<0.260	97	88.4 - 115	1	20
m,p-Xylene	98.6	µg/L	1	100	<0.540	99	86.7 - 116	1	20
Bromoform	52.2	µg/L	1	50.0	<0.230	104	71.8 - 119	1	20
Styrene	51.8	µg/L	1	50.0	<0.210	104	86.4 - 117	2	20
o-Xylene	51.0	µg/L	1	50.0	<0.260	102	86.4 - 120	0	20
1,1,2,2-Tetrachloroethane	53.1	µg/L	1	50.0	<0.420	106	71 - 131	2	20
2-Chlorotoluene	47.6	µg/L	1	50.0	<0.240	95	85 - 120	1	20
1,2,3-Trichloropropane	52.6	µg/L	1	50.0	<0.430	105	78.1 - 137	2	20
Isopropylbenzene	50.1	µg/L	1	50.0	<0.260	100	84 - 127	0	20
Bromobenzene	45.1	µg/L	1	50.0	<0.260	90	84.2 - 121	1	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
n-Propylbenzene	48.0	μg/L	1	50.0	<0.310	96	81.1 - 122	2	20
1,3,5-Trimethylbenzene	48.4	μg/L	1	50.0	<0.270	97	84.7 - 121	2	20
tert-Butylbenzene	50.6	μg/L	1	50.0	<0.300	101	82 - 122	1	20
1,2,4-Trimethylbenzene	49.5	μg/L	1	50.0	<0.290	99	84.6 - 124	1	20
1,4-Dichlorobenzene (para)	46.1	μg/L	1	50.0	<0.240	92	84.6 - 114	1	20
sec-Butylbenzene	50.4	μg/L	1	50.0	<0.280	101	81.7 - 124	0	20
1,3-Dichlorobenzene (meta)	47.2	μg/L	1	50.0	<0.310	94	85.6 - 116	1	20
p-Isopropyltoluene	51.3	μg/L	1	50.0	<0.330	103	81.4 - 124	2	20
4-Chlorotoluene	47.4	μg/L	1	50.0	<0.290	95	85.8 - 121	1	20
1,2-Dichlorobenzene (ortho)	47.1	μg/L	1	50.0	<0.270	94	86.5 - 118	1	20
n-Butylbenzene	51.1	μg/L	1	50.0	<0.300	102	81.2 - 129	2	20
1,2-Dibromo-3-chloropropane	53.5	μg/L	1	50.0	<0.680	107	71.7 - 128	0	20
1,2,3-Trichlorobenzene	49.7	μg/L	1	50.0	<0.330	99	79.5 - 126	1	20
1,2,4-Trichlorobenzene	49.9	μg/L	1	50.0	<0.340	100	64.5 - 126	0	20
Naphthalene	51.5	μg/L	1	50.0	<0.280	103	67.7 - 127	2	20
Hexachlorobutadiene	50.5	μg/L	1	50.0	<0.540	101	76.7 - 134	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	49.7	49.6	μg/L	1	50.0	99	99	77.3 - 126
Toluene-d8	46.8	47.5	μg/L	1	50.0	94	95	91.9 - 108
4-Bromofluorobenzene (4-BFB)	50.3	51.7	μg/L	1	50.0	101	103	93 - 107

Laboratory Control Spike (LCS-1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	47.7	μg/L	1	50.0	<0.370	95	80.2 - 127
Dichlorodifluoromethane	30.7	μg/L	1	50.0	<0.450	61	37.7 - 159
Chloromethane (methyl chloride)	41.1	μg/L	1	50.0	<0.590	82	46.1 - 146
Vinyl Chloride	39.4	μg/L	1	50.0	<0.690	79	49.9 - 145
Bromomethane (methyl bromide)	43.4	μg/L	1	50.0	<0.750	87	48.1 - 144
Chloroethane	43.7	μg/L	1	50.0	<0.570	87	50.1 - 138
Trichlorofluoromethane	41.1	μg/L	1	50.0	<0.470	82	54.8 - 151
Acetone	32.8	μg/L	1	50.0	2.3	66	19.1 - 189
Iodomethane (methyl iodide)	48.9	μg/L	1	50.0	<0.320	98	77.6 - 134
Carbon Disulfide	49.0	μg/L	1	50.0	<0.250	98	67.9 - 138
Acrylonitrile	44.2	μg/L	1	50.0	<0.320	88	76.7 - 131
2-Butanone (MEK)	33.4	μg/L	1	50.0	<0.810	67	39.9 - 171
4-Methyl-2-pentanone (MIBK)	46.6	μg/L	1	50.0	<0.790	93	68.6 - 133
2-Hexanone	35.8	μg/L	1	50.0	<0.510	72	43.4 - 167
trans 1,4-Dichloro-2-butene	51.3	μg/L	1	50.0	<0.490	103	40.2 - 160

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,1-Dichloroethene	45.3	μg/L	1	50.0	<0.400	91	77 - 127
Methylene chloride	42.7	μg/L	1	50.0	<0.450	85	73.7 - 133
MTBE	48.8	μg/L	1	50.0	<0.400	98	81.3 - 125
trans-1,2-Dichloroethene	47.1	μg/L	1	50.0	<0.330	94	75.9 - 131
1,1-Dichloroethane	48.5	μg/L	1	50.0	<0.290	97	73.3 - 135
cis-1,2-Dichloroethene	47.5	μg/L	1	50.0	<0.200	95	76.7 - 132
2,2-Dichloropropane	55.7	μg/L	1	50.0	<0.420	111	57.1 - 147
1,2-Dichloroethane (EDC)	49.0	μg/L	1	50.0	<0.350	98	75.5 - 129
Chloroform	47.2	μg/L	1	50.0	<0.270	94	75.8 - 129
1,1,1-Trichloroethane	50.2	μg/L	1	50.0	<0.230	100	80.2 - 126
1,1-Dichloropropene	49.9	μg/L	1	50.0	<0.340	100	89.2 - 120
Benzene	47.9	μg/L	1	50.0	<0.240	96	86.6 - 116
Carbon Tetrachloride	52.1	μg/L	1	50.0	<0.300	104	76.6 - 133
1,2-Dichloropropane	48.0	μg/L	1	50.0	<0.360	96	85.6 - 121
Trichloroethene (TCE)	48.0	μg/L	1	50.0	<0.300	96	80.2 - 127
Dibromomethane (methylene bromide)	47.9	μg/L	1	50.0	<0.470	96	88.7 - 118
Bromodichloromethane	50.8	μg/L	1	50.0	<0.280	102	82.4 - 129
2-Chloroethyl vinyl ether	26.2	μg/L	1	50.0	<0.330	52	12.4 - 157
cis-1,3-Dichloropropene	52.2	μg/L	1	50.0	<0.330	104	89 - 121
trans-1,3-Dichloropropene	51.2	μg/L	1	50.0	<0.380	102	85.3 - 125
Toluene	46.9	μg/L	1	50.0	0.45	94	86.6 - 117
1,1,2-Trichloroethane	49.0	μg/L	1	50.0	<0.280	98	87.5 - 117
1,3-Dichloropropane	49.7	μg/L	1	50.0	<0.270	99	87.9 - 118
Dibromochloromethane	55.2	μg/L	1	50.0	<0.320	110	69.4 - 135
1,2-Dibromoethane (EDB)	49.9	μg/L	1	50.0	<0.340	100	88.3 - 121
Tetrachloroethene (PCE)	41.2	μg/L	1	50.0	<0.280	82	49.4 - 137
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	86.9 - 116
1,1,1,2-Tetrachloroethane	53.6	μg/L	1	50.0	<0.220	107	83.7 - 125
Ethylbenzene	50.5	μg/L	1	50.0	<0.260	101	88.4 - 115
m,p-Xylene	103	μg/L	1	100	<0.540	103	86.7 - 116
Bromoform	52.4	μg/L	1	50.0	<0.230	105	71.8 - 119
Styrene	53.5	μg/L	1	50.0	<0.210	107	86.4 - 117
o-Xylene	52.8	μg/L	1	50.0	<0.260	106	86.4 - 120
1,1,2,2-Tetrachloroethane	54.1	μg/L	1	50.0	<0.420	108	71 - 131
2-Chlorotoluene	51.1	μg/L	1	50.0	<0.240	102	85 - 120
1,2,3-Trichloropropane	56.8	μg/L	1	50.0	<0.430	114	78.1 - 137
Isopropylbenzene	54.1	μg/L	1	50.0	<0.260	108	84 - 127
Bromobenzene	51.0	μg/L	1	50.0	<0.260	102	84.2 - 121
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	81.1 - 122
1,3,5-Trimethylbenzene	52.0	μg/L	1	50.0	<0.270	104	84.7 - 121
tert-Butylbenzene	54.7	μg/L	1	50.0	<0.300	109	82 - 122
1,2,4-Trimethylbenzene	53.2	μg/L	1	50.0	<0.290	106	84.6 - 124
1,4-Dichlorobenzene (para)	48.0	μg/L	1	50.0	<0.240	96	84.6 - 114
sec-Butylbenzene	53.7	μg/L	1	50.0	<0.280	107	81.7 - 124
1,3-Dichlorobenzene (meta)	48.8	μg/L	1	50.0	<0.310	98	85.6 - 116
p-Isopropyltoluene	54.3	μg/L	1	50.0	<0.330	109	81.4 - 124
4-Chlorotoluene	50.7	μg/L	1	50.0	<0.290	101	85.8 - 121

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,2-Dichlorobenzene (ortho)	48.9	μg/L	1	50.0	<0.270	98	86.5 - 118
n-Butylbenzene	54.2	μg/L	1	50.0	<0.300	108	81.2 - 129
1,2-Dibromo-3-chloropropane	55.3	μg/L	1	50.0	<0.680	111	71.7 - 128
1,2,3-Trichlorobenzene	51.5	μg/L	1	50.0	<0.330	103	79.5 - 126
1,2,4-Trichlorobenzene	52.7	μg/L	1	50.0	<0.340	105	64.5 - 126
Naphthalene	52.1	μg/L	1	50.0	<0.280	104	67.7 - 127
Hexachlorobutadiene	54.0	μg/L	1	50.0	<0.540	108	76.7 - 134

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	48.2	μg/L	1	50.0	<0.370	96	80.2 - 127	1	20
Dichlorodifluoromethane	31.1	μg/L	1	50.0	<0.450	62	37.7 - 159	1	20
Chloromethane (methyl chloride)	42.7	μg/L	1	50.0	<0.590	85	46.1 - 146	4	20
Vinyl Chloride	40.4	μg/L	1	50.0	<0.690	81	49.9 - 145	2	20
Bromomethane (methyl bromide)	47.7	μg/L	1	50.0	<0.750	95	48.1 - 144	9	20
Chloroethane	46.3	μg/L	1	50.0	<0.570	93	50.1 - 138	6	20
Trichlorofluoromethane	43.7	μg/L	1	50.0	<0.470	87	54.8 - 151	6	20
Acetone	32.1	μg/L	1	50.0	2.3	64	19.1 - 189	2	20
Iodomethane (methyl iodide)	50.6	μg/L	1	50.0	<0.320	101	77.6 - 134	3	20
Carbon Disulfide	49.0	μg/L	1	50.0	<0.250	98	67.9 - 138	0	20
Acrylonitrile	45.2	μg/L	1	50.0	<0.320	90	76.7 - 131	2	20
2-Butanone (MEK)	34.9	μg/L	1	50.0	<0.810	70	39.9 - 171	4	20
4-Methyl-2-pentanone (MIBK)	48.8	μg/L	1	50.0	<0.790	98	68.6 - 133	5	20
2-Hexanone	37.6	μg/L	1	50.0	<0.510	75	43.4 - 167	5	20
trans 1,4-Dichloro-2-butene	52.3	μg/L	1	50.0	<0.490	105	40.2 - 160	2	20
1,1-Dichloroethene	44.9	μg/L	1	50.0	<0.400	90	77 - 127	1	20
Methylene chloride	43.1	μg/L	1	50.0	<0.450	86	73.7 - 133	1	20
MTBE	48.4	μg/L	1	50.0	<0.400	97	81.3 - 125	1	20
trans-1,2-Dichloroethene	47.6	μg/L	1	50.0	<0.330	95	75.9 - 131	1	20
1,1-Dichloroethane	47.9	μg/L	1	50.0	<0.290	96	73.3 - 135	1	20
cis-1,2-Dichloroethene	48.0	μg/L	1	50.0	<0.200	96	76.7 - 132	1	20
2,2-Dichloropropane	54.7	μg/L	1	50.0	<0.420	109	57.1 - 147	2	20
1,2-Dichloroethane (EDC)	49.8	μg/L	1	50.0	<0.350	100	75.5 - 129	2	20
Chloroform	47.9	μg/L	1	50.0	<0.270	96	75.8 - 129	2	20
1,1,1-Trichloroethane	51.6	μg/L	1	50.0	<0.230	103	80.2 - 126	3	20
1,1-Dichloropropene	49.9	μg/L	1	50.0	<0.340	100	89.2 - 120	0	20
Benzene	48.1	μg/L	1	50.0	<0.240	96	86.6 - 116	0	20
Carbon Tetrachloride	53.7	μg/L	1	50.0	<0.300	107	76.6 - 133	3	20
1,2-Dichloropropane	49.0	μg/L	1	50.0	<0.360	98	85.6 - 121	2	20
Trichloroethene (TCE)	48.9	μg/L	1	50.0	<0.300	98	80.2 - 127	2	20
Dibromomethane (methylene bromide)	48.5	μg/L	1	50.0	<0.470	97	88.7 - 118	1	20
Bromodichloromethane	50.8	μg/L	1	50.0	<0.280	102	82.4 - 129	0	20
2-Chloroethyl vinyl ether	29.5	μg/L	1	50.0	<0.330	59	12.4 - 157	12	20
cis-1,3-Dichloropropene	52.8	μg/L	1	50.0	<0.330	106	89 - 121	1	20
trans-1,3-Dichloropropene	53.2	μg/L	1	50.0	<0.380	106	85.3 - 125	4	20
Toluene	47.3	μg/L	1	50.0	0.45	95	86.6 - 117	1	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,2-Trichloroethane	48.3	μg/L	1	50.0	<0.280	97	87.5 - 117	1	20
1,3-Dichloropropane	49.7	μg/L	1	50.0	<0.270	99	87.9 - 118	0	20
Dibromochloromethane	55.2	μg/L	1	50.0	<0.320	110	69.4 - 135	0	20
1,2-Dibromoethane (EDB)	50.4	μg/L	1	50.0	<0.340	101	88.3 - 121	1	20
Tetrachloroethene (PCE)	45.9	μg/L	1	50.0	<0.280	92	49.4 - 137	11	20
Chlorobenzene	49.0	μg/L	1	50.0	<0.260	98	86.9 - 116	0	20
1,1,1,2-Tetrachloroethane	52.6	μg/L	1	50.0	<0.220	105	83.7 - 125	2	20
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	88.4 - 115	1	20
m,p-Xylene	102	μg/L	1	100	<0.540	102	86.7 - 116	1	20
Bromoform	52.7	μg/L	1	50.0	<0.230	105	71.8 - 119	1	20
Styrene	53.0	μg/L	1	50.0	<0.210	106	86.4 - 117	1	20
o-Xylene	52.2	μg/L	1	50.0	<0.260	104	86.4 - 120	1	20
1,1,2,2-Tetrachloroethane	52.7	μg/L	1	50.0	<0.420	105	71 - 131	3	20
2-Chlorotoluene	50.9	μg/L	1	50.0	<0.240	102	85 - 120	0	20
1,2,3-Trichloropropane	56.5	μg/L	1	50.0	<0.430	113	78.1 - 137	0	20
Isopropylbenzene	53.9	μg/L	1	50.0	<0.260	108	84 - 127	0	20
Bromobenzene	48.4	μg/L	1	50.0	<0.260	97	84.2 - 121	5	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	81.1 - 122	0	20
1,3,5-Trimethylbenzene	51.9	μg/L	1	50.0	<0.270	104	84.7 - 121	0	20
tert-Butylbenzene	53.8	μg/L	1	50.0	<0.300	108	82 - 122	2	20
1,2,4-Trimethylbenzene	52.3	μg/L	1	50.0	<0.290	105	84.6 - 124	2	20
1,4-Dichlorobenzene (para)	47.7	μg/L	1	50.0	<0.240	95	84.6 - 114	1	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	81.7 - 124	0	20
1,3-Dichlorobenzene (meta)	49.2	μg/L	1	50.0	<0.310	98	85.6 - 116	1	20
p-Isopropyltoluene	54.1	μg/L	1	50.0	<0.330	108	81.4 - 124	0	20
4-Chlorotoluene	50.7	μg/L	1	50.0	<0.290	101	85.8 - 121	0	20
1,2-Dichlorobenzene (ortho)	49.1	μg/L	1	50.0	<0.270	98	86.5 - 118	0	20
n-Butylbenzene	54.2	μg/L	1	50.0	<0.300	108	81.2 - 129	0	20
1,2-Dibromo-3-chloropropane	56.4	μg/L	1	50.0	<0.680	113	71.7 - 128	2	20
1,2,3-Trichlorobenzene	52.4	μg/L	1	50.0	<0.330	105	79.5 - 126	2	20
1,2,4-Trichlorobenzene	53.3	μg/L	1	50.0	<0.340	107	64.5 - 126	1	20
Naphthalene	52.7	μg/L	1	50.0	<0.280	105	67.7 - 127	1	20
Hexachlorobutadiene	55.3	μg/L	1	50.0	<0.540	111	76.7 - 134	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	47.0	47.4	μg/L	1	50.0	94	95	77.3 - 126
Toluene-d8	49.7	48.9	μg/L	1	50.0	99	98	91.9 - 108
4-Bromofluorobenzene (4-BFB)	51.6	50.8	μg/L	1	50.0	103	102	93 - 107

Laboratory Control Spike (LCS-1)

QC Batch: 59566 Date Analyzed: 2009-05-18 Analyzed By: ER
Prep Batch: 50843 QC Preparation: 2009-05-18 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	78.6 - 123

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.15	mg/L	1	1.00	<0.152	115	78.6 - 123	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0931	0.0982	mg/L	1	0.100	93	98	79.3 - 124
4-Bromofluorobenzene (4-BFB)	0.0878	0.0969	mg/L	1	0.100	88	97	80.9 - 120

Matrix Spike (MS-1) Spiked Sample: 195737

QC Batch: 59454 Date Analyzed: 2009-05-13 Analyzed By: KB
Prep Batch: 50739 QC Preparation: 2009-05-13 Prepared By: KB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	50.5	µg/L	1	50.0	<0.370	101	56.3 - 153
Dichlorodifluoromethane	20.7	µg/L	1	50.0	<0.450	41	33.3 - 142
Chloromethane (methyl chloride)	38.4	µg/L	1	50.0	<0.590	77	39.6 - 149
Vinyl Chloride	35.6	µg/L	1	50.0	<0.690	71	33.6 - 159
Bromomethane (methyl bromide)	46.1	µg/L	1	50.0	<0.750	92	35.2 - 161
Chloroethane	44.5	µg/L	1	50.0	<0.570	89	28.1 - 169
Trichlorofluoromethane	34.9	µg/L	1	50.0	<0.470	70	34.7 - 158
Acetone	30.1	µg/L	1	50.0	<1.75	60	10 - 123
Iodomethane (methyl iodide)	49.9	µg/L	1	50.0	<0.320	100	60.9 - 143
Carbon Disulfide	50.3	µg/L	1	50.0	<0.250	101	41.3 - 162
Acrylonitrile	45.4	µg/L	1	50.0	<0.320	91	37.4 - 188
2-Butanone (MEK)	31.3	µg/L	1	50.0	2.16	58	34.8 - 143
4-Methyl-2-pentanone (MIBK)	45.4	µg/L	1	50.0	<0.790	91	57.3 - 153
2-Hexanone	35.1	µg/L	1	50.0	<0.510	70	37 - 159
trans 1,4-Dichloro-2-butene	49.0	µg/L	1	50.0	<0.490	98	10 - 182
1,1-Dichloroethene	48.9	µg/L	1	50.0	<0.400	98	44.8 - 153
Methylene chloride	45.4	µg/L	1	50.0	<0.450	91	48.6 - 161
MTBE	43.5	µg/L	1	50.0	<0.400	87	45.3 - 173
trans-1,2-Dichloroethene	49.2	µg/L	1	50.0	<0.330	98	45.4 - 164
1,1-Dichloroethane	48.2	µg/L	1	50.0	<0.290	96	43.2 - 168
cis-1,2-Dichloroethene	48.3	µg/L	1	50.0	<0.200	97	48.8 - 163
2,2-Dichloropropane	40.4	µg/L	1	50.0	<0.420	81	10 - 160
1,2-Dichloroethane (EDC)	49.6	µg/L	1	50.0	<0.350	99	50.6 - 164
Chloroform	49.8	µg/L	1	50.0	1.02	98	44.7 - 162
1,1,1-Trichloroethane	50.1	µg/L	1	50.0	<0.230	100	49.4 - 158
1,1-Dichloropropene	46.2	µg/L	1	50.0	<0.340	92	50.9 - 156

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	46.0	µg/L	1	50.0	<0.240	92	59.1 - 151
Carbon Tetrachloride	49.3	µg/L	1	50.0	<0.300	99	49.2 - 155
1,2-Dichloropropane	46.2	µg/L	1	50.0	<0.360	92	50.1 - 158
Trichloroethene (TCE)	44.1	µg/L	1	50.0	<0.300	88	66 - 130
Dibromomethane (methylene bromide)	47.2	µg/L	1	50.0	<0.470	94	60.1 - 146
Bromodichloromethane	48.0	µg/L	1	50.0	<0.280	96	54.8 - 157
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.2	µg/L	1	50.0	<0.330	92	54.6 - 141
trans-1,3-Dichloropropene	47.5	µg/L	1	50.0	<0.380	95	54.2 - 143
Toluene	44.4	µg/L	1	50.0	<0.270	89	61.7 - 143
1,1,2-Trichloroethane	45.7	µg/L	1	50.0	<0.280	91	59.4 - 145
1,3-Dichloropropane	45.5	µg/L	1	50.0	<0.270	91	61.4 - 149
Dibromochloromethane	49.6	µg/L	1	50.0	<0.320	99	63.8 - 136
1,2-Dibromoethane (EDB)	45.6	µg/L	1	50.0	<0.340	91	66.2 - 140
Tetrachloroethene (PCE)	25.9	µg/L	1	50.0	<0.280	52	42.6 - 72.8
Chlorobenzene	45.3	µg/L	1	50.0	<0.260	91	67.2 - 133
1,1,1,2-Tetrachloroethane	49.0	µg/L	1	50.0	<0.220	98	59.9 - 142
Ethylbenzene	45.0	µg/L	1	50.0	<0.260	90	59.2 - 144
m,p-Xylene	91.5	µg/L	1	100	<0.540	92	59.6 - 144
Bromoform	45.4	µg/L	1	50.0	<0.230	91	56.2 - 122
Styrene	47.4	µg/L	1	50.0	<0.210	95	10 - 203
o-Xylene	47.9	µg/L	1	50.0	<0.260	96	59.9 - 151
1,1,2,2-Tetrachloroethane	52.5	µg/L	1	50.0	<0.420	105	57.9 - 160
2-Chlorotoluene	43.1	µg/L	1	50.0	<0.240	86	56.8 - 150
1,2,3-Trichloropropane	47.6	µg/L	1	50.0	<0.430	95	47.7 - 156
Isopropylbenzene	44.5	µg/L	1	50.0	<0.260	89	54.8 - 150
Bromobenzene	43.0	µg/L	1	50.0	<0.260	86	57.5 - 144
n-Propylbenzene	43.4	µg/L	1	50.0	<0.310	87	64.6 - 141
1,3,5-Trimethylbenzene	44.2	µg/L	1	50.0	<0.270	88	63.9 - 140
tert-Butylbenzene	45.7	µg/L	1	50.0	<0.300	91	61.5 - 142
1,2,4-Trimethylbenzene	44.9	µg/L	1	50.0	<0.290	90	45.5 - 157
1,4-Dichlorobenzene (para)	42.6	µg/L	1	50.0	<0.240	85	69.8 - 126
sec-Butylbenzene	45.0	µg/L	1	50.0	<0.280	90	61.9 - 144
1,3-Dichlorobenzene (meta)	43.0	µg/L	1	50.0	<0.310	86	69.4 - 131
p-Isopropyltoluene	46.1	µg/L	1	50.0	<0.330	92	59.2 - 141
4-Chlorotoluene	42.8	µg/L	1	50.0	<0.290	86	68.6 - 139
1,2-Dichlorobenzene (ortho)	43.2	µg/L	1	50.0	<0.270	86	70.4 - 132
n-Butylbenzene	45.5	µg/L	1	50.0	<0.300	91	55.7 - 146
1,2-Dibromo-3-chloropropane	46.0	µg/L	1	50.0	<0.680	92	59.6 - 136
1,2,3-Trichlorobenzene	42.9	µg/L	1	50.0	<0.330	86	54.2 - 130
1,2,4-Trichlorobenzene	43.2	µg/L	1	50.0	<0.340	86	49 - 123
Naphthalene	44.8	µg/L	1	50.0	<0.280	90	56.4 - 131
Hexachlorobutadiene	41.7	µg/L	1	50.0	<0.540	83	24.8 - 144

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.4	µg/L	1	50.0	<0.370	105	56.3 - 153	4	20
Dichlorodifluoromethane	23.8	µg/L	1	50.0	<0.450	48	33.3 - 142	14	20
Chloromethane (methyl chloride)	41.6	µg/L	1	50.0	<0.590	83	39.6 - 149	8	20
Vinyl Chloride	39.4	µg/L	1	50.0	<0.690	79	33.6 - 159	10	20
Bromomethane (methyl bromide)	43.4	µg/L	1	50.0	<0.750	87	35.2 - 161	6	20
Chloroethane	43.7	µg/L	1	50.0	<0.570	87	28.1 - 169	2	20
Trichlorofluoromethane	37.9	µg/L	1	50.0	<0.470	76	34.7 - 158	8	20
Acetone	27.2	µg/L	1	50.0	<1.75	54	10 - 123	10	20
Iodomethane (methyl iodide)	51.2	µg/L	1	50.0	<0.320	102	60.9 - 143	3	20
Carbon Disulfide	53.5	µg/L	1	50.0	<0.250	107	41.3 - 162	6	20
Acrylonitrile	47.6	µg/L	1	50.0	<0.320	95	37.4 - 188	5	20
2-Butanone (MEK)	33.4	µg/L	1	50.0	2.16	62	34.8 - 143	6	20
4-Methyl-2-pentanone (MIBK)	49.6	µg/L	1	50.0	<0.790	99	57.3 - 153	9	20
2-Hexanone	36.7	µg/L	1	50.0	<0.510	73	37 - 159	4	20
trans 1,4-Dichloro-2-butene	51.6	µg/L	1	50.0	<0.490	103	10 - 182	5	20
1,1-Dichloroethene	48.7	µg/L	1	50.0	<0.400	97	44.8 - 153	0	20
Methylene chloride	46.6	µg/L	1	50.0	<0.450	93	48.6 - 161	3	20
MTBE	47.1	µg/L	1	50.0	<0.400	94	45.3 - 173	8	20
trans-1,2-Dichloroethene	51.2	µg/L	1	50.0	<0.330	102	45.4 - 164	4	20
1,1-Dichloroethane	50.7	µg/L	1	50.0	<0.290	101	43.2 - 168	5	20
cis-1,2-Dichloroethene	50.5	µg/L	1	50.0	<0.200	101	48.8 - 163	4	20
2,2-Dichloropropane	44.3	µg/L	1	50.0	<0.420	89	10 - 160	9	20
1,2-Dichloroethane (EDC)	51.5	µg/L	1	50.0	<0.350	103	50.6 - 164	4	20
Chloroform	51.8	µg/L	1	50.0	1.02	102	44.7 - 162	4	20
1,1,1-Trichloroethane	52.0	µg/L	1	50.0	<0.230	104	49.4 - 158	4	20
1,1-Dichloropropene	50.3	µg/L	1	50.0	<0.340	101	50.9 - 156	8	20
Benzene	49.3	µg/L	1	50.0	<0.240	99	59.1 - 151	7	20
Carbon Tetrachloride	53.9	µg/L	1	50.0	<0.300	108	49.2 - 155	9	20
1,2-Dichloropropane	51.3	µg/L	1	50.0	<0.360	103	50.1 - 158	10	20
Trichloroethene (TCE)	49.0	µg/L	1	50.0	<0.300	98	66 - 130	10	20
Dibromomethane (methylene bromide)	51.0	µg/L	1	50.0	<0.470	102	60.1 - 146	8	20
Bromodichloromethane	52.2	µg/L	1	50.0	<0.280	104	54.8 - 157	8	20
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene	51.0	µg/L	1	50.0	<0.330	102	54.6 - 141	10	20
trans-1,3-Dichloropropene	51.2	µg/L	1	50.0	<0.380	102	54.2 - 143	8	20
Toluene	48.2	µg/L	1	50.0	<0.270	96	61.7 - 143	8	20
1,1,2-Trichloroethane	48.7	µg/L	1	50.0	<0.280	97	59.4 - 145	6	20
1,3-Dichloropropane	49.3	µg/L	1	50.0	<0.270	99	61.4 - 149	8	20
Dibromochloromethane	53.9	µg/L	1	50.0	<0.320	108	63.8 - 136	8	20
1,2-Dibromoethane (EDB)	49.0	µg/L	1	50.0	<0.340	98	66.2 - 140	7	20
Tetrachloroethene (PCE)	27.9	µg/L	1	50.0	<0.280	56	42.6 - 72.8	7	20
Chlorobenzene	48.7	µg/L	1	50.0	<0.260	97	67.2 - 133	7	20
1,1,1,2-Tetrachloroethane	52.2	µg/L	1	50.0	<0.220	104	59.9 - 142	6	20
Ethylbenzene	49.0	µg/L	1	50.0	<0.260	98	59.2 - 144	8	20

continued ...

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
m,p-Xylene	99.9	µg/L	1	100	<0.540	100	59.6 - 144	9	20
Bromoform	49.8	µg/L	1	50.0	<0.230	100	56.2 - 122	9	20
Styrene	50.4	µg/L	1	50.0	<0.210	101	10 - 203	6	20
o-Xylene	51.3	µg/L	1	50.0	<0.260	103	59.9 - 151	7	20
1,1,2,2-Tetrachloroethane	55.2	µg/L	1	50.0	<0.420	110	57.9 - 160	5	20
2-Chlorotoluene	47.9	µg/L	1	50.0	<0.240	96	56.8 - 150	10	20
1,2,3-Trichloropropane	52.5	µg/L	1	50.0	<0.430	105	47.7 - 156	10	20
Isopropylbenzene	50.3	µg/L	1	50.0	<0.260	101	54.8 - 150	12	20
Bromobenzene	45.5	µg/L	1	50.0	<0.260	91	57.5 - 144	6	20
n-Propylbenzene	48.6	µg/L	1	50.0	<0.310	97	64.6 - 141	11	20
1,3,5-Trimethylbenzene	48.6	µg/L	1	50.0	<0.270	97	63.9 - 140	10	20
tert-Butylbenzene	51.2	µg/L	1	50.0	<0.300	102	61.5 - 142	11	20
1,2,4-Trimethylbenzene	50.2	µg/L	1	50.0	<0.290	100	45.5 - 157	11	20
1,4-Dichlorobenzene (para)	46.4	µg/L	1	50.0	<0.240	93	69.8 - 126	8	20
sec-Butylbenzene	50.2	µg/L	1	50.0	<0.280	100	61.9 - 144	11	20
1,3-Dichlorobenzene (meta)	47.8	µg/L	1	50.0	<0.310	96	69.4 - 131	11	20
p-Isopropyltoluene	50.2	µg/L	1	50.0	<0.330	100	59.2 - 141	8	20
4-Chlorotoluene	47.7	µg/L	1	50.0	<0.290	95	68.6 - 139	11	20
1,2-Dichlorobenzene (ortho)	47.4	µg/L	1	50.0	<0.270	95	70.4 - 132	9	20
n-Butylbenzene	49.8	µg/L	1	50.0	<0.300	100	55.7 - 146	9	20
1,2-Dibromo-3-chloropropane	51.5	µg/L	1	50.0	<0.680	103	59.6 - 136	11	20
1,2,3-Trichlorobenzene	48.1	µg/L	1	50.0	<0.330	96	54.2 - 130	11	20
1,2,4-Trichlorobenzene	48.6	µg/L	1	50.0	<0.340	97	49 - 123	12	20
Naphthalene	49.5	µg/L	1	50.0	<0.280	99	56.4 - 131	10	20
Hexachlorobutadiene	48.6	µg/L	1	50.0	<0.540	97	24.8 - 144	15	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	52.8	51.0	µg/L	1	50	106	102	82.8 - 123
Toluene-d8	48.0	47.9	µg/L	1	50	96	96	92.3 - 106
4-Bromofluorobenzene (4-BFB)	52.4	52.0	µg/L	1	50	105	104	93.2 - 108

Matrix Spike (MS-1) Spiked Sample: 195743

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	46.0	µg/L	1	50.0	<0.370	92	56.3 - 153
Dichlorodifluoromethane	19.0	µg/L	1	50.0	<0.450	38	33.3 - 142
Chloromethane (methyl chloride)	36.8	µg/L	1	50.0	<0.590	74	39.6 - 149
Vinyl Chloride	34.4	µg/L	1	50.0	<0.690	69	33.6 - 159
Bromomethane (methyl bromide)	46.8	µg/L	1	50.0	<0.750	94	35.2 - 161
Chloroethane	44.7	µg/L	1	50.0	<0.570	89	28.1 - 169

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichlorofluoromethane	34.8	µg/L	1	50.0	<0.470	70	34.7 - 158
Acetone	25.8	µg/L	1	50.0	<1.75	52	10 - 123
Iodomethane (methyl iodide)	45.9	µg/L	1	50.0	<0.320	92	60.9 - 143
Carbon Disulfide	47.1	µg/L	1	50.0	<0.250	94	41.3 - 162
Acrylonitrile	41.1	µg/L	1	50.0	<0.320	82	37.4 - 188
2-Butanone (MEK)	27.1	µg/L	1	50.0	<0.810	54	34.8 - 143
4-Methyl-2-pentanone (MIBK)	43.6	µg/L	1	50.0	<0.790	87	57.3 - 153
2-Hexanone	32.7	µg/L	1	50.0	<0.510	65	37 - 159
trans 1,4-Dichloro-2-butene	40.2	µg/L	1	50.0	<0.490	80	10 - 182
1,1-Dichloroethene	44.9	µg/L	1	50.0	<0.400	90	44.8 - 153
Methylene chloride	40.9	µg/L	1	50.0	<0.450	82	48.6 - 161
MTBE	42.5	µg/L	1	50.0	<0.400	85	45.3 - 173
trans-1,2-Dichloroethene	44.8	µg/L	1	50.0	<0.330	90	45.4 - 164
1,1-Dichloroethane	44.5	µg/L	1	50.0	<0.290	89	43.2 - 168
cis-1,2-Dichloroethene	44.7	µg/L	1	50.0	<0.200	89	48.8 - 163
2,2-Dichloropropane	38.3	µg/L	1	50.0	<0.420	77	10 - 160
1,2-Dichloroethane (EDC)	46.5	µg/L	1	50.0	1.45	90	50.6 - 164
Chloroform	44.3	µg/L	1	50.0	<0.270	89	44.7 - 162
1,1,1-Trichloroethane	46.5	µg/L	1	50.0	<0.230	93	49.4 - 158
1,1-Dichloropropene	44.4	µg/L	1	50.0	<0.340	89	50.9 - 156
Benzene	43.7	µg/L	1	50.0	<0.240	87	59.1 - 151
Carbon Tetrachloride	47.6	µg/L	1	50.0	<0.300	95	49.2 - 155
1,2-Dichloropropane	44.5	µg/L	1	50.0	<0.360	89	50.1 - 158
Trichloroethene (TCE)	43.1	µg/L	1	50.0	<0.300	86	66 - 130
Dibromomethane (methylene bromide)	44.5	µg/L	1	50.0	<0.470	89	60.1 - 146
Bromodichloromethane	45.7	µg/L	1	50.0	<0.280	91	54.8 - 157
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	44.4	µg/L	1	50.0	<0.330	89	54.6 - 141
trans-1,3-Dichloropropene	45.0	µg/L	1	50.0	<0.380	90	54.2 - 143
Toluene	43.0	µg/L	1	50.0	0.38	85	61.7 - 143
1,1,2-Trichloroethane	45.4	µg/L	1	50.0	<0.280	91	59.4 - 145
1,3-Dichloropropane	45.3	µg/L	1	50.0	<0.270	91	61.4 - 149
Dibromochloromethane	49.2	µg/L	1	50.0	<0.320	98	63.8 - 136
1,2-Dibromoethane (EDB)	45.5	µg/L	1	50.0	<0.340	91	66.2 - 140
Tetrachloroethene (PCE)	25.9	µg/L	1	50.0	<0.280	52	42.6 - 72.8
Chlorobenzene	45.2	µg/L	1	50.0	<0.260	90	67.2 - 133
1,1,1,2-Tetrachloroethane	47.4	µg/L	1	50.0	<0.220	95	59.9 - 142
Ethylbenzene	44.9	µg/L	1	50.0	<0.260	90	59.2 - 144
m,p-Xylene	91.5	µg/L	1	100	<0.540	92	59.6 - 144
Bromoform	44.7	µg/L	1	50.0	<0.230	89	56.2 - 122
Styrene	47.1	µg/L	1	50.0	<0.210	94	10 - 203
o-Xylene	47.3	µg/L	1	50.0	<0.260	95	59.9 - 151
1,1,2,2-Tetrachloroethane	51.3	µg/L	1	50.0	<0.420	103	57.9 - 160
2-Chlorotoluene	44.8	µg/L	1	50.0	<0.240	90	56.8 - 150
1,2,3-Trichloropropane	51.2	µg/L	1	50.0	<0.430	102	47.7 - 156
Isopropylbenzene	47.3	µg/L	1	50.0	<0.260	95	54.8 - 150
Bromobenzene	44.5	µg/L	1	50.0	<0.260	89	57.5 - 144

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
n-Propylbenzene	45.4	μg/L	1	50.0	<0.310	91	64.6 - 141
1,3,5-Trimethylbenzene	45.4	μg/L	1	50.0	<0.270	91	63.9 - 140
tert-Butylbenzene	47.3	μg/L	1	50.0	<0.300	95	61.5 - 142
1,2,4-Trimethylbenzene	46.0	μg/L	1	50.0	<0.290	92	45.5 - 157
1,4-Dichlorobenzene (para)	43.2	μg/L	1	50.0	<0.240	86	69.8 - 126
sec-Butylbenzene	45.8	μg/L	1	50.0	<0.280	92	61.9 - 144
1,3-Dichlorobenzene (meta)	44.4	μg/L	1	50.0	<0.310	89	69.4 - 131
p-Isopropyltoluene	46.7	μg/L	1	50.0	<0.330	93	59.2 - 141
4-Chlorotoluene	44.3	μg/L	1	50.0	<0.290	89	68.6 - 139
1,2-Dichlorobenzene (ortho)	44.3	μg/L	1	50.0	<0.270	89	70.4 - 132
n-Butylbenzene	45.0	μg/L	1	50.0	<0.300	90	55.7 - 146
1,2-Dibromo-3-chloropropane	47.6	μg/L	1	50.0	<0.680	95	59.6 - 136
1,2,3-Trichlorobenzene	43.4	μg/L	1	50.0	<0.330	87	54.2 - 130
1,2,4-Trichlorobenzene	43.5	μg/L	1	50.0	<0.340	87	49 - 123
Naphthalene	45.5	μg/L	1	50.0	<0.280	91	56.4 - 131
Hexachlorobutadiene	41.2	μg/L	1	50.0	<0.540	82	24.8 - 144

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	49.9	μg/L	1	50.0	<0.370	100	56.3 - 153	8	20
Dichlorodifluoromethane	21.8	μg/L	1	50.0	<0.450	44	33.3 - 142	14	20
Chloromethane (methyl chloride)	39.8	μg/L	1	50.0	<0.590	80	39.6 - 149	8	20
Vinyl Chloride	37.8	μg/L	1	50.0	<0.690	76	33.6 - 159	9	20
Bromomethane (methyl bromide)	47.2	μg/L	1	50.0	<0.750	94	35.2 - 161	1	20
Chloroethane	45.6	μg/L	1	50.0	<0.570	91	28.1 - 169	2	20
Trichlorofluoromethane	37.6	μg/L	1	50.0	<0.470	75	34.7 - 158	8	20
Acetone	28.2	μg/L	1	50.0	<1.75	56	10 - 123	9	20
Iodomethane (methyl iodide)	49.3	μg/L	1	50.0	<0.320	99	60.9 - 143	7	20
Carbon Disulfide	48.8	μg/L	1	50.0	<0.250	98	41.3 - 162	4	20
Acrylonitrile	46.2	μg/L	1	50.0	<0.320	92	37.4 - 188	12	20
2-Butanone (MEK)	30.7	μg/L	1	50.0	<0.810	61	34.8 - 143	12	20
4-Methyl-2-pentanone (MIBK)	49.4	μg/L	1	50.0	<0.790	99	57.3 - 153	12	20
2-Hexanone	36.3	μg/L	1	50.0	<0.510	73	37 - 159	10	20
trans 1,4-Dichloro-2-butene	45.6	μg/L	1	50.0	<0.490	91	10 - 182	13	20
1,1-Dichloroethene	49.4	μg/L	1	50.0	<0.400	99	44.8 - 153	10	20
Methylene chloride	45.4	μg/L	1	50.0	<0.450	91	48.6 - 161	10	20
MTBE	47.6	μg/L	1	50.0	<0.400	95	45.3 - 173	11	20
trans-1,2-Dichloroethene	48.5	μg/L	1	50.0	<0.330	97	45.4 - 164	8	20
1,1-Dichloroethane	48.8	μg/L	1	50.0	<0.290	98	43.2 - 168	9	20
cis-1,2-Dichloroethene	48.8	μg/L	1	50.0	<0.200	98	48.8 - 163	9	20
2,2-Dichloropropane	41.0	μg/L	1	50.0	<0.420	82	10 - 160	7	20
1,2-Dichloroethane (EDC)	50.8	μg/L	1	50.0	1.45	99	50.6 - 164	9	20
Chloroform	48.2	μg/L	1	50.0	<0.270	96	44.7 - 162	8	20
1,1,1-Trichloroethane	50.6	μg/L	1	50.0	<0.230	101	49.4 - 158	8	20
1,1-Dichloropropene	48.7	μg/L	1	50.0	<0.340	97	50.9 - 156	9	20
Benzene	48.4	μg/L	1	50.0	<0.240	97	59.1 - 151	10	20

continued ...

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Carbon Tetrachloride	52.2	µg/L	1	50.0	<0.300	104	49.2 - 155	9	20
1,2-Dichloropropane	48.8	µg/L	1	50.0	<0.360	98	50.1 - 158	9	20
Trichloroethene (TCE)	47.8	µg/L	1	50.0	<0.300	96	66 - 130	10	20
Dibromomethane (methylene bromide)	48.6	µg/L	1	50.0	<0.470	97	60.1 - 146	9	20
Bromodichloromethane	50.6	µg/L	1	50.0	<0.280	101	54.8 - 157	10	20
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene	49.2	µg/L	1	50.0	<0.330	98	54.6 - 141	10	20
trans-1,3-Dichloropropene	49.4	µg/L	1	50.0	<0.380	99	54.2 - 143	9	20
Toluene	46.6	µg/L	1	50.0	0.38	92	61.7 - 143	8	20
1,1,2-Trichloroethane	50.5	µg/L	1	50.0	<0.280	101	59.4 - 145	11	20
1,3-Dichloropropane	50.1	µg/L	1	50.0	<0.270	100	61.4 - 149	10	20
Dibromochloromethane	55.2	µg/L	1	50.0	<0.320	110	63.8 - 136	12	20
1,2-Dibromoethane (EDB)	51.1	µg/L	1	50.0	<0.340	102	66.2 - 140	12	20
Tetrachloroethene (PCE)	28.7	µg/L	1	50.0	<0.280	57	42.6 - 72.8	10	20
Chlorobenzene	49.4	µg/L	1	50.0	<0.260	99	67.2 - 133	9	20
1,1,1,2-Tetrachloroethane	53.3	µg/L	1	50.0	<0.220	107	59.9 - 142	12	20
Ethylbenzene	49.8	µg/L	1	50.0	<0.260	100	59.2 - 144	10	20
m,p-Xylene	101	µg/L	1	100	<0.540	101	59.6 - 144	10	20
Bromoform	50.8	µg/L	1	50.0	<0.230	102	56.2 - 122	13	20
Styrene	52.8	µg/L	1	50.0	<0.210	106	10 - 203	11	20
o-Xylene	52.9	µg/L	1	50.0	<0.260	106	59.9 - 151	11	20
1,1,2,2-Tetrachloroethane	57.4	µg/L	1	50.0	<0.420	115	57.9 - 160	11	20
2-Chlorotoluene	49.4	µg/L	1	50.0	<0.240	99	56.8 - 150	10	20
1,2,3-Trichloropropane	56.7	µg/L	1	50.0	<0.430	113	47.7 - 156	10	20
Isopropylbenzene	51.7	µg/L	1	50.0	<0.260	103	54.8 - 150	9	20
Bromobenzene	49.8	µg/L	1	50.0	<0.260	100	57.5 - 144	11	20
n-Propylbenzene	50.0	µg/L	1	50.0	<0.310	100	64.6 - 141	10	20
1,3,5-Trimethylbenzene	50.0	µg/L	1	50.0	<0.270	100	63.9 - 140	10	20
tert-Butylbenzene	52.6	µg/L	1	50.0	<0.300	105	61.5 - 142	11	20
1,2,4-Trimethylbenzene	51.2	µg/L	1	50.0	<0.290	102	45.5 - 157	11	20
1,4-Dichlorobenzene (para)	47.1	µg/L	1	50.0	<0.240	94	69.8 - 126	9	20
sec-Butylbenzene	50.7	µg/L	1	50.0	<0.280	101	61.9 - 144	10	20
1,3-Dichlorobenzene (meta)	48.7	µg/L	1	50.0	<0.310	97	69.4 - 131	9	20
p-Isopropyltoluene	51.4	µg/L	1	50.0	<0.330	103	59.2 - 141	10	20
4-Chlorotoluene	48.5	µg/L	1	50.0	<0.290	97	68.6 - 139	9	20
1,2-Dichlorobenzene (ortho)	48.1	µg/L	1	50.0	<0.270	96	70.4 - 132	8	20
n-Butylbenzene	50.0	µg/L	1	50.0	<0.300	100	55.7 - 146	10	20
1,2-Dibromo-3-chloropropane	54.2	µg/L	1	50.0	<0.680	108	59.6 - 136	13	20
1,2,3-Trichlorobenzene	49.9	µg/L	1	50.0	<0.330	100	54.2 - 130	14	20
1,2,4-Trichlorobenzene	49.6	µg/L	1	50.0	<0.340	99	49 - 123	13	20
Naphthalene	51.6	µg/L	1	50.0	<0.280	103	56.4 - 131	13	20
Hexachlorobutadiene	47.6	µg/L	1	50.0	<0.540	95	24.8 - 144	14	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	50.1	49.3	µg/L	1	50	100	99	82.8 - 123

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Toluene-d8	49.0	48.9	μg/L	1	50	98	98	92.3 - 106
4-Bromofluorobenzene (4-BFB)	51.4	50.8	μg/L	1	50	103	102	93.2 - 108

Matrix Spike (MS-1) Spiked Sample: 195746

QC Batch: 59566 Date Analyzed: 2009-05-18 Analyzed By: ER
Prep Batch: 50843 QC Preparation: 2009-05-18 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	227	mg/L	100	100	155	72	44.6 - 142

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	227	mg/L	100	100	155	72	44.6 - 142	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	9.33	9.02	mg/L	100	10	93	90	57.8 - 132
4-Bromofluorobenzene (4-BFB)	9.36	8.94	mg/L	100	10	94	89	69.4 - 128

Standard (CCV-1)

QC Batch: 59454 Date Analyzed: 2009-05-13 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		μg/L	50.0	50.0	100	80 - 120	2009-05-13
Dichlorodifluoromethane	[4]	μg/L	50.0	33.6	67	80 - 120	2009-05-13
Chloromethane (methyl chloride)		μg/L	50.0	46.2	92	80 - 120	2009-05-13
Vinyl Chloride		μg/L	50.0	48.6	97	80 - 120	2009-05-13
Bromomethane (methyl bromide)		μg/L	50.0	43.3	87	80 - 120	2009-05-13
Chloroethane		μg/L	50.0	45.8	92	80 - 120	2009-05-13
Trichlorofluoromethane		μg/L	50.0	52.5	105	80 - 120	2009-05-13
Acetone		μg/L	50.0	42.7	85	80 - 120	2009-05-13
Iodomethane (methyl iodide)		μg/L	50.0	45.4	91	80 - 120	2009-05-13
Carbon Disulfide		μg/L	50.0	48.2	96	80 - 120	2009-05-13
Acrylonitrile		μg/L	50.0	46.6	93	80 - 120	2009-05-13
2-Butanone (MEK)	[5]	μg/L	50.0	35.5	71	80 - 120	2009-05-13
4-Methyl-2-pentanone (MIBK)		μg/L	50.0	49.5	99	80 - 120	2009-05-13

continued ...

[4] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[5] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Hexanone	[6]	µg/L	50.0	39.1	78	80 - 120	2009-05-13
trans 1,4-Dichloro-2-butene		µg/L	50.0	58.8	118	80 - 120	2009-05-13
1,1-Dichloroethene		µg/L	50.0	51.6	103	80 - 120	2009-05-13
Methylene chloride		µg/L	50.0	44.4	89	80 - 120	2009-05-13
MTBE		µg/L	50.0	45.3	91	80 - 120	2009-05-13
trans-1,2-Dichloroethene		µg/L	50.0	49.2	98	80 - 120	2009-05-13
1,1-Dichloroethane		µg/L	50.0	48.8	98	80 - 120	2009-05-13
cis-1,2-Dichloroethene		µg/L	50.0	48.8	98	80 - 120	2009-05-13
2,2-Dichloropropane		µg/L	50.0	52.9	106	80 - 120	2009-05-13
1,2-Dichloroethane (EDC)		µg/L	50.0	49.4	99	80 - 120	2009-05-13
Chloroform		µg/L	50.0	48.6	97	80 - 120	2009-05-13
1,1,1-Trichloroethane		µg/L	50.0	49.0	98	80 - 120	2009-05-13
1,1-Dichloropropene		µg/L	50.0	48.9	98	80 - 120	2009-05-13
Benzene		µg/L	50.0	47.7	95	80 - 120	2009-05-13
Carbon Tetrachloride		µg/L	50.0	50.6	101	80 - 120	2009-05-13
1,2-Dichloropropane		µg/L	50.0	48.5	97	80 - 120	2009-05-13
Trichloroethene (TCE)		µg/L	50.0	47.4	95	80 - 120	2009-05-13
Dibromomethane (methylene bromide)		µg/L	50.0	49.0	98	80 - 120	2009-05-13
Bromodichloromethane		µg/L	50.0	50.0	100	80 - 120	2009-05-13
2-Chloroethyl vinyl ether		µg/L	50.0	43.3	87	80 - 120	2009-05-13
cis-1,3-Dichloropropene		µg/L	50.0	52.0	104	80 - 120	2009-05-13
trans-1,3-Dichloropropene		µg/L	50.0	53.0	106	80 - 120	2009-05-13
Toluene		µg/L	50.0	46.9	94	80 - 120	2009-05-13
1,1,2-Trichloroethane		µg/L	50.0	47.5	95	80 - 120	2009-05-13
1,3-Dichloropropane		µg/L	50.0	47.4	95	80 - 120	2009-05-13
Dibromochloromethane		µg/L	50.0	52.6	105	80 - 120	2009-05-13
1,2-Dibromoethane (EDB)		µg/L	50.0	48.2	96	80 - 120	2009-05-13
Tetrachloroethene (PCE)	[7]	µg/L	50.0	34.5	69	80 - 120	2009-05-13
Chlorobenzene		µg/L	50.0	47.2	94	80 - 120	2009-05-13
1,1,1,2-Tetrachloroethane		µg/L	50.0	49.6	99	80 - 120	2009-05-13
Ethylbenzene		µg/L	50.0	47.4	95	80 - 120	2009-05-13
m,p-Xylene		µg/L	100	96.3	96	80 - 120	2009-05-13
Bromoform		µg/L	50.0	49.2	98	80 - 120	2009-05-13
Styrene		µg/L	50.0	50.7	101	80 - 120	2009-05-13
o-Xylene		µg/L	50.0	49.6	99	80 - 120	2009-05-13
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.8	106	80 - 120	2009-05-13
2-Chlorotoluene		µg/L	50.0	46.4	93	80 - 120	2009-05-13
1,2,3-Trichloropropane		µg/L	50.0	49.8	100	80 - 120	2009-05-13
Isopropylbenzene		µg/L	50.0	48.6	97	80 - 120	2009-05-13
Bromobenzene		µg/L	50.0	43.6	87	80 - 120	2009-05-13
n-Propylbenzene		µg/L	50.0	47.1	94	80 - 120	2009-05-13
1,3,5-Trimethylbenzene		µg/L	50.0	47.2	94	80 - 120	2009-05-13
tert-Butylbenzene		µg/L	50.0	49.4	99	80 - 120	2009-05-13
1,2,4-Trimethylbenzene		µg/L	50.0	48.2	96	80 - 120	2009-05-13

continued ...

[6] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[7] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,4-Dichlorobenzene (para)		µg/L	50.0	45.0	90	80 - 120	2009-05-13
sec-Butylbenzene		µg/L	50.0	49.2	98	80 - 120	2009-05-13
1,3-Dichlorobenzene (meta)		µg/L	50.0	46.1	92	80 - 120	2009-05-13
p-Isopropyltoluene		µg/L	50.0	49.7	99	80 - 120	2009-05-13
4-Chlorotoluene		µg/L	50.0	45.8	92	80 - 120	2009-05-13
1,2-Dichlorobenzene (ortho)		µg/L	50.0	46.2	92	80 - 120	2009-05-13
n-Butylbenzene		µg/L	50.0	50.2	100	80 - 120	2009-05-13
1,2-Dibromo-3-chloropropane		µg/L	50.0	51.0	102	80 - 120	2009-05-13
1,2,3-Trichlorobenzene		µg/L	50.0	47.8	96	80 - 120	2009-05-13
1,2,4-Trichlorobenzene		µg/L	50.0	48.1	96	80 - 120	2009-05-13
Naphthalene		µg/L	50.0	48.6	97	80 - 120	2009-05-13
Hexachlorobutadiene		µg/L	50.0	46.8	94	80 - 120	2009-05-13

Standard (CCV-2)

QC Batch: 59454 Date Analyzed: 2009-05-13 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	54.0	108	80 - 120	2009-05-13
Dichlorodifluoromethane	[8]	µg/L	50.0	35.2	70	80 - 120	2009-05-13
Chloromethane (methyl chloride)		µg/L	50.0	51.2	102	80 - 120	2009-05-13
Vinyl Chloride		µg/L	50.0	52.6	105	80 - 120	2009-05-13
Bromomethane (methyl bromide)	[9]	µg/L	50.0	63.3	127	80 - 120	2009-05-13
Chloroethane	[10]	µg/L	50.0	65.2	130	80 - 120	2009-05-13
Trichlorofluoromethane		µg/L	50.0	59.5	119	80 - 120	2009-05-13
Acetone		µg/L	50.0	46.7	93	80 - 120	2009-05-13
Iodomethane (methyl iodide)		µg/L	50.0	54.0	108	80 - 120	2009-05-13
Carbon Disulfide		µg/L	50.0	54.2	108	80 - 120	2009-05-13
Acrylonitrile		µg/L	50.0	49.9	100	80 - 120	2009-05-13
2-Butanone (MEK)	[11]	µg/L	50.0	37.7	75	80 - 120	2009-05-13
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	52.3	105	80 - 120	2009-05-13
2-Hexanone		µg/L	50.0	42.8	86	80 - 120	2009-05-13
trans 1,4-Dichloro-2-butene		µg/L	50.0	49.8	100	80 - 120	2009-05-13
1,1-Dichloroethene		µg/L	50.0	52.8	106	80 - 120	2009-05-13
Methylene chloride		µg/L	50.0	48.2	96	80 - 120	2009-05-13
MTBE		µg/L	50.0	49.6	99	80 - 120	2009-05-13
trans-1,2-Dichloroethene		µg/L	50.0	52.4	105	80 - 120	2009-05-13
1,1-Dichloroethane		µg/L	50.0	52.5	105	80 - 120	2009-05-13
cis-1,2-Dichloroethene		µg/L	50.0	52.2	104	80 - 120	2009-05-13

continued ...

[8] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[9] Analyte recovery outside CCV limits. Concentration biased high. All reportable concentrations are estimated values. •
[10] Analyte recovery outside CCV limits. Concentration biased high. All reportable concentrations are estimated values. •
[11] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2,2-Dichloropropane	[12]	µg/L	50.0	39.2	78	80 - 120	2009-05-13
1,2-Dichloroethane (EDC)		µg/L	50.0	53.5	107	80 - 120	2009-05-13
Chloroform		µg/L	50.0	53.1	106	80 - 120	2009-05-13
1,1,1-Trichloroethane		µg/L	50.0	53.3	107	80 - 120	2009-05-13
1,1-Dichloropropene		µg/L	50.0	50.3	101	80 - 120	2009-05-13
Benzene		µg/L	50.0	50.2	100	80 - 120	2009-05-13
Carbon Tetrachloride		µg/L	50.0	54.0	108	80 - 120	2009-05-13
1,2-Dichloropropane		µg/L	50.0	50.6	101	80 - 120	2009-05-13
Trichloroethene (TCE)	[13]	µg/L	50.0	60.8	122	80 - 120	2009-05-13
Dibromomethane (methylene bromide)		µg/L	50.0	51.3	103	80 - 120	2009-05-13
Bromodichloromethane		µg/L	50.0	52.7	105	80 - 120	2009-05-13
2-Chloroethyl vinyl ether		µg/L	50.0	43.6	87	80 - 120	2009-05-13
cis-1,3-Dichloropropene		µg/L	50.0	50.2	100	80 - 120	2009-05-13
trans-1,3-Dichloropropene		µg/L	50.0	51.8	104	80 - 120	2009-05-13
Toluene		µg/L	50.0	48.5	97	80 - 120	2009-05-13
1,1,2-Trichloroethane		µg/L	50.0	49.8	100	80 - 120	2009-05-13
1,3-Dichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-05-13
Dibromochloromethane		µg/L	50.0	54.2	108	80 - 120	2009-05-13
1,2-Dibromoethane (EDB)		µg/L	50.0	50.5	101	80 - 120	2009-05-13
Tetrachloroethene (PCE)		µg/L	50.0	52.4	105	80 - 120	2009-05-13
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2009-05-13
1,1,1,2-Tetrachloroethane		µg/L	50.0	51.7	103	80 - 120	2009-05-13
Ethylbenzene		µg/L	50.0	49.2	98	80 - 120	2009-05-13
m,p-Xylene		µg/L	100	101	101	80 - 120	2009-05-13
Bromoform		µg/L	50.0	50.5	101	80 - 120	2009-05-13
Styrene		µg/L	50.0	53.2	106	80 - 120	2009-05-13
o-Xylene		µg/L	50.0	52.1	104	80 - 120	2009-05-13
1,1,2,2-Tetrachloroethane	[14]	µg/L	50.0	38.6	77	80 - 120	2009-05-13
2-Chlorotoluene		µg/L	50.0	47.7	95	80 - 120	2009-05-13
1,2,3-Trichloropropane		µg/L	50.0	52.1	104	80 - 120	2009-05-13
Isopropylbenzene		µg/L	50.0	49.6	99	80 - 120	2009-05-13
Bromobenzene		µg/L	50.0	47.7	95	80 - 120	2009-05-13
n-Propylbenzene		µg/L	50.0	47.8	96	80 - 120	2009-05-13
1,3,5-Trimethylbenzene		µg/L	50.0	48.3	97	80 - 120	2009-05-13
tert-Butylbenzene		µg/L	50.0	50.4	101	80 - 120	2009-05-13
1,2,4-Trimethylbenzene		µg/L	50.0	48.7	97	80 - 120	2009-05-13
1,4-Dichlorobenzene (para)		µg/L	50.0	45.7	91	80 - 120	2009-05-13
sec-Butylbenzene		µg/L	50.0	49.0	98	80 - 120	2009-05-13
1,3-Dichlorobenzene (meta)		µg/L	50.0	47.1	94	80 - 120	2009-05-13
p-Isopropyltoluene		µg/L	50.0	50.0	100	80 - 120	2009-05-13
4-Chlorotoluene		µg/L	50.0	46.6	93	80 - 120	2009-05-13
1,2-Dichlorobenzene (ortho)		µg/L	50.0	46.9	94	80 - 120	2009-05-13
n-Butylbenzene		µg/L	50.0	47.8	96	80 - 120	2009-05-13

continued ...

[12] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[13] Analyte recovery outside CCV limits. Concentration biased high. All reportable concentrations are estimated values. •
[14] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,2-Dibromo-3-chloropropane		µg/L	50.0	52.1	104	80 - 120	2009-05-13
1,2,3-Trichlorobenzene		µg/L	50.0	46.4	93	80 - 120	2009-05-13
1,2,4-Trichlorobenzene		µg/L	50.0	45.9	92	80 - 120	2009-05-13
Naphthalene		µg/L	50.0	49.3	99	80 - 120	2009-05-13
Hexachlorobutadiene		µg/L	50.0	44.4	89	80 - 120	2009-05-13

Standard (CCV-1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	43.3	87	80 - 120	2009-05-14
Dichlorodifluoromethane	[15]	µg/L	50.0	28.8	58	80 - 120	2009-05-14
Chloromethane (methyl chloride)	[16]	µg/L	50.0	39.3	79	80 - 120	2009-05-14
Vinyl Chloride	[17]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
Bromomethane (methyl bromide)		µg/L	50.0	43.6	87	80 - 120	2009-05-14
Chloroethane		µg/L	50.0	42.9	86	80 - 120	2009-05-14
Trichlorofluoromethane	[18]	µg/L	50.0	39.0	78	80 - 120	2009-05-14
Acetone	[19]	µg/L	50.0	29.0	58	80 - 120	2009-05-14
Iodomethane (methyl iodide)		µg/L	50.0	47.0	94	80 - 120	2009-05-14
Carbon Disulfide		µg/L	50.0	46.2	92	80 - 120	2009-05-14
Acrylonitrile		µg/L	50.0	40.8	82	80 - 120	2009-05-14
2-Butanone (MEK)	[20]	µg/L	50.0	29.8	60	80 - 120	2009-05-14
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	42.7	85	80 - 120	2009-05-14
2-Hexanone	[21]	µg/L	50.0	33.1	66	80 - 120	2009-05-14
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.9	94	80 - 120	2009-05-14
1,1-Dichloroethene		µg/L	50.0	41.1	82	80 - 120	2009-05-14
Methylene chloride	[22]	µg/L	50.0	39.7	79	80 - 120	2009-05-14
MTBE		µg/L	50.0	44.5	89	80 - 120	2009-05-14
trans-1,2-Dichloroethene		µg/L	50.0	43.6	87	80 - 120	2009-05-14
1,1-Dichloroethane		µg/L	50.0	44.4	89	80 - 120	2009-05-14
cis-1,2-Dichloroethene		µg/L	50.0	43.7	87	80 - 120	2009-05-14
2,2-Dichloropropane		µg/L	50.0	52.1	104	80 - 120	2009-05-14
1,2-Dichloroethane (EDC)		µg/L	50.0	44.8	90	80 - 120	2009-05-14
Chloroform		µg/L	50.0	43.6	87	80 - 120	2009-05-14
1,1,1-Trichloroethane		µg/L	50.0	46.8	94	80 - 120	2009-05-14
1,1-Dichloropropene		µg/L	50.0	45.8	92	80 - 120	2009-05-14

continued ...

[15] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[16] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[17] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[18] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[19] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[20] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[21] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[22] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		µg/L	50.0	44.1	88	80 - 120	2009-05-14
Carbon Tetrachloride		µg/L	50.0	48.5	97	80 - 120	2009-05-14
1,2-Dichloropropane		µg/L	50.0	44.6	89	80 - 120	2009-05-14
Trichloroethene (TCE)		µg/L	50.0	43.6	87	80 - 120	2009-05-14
Dibromomethane (methylene bromide)		µg/L	50.0	44.0	88	80 - 120	2009-05-14
Bromodichloromethane		µg/L	50.0	46.1	92	80 - 120	2009-05-14
2-Chloroethyl vinyl ether	[23]	µg/L	50.0	25.8	52	80 - 120	2009-05-14
cis-1,3-Dichloropropene		µg/L	50.0	48.3	97	80 - 120	2009-05-14
trans-1,3-Dichloropropene		µg/L	50.0	48.0	96	80 - 120	2009-05-14
Toluene		µg/L	50.0	43.5	87	80 - 120	2009-05-14
1,1,2-Trichloroethane		µg/L	50.0	44.5	89	80 - 120	2009-05-14
1,3-Dichloropropane		µg/L	50.0	45.6	91	80 - 120	2009-05-14
Dibromochloromethane		µg/L	50.0	50.2	100	80 - 120	2009-05-14
1,2-Dibromoethane (EDB)		µg/L	50.0	45.3	91	80 - 120	2009-05-14
Tetrachloroethene (PCE)	[24]	µg/L	50.0	32.6	65	80 - 120	2009-05-14
Chlorobenzene		µg/L	50.0	45.2	90	80 - 120	2009-05-14
1,1,1,2-Tetrachloroethane		µg/L	50.0	48.1	96	80 - 120	2009-05-14
Ethylbenzene		µg/L	50.0	46.4	93	80 - 120	2009-05-14
m,p-Xylene		µg/L	100	94.3	94	80 - 120	2009-05-14
Bromoform		µg/L	50.0	46.8	94	80 - 120	2009-05-14
Styrene		µg/L	50.0	48.7	97	80 - 120	2009-05-14
o-Xylene		µg/L	50.0	48.1	96	80 - 120	2009-05-14
1,1,2,2-Tetrachloroethane		µg/L	50.0	48.8	98	80 - 120	2009-05-14
2-Chlorotoluene		µg/L	50.0	46.9	94	80 - 120	2009-05-14
1,2,3-Trichloropropane		µg/L	50.0	50.5	101	80 - 120	2009-05-14
Isopropylbenzene		µg/L	50.0	49.2	98	80 - 120	2009-05-14
Bromobenzene		µg/L	50.0	44.2	88	80 - 120	2009-05-14
n-Propylbenzene		µg/L	50.0	47.6	95	80 - 120	2009-05-14
1,3,5-Trimethylbenzene		µg/L	50.0	47.7	95	80 - 120	2009-05-14
tert-Butylbenzene		µg/L	50.0	49.9	100	80 - 120	2009-05-14
1,2,4-Trimethylbenzene		µg/L	50.0	49.0	98	80 - 120	2009-05-14
1,4-Dichlorobenzene (para)		µg/L	50.0	43.9	88	80 - 120	2009-05-14
sec-Butylbenzene		µg/L	50.0	48.9	98	80 - 120	2009-05-14
1,3-Dichlorobenzene (meta)		µg/L	50.0	45.3	91	80 - 120	2009-05-14
p-Isopropyltoluene		µg/L	50.0	49.7	99	80 - 120	2009-05-14
4-Chlorotoluene		µg/L	50.0	46.3	93	80 - 120	2009-05-14
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.8	90	80 - 120	2009-05-14
n-Butylbenzene		µg/L	50.0	49.4	99	80 - 120	2009-05-14
1,2-Dibromo-3-chloropropane		µg/L	50.0	49.9	100	80 - 120	2009-05-14
1,2,3-Trichlorobenzene		µg/L	50.0	46.5	93	80 - 120	2009-05-14
1,2,4-Trichlorobenzene		µg/L	50.0	48.1	96	80 - 120	2009-05-14
Naphthalene		µg/L	50.0	47.1	94	80 - 120	2009-05-14
Hexachlorobutadiene		µg/L	50.0	48.1	96	80 - 120	2009-05-14

[23] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[24] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

Standard (CCV-2)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	51.0	102	80 - 120	2009-05-14
Dichlorodifluoromethane	[25]	µg/L	50.0	27.5	55	80 - 120	2009-05-14
Chloromethane (methyl chloride)		µg/L	50.0	44.8	90	80 - 120	2009-05-14
Vinyl Chloride		µg/L	50.0	46.1	92	80 - 120	2009-05-14
Bromomethane (methyl bromide)		µg/L	50.0	56.2	112	80 - 120	2009-05-14
Chloroethane		µg/L	50.0	55.8	112	80 - 120	2009-05-14
Trichlorofluoromethane		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Acetone	[26]	µg/L	50.0	35.7	71	80 - 120	2009-05-14
Iodomethane (methyl iodide)		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Carbon Disulfide		µg/L	50.0	52.1	104	80 - 120	2009-05-14
Acrylonitrile		µg/L	50.0	45.1	90	80 - 120	2009-05-14
2-Butanone (MEK)	[27]	µg/L	50.0	32.6	65	80 - 120	2009-05-14
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.6	97	80 - 120	2009-05-14
2-Hexanone	[28]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
trans 1,4-Dichloro-2-butene		µg/L	50.0	43.2	86	80 - 120	2009-05-14
1,1-Dichloroethene		µg/L	50.0	48.2	96	80 - 120	2009-05-14
Methylene chloride		µg/L	50.0	45.6	91	80 - 120	2009-05-14
MTBE		µg/L	50.0	46.2	92	80 - 120	2009-05-14
trans-1,2-Dichloroethene		µg/L	50.0	49.6	99	80 - 120	2009-05-14
1,1-Dichloroethane		µg/L	50.0	49.3	99	80 - 120	2009-05-14
cis-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-05-14
2,2-Dichloropropane	[29]	µg/L	50.0	38.1	76	80 - 120	2009-05-14
1,2-Dichloroethane (EDC)		µg/L	50.0	50.1	100	80 - 120	2009-05-14
Chloroform		µg/L	50.0	49.8	100	80 - 120	2009-05-14
1,1,1-Trichloroethane		µg/L	50.0	51.9	104	80 - 120	2009-05-14
1,1-Dichloropropene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
Benzene		µg/L	50.0	48.4	97	80 - 120	2009-05-14
Carbon Tetrachloride		µg/L	50.0	52.8	106	80 - 120	2009-05-14
1,2-Dichloropropane		µg/L	50.0	49.3	99	80 - 120	2009-05-14
Trichloroethene (TCE)		µg/L	50.0	58.1	116	80 - 120	2009-05-14
Dibromomethane (methylene bromide)		µg/L	50.0	49.2	98	80 - 120	2009-05-14
Bromodichloromethane		µg/L	50.0	50.4	101	80 - 120	2009-05-14
2-Chloroethyl vinyl ether	[30]	µg/L	50.0	27.9	56	80 - 120	2009-05-14
cis-1,3-Dichloropropene		µg/L	50.0	49.8	100	80 - 120	2009-05-14
trans-1,3-Dichloropropene		µg/L	50.0	49.9	100	80 - 120	2009-05-14
Toluene		µg/L	50.0	47.8	96	80 - 120	2009-05-14
1,1,2-Trichloroethane		µg/L	50.0	49.2	98	80 - 120	2009-05-14
1,3-Dichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-05-14

continued ...

[25] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[26] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[27] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[28] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[29] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •
[30] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dibromochloromethane		µg/L	50.0	53.8	108	80 - 120	2009-05-14
1,2-Dibromoethane (EDB)		µg/L	50.0	50.0	100	80 - 120	2009-05-14
Tetrachloroethene (PCE)		µg/L	50.0	53.9	108	80 - 120	2009-05-14
Chlorobenzene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
1,1,1,2-Tetrachloroethane		µg/L	50.0	52.1	104	80 - 120	2009-05-14
Ethylbenzene		µg/L	50.0	49.8	100	80 - 120	2009-05-14
m,p-Xylene		µg/L	100	101	101	80 - 120	2009-05-14
Bromoform		µg/L	50.0	49.8	100	80 - 120	2009-05-14
Styrene		µg/L	50.0	53.6	107	80 - 120	2009-05-14
o-Xylene		µg/L	50.0	52.0	104	80 - 120	2009-05-14
1,1,2,2-Tetrachloroethane	[31]	µg/L	50.0	39.4	79	80 - 120	2009-05-14
2-Chlorotoluene		µg/L	50.0	49.5	99	80 - 120	2009-05-14
1,2,3-Trichloropropane		µg/L	50.0	54.0	108	80 - 120	2009-05-14
Isopropylbenzene		µg/L	50.0	51.8	104	80 - 120	2009-05-14
Bromobenzene		µg/L	50.0	49.1	98	80 - 120	2009-05-14
n-Propylbenzene		µg/L	50.0	50.0	100	80 - 120	2009-05-14
1,3,5-Trimethylbenzene		µg/L	50.0	50.4	101	80 - 120	2009-05-14
tert-Butylbenzene		µg/L	50.0	52.4	105	80 - 120	2009-05-14
1,2,4-Trimethylbenzene		µg/L	50.0	50.6	101	80 - 120	2009-05-14
1,4-Dichlorobenzene (para)		µg/L	50.0	47.5	95	80 - 120	2009-05-14
sec-Butylbenzene		µg/L	50.0	51.1	102	80 - 120	2009-05-14
1,3-Dichlorobenzene (meta)		µg/L	50.0	48.7	97	80 - 120	2009-05-14
p-Isopropyltoluene		µg/L	50.0	51.6	103	80 - 120	2009-05-14
4-Chlorotoluene		µg/L	50.0	48.5	97	80 - 120	2009-05-14
1,2-Dichlorobenzene (ortho)		µg/L	50.0	48.6	97	80 - 120	2009-05-14
n-Butylbenzene		µg/L	50.0	50.4	101	80 - 120	2009-05-14
1,2-Dibromo-3-chloropropane		µg/L	50.0	52.6	105	80 - 120	2009-05-14
1,2,3-Trichlorobenzene		µg/L	50.0	49.6	99	80 - 120	2009-05-14
1,2,4-Trichlorobenzene		µg/L	50.0	49.3	99	80 - 120	2009-05-14
Naphthalene		µg/L	50.0	50.8	102	80 - 120	2009-05-14
Hexachlorobutadiene		µg/L	50.0	47.6	95	80 - 120	2009-05-14

Standard (CCV-1)

QC Batch: 59566 Date Analyzed: 2009-05-18 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.11	111	80 - 120	2009-05-18

Standard (CCV-2)

QC Batch: 59566 Date Analyzed: 2009-05-18 Analyzed By: ER

[31] Analyte recovery outside CCV limits. Concentration biased low. All reportable concentrations are estimated values. •

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.08	108	80 - 120	2009-05-18

Standard (ICV-1)

QC Batch: 59665 Date Analyzed: 2009-05-20 Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	997.0	100	90 - 110	2009-05-20

Standard (CCV-1)

QC Batch: 59665 Date Analyzed: 2009-05-20 Analyzed By: SS

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	997.0	100	90 - 110	2009-05-20

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVW Wells

SAMPLER'S SIGNATURE: Juan Padilla

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS								REMARKS
5-12-09	1235	HTSA-0197-HVW-005-0509	Water	195746	7	X	X	X								
5-11-09	1145	HTSA-0197-HVW-006-0509-ms/msd	Water	195747	3	X	~~X~~	~~X~~								5 day Turn
5-12-09	1024	HTSA-0197-HVW-010-0509	Water	195748	3	X										Around
5-11-09	1145	HTSA-0197-HVW-006-0509	Water	195747	3	X	~~X~~	~~X~~								
5-12-09	1235	HTSA-0197-HVW-105-0509	Water	195749	3	X										
5-12-09	1235	HTSA-0197-HVW-005-0509	Water	195746	3	~~X~~	~~X~~	~~X~~								
5-12-09	1235	HTSA-0197-TB-09-103	Water	195750	~~3~~ 2	X										
5-12-09	1318	HTSA-0197-HVW-008-0509	WATER	195751	3	X										
5-12-09	1345	HTSA-0197-RB-001-0509	WATER	195752	3	X										

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME) Juan Padilla	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace-Lab
	GOOD CONDITION/CHILLED	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS/COMMENTS: FED 7975 8642 1478 IR 4.3 4.8 PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long Term Groundwater HWW Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS								REMARKS
						4										
5-12-09	1024	HTSA-0157-HWW-010-0509	Water	195748	4	X	X	X								

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GALLEGOS	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace-Lab
	GOOD CONDITION/COLD		(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: Fed 7975 8642 1478 PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOU Wells

SAMPLER'S SIGNATURE: Juan Padilla

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	J.P.	GRO	TDS								REMARKS
5-12-09	1235	HTSA-0197-HVOU-105-0509	Water	195749	4	X	X	X								

ANALYSIS REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) Juan Padilla	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace-Lab
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: Fed 7975 8642 1478 PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOC Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOCs	GRO	TDS								REMARKS
5-12-09	1318	HTSA-0197-HVOC-008-0509	Water	195751	4	X	X	X								

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME)	(PRINTED NAME)	(PRINTED NAME) Carol FOX
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace - Lab
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: Fed 7975 8642 1478 PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long Term Groundwater HTSW Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	ANALYSIS REQUESTED: CBA	GRO	TDS								REMARKS
5-12-09	1345	HTSA-0197-RB-001-0509	Water	195752	4	X	X	X								

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME): GABRIEL GARCIA	(PRINTED NAME)	(PRINTED NAME): Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY): Trace - LBK
	GOOD CONDITION/CHILLED	(TIME/DATE)	(TIME/DATE)	(TIME/DATE): 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS/COMMENTS: FED 7975 8642 1478 PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

Analyte List – HELSTF TSA Long-Term Groundwater Monitoring HVW wells HVW-05, HVW-06, HVW-07, HVW-08, HVW-09, HVW-10					
Parameter		Reference Method	Container	Maximum hold time	Preservative
Water Quality	Conductivity pH Temperature Dissolved Oxygen ORP Turbidity	Field measured with YSI and turbidimeter	NA	NA	NA
	Total Dissolved Solids	160.1	500 mL- polyethylene	NA 7 days	Chill to 4 °C
Organics	VOCs including MTBE	8260B	40-mL VOAs (3)	14 days	HCl, pH<2 Chill to 4 °C
	TPH GRO	8015	40-mL VOAs (3)	14 days	HCl, pH<2 Chill to 4 °C

Note: 5 Day Turn Around.

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009050507-001A

Bradley Davis
Zia Engineering & Environmental Consultants LLC
Bldg 126 3rd Floor
PO Box 363
WSMR NM 88002

May 29, 2009

Sample ID:	HTSA-0197-HVW-008-0509	Sampled By:	GG	
Project Name :		Sample Of:	Liquid	
Project Number :		Sample Date:	05/11/2009	12:48
Project Location:		Sample Condition:		
Sample Point:		PO / Ref. No:		

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Surface tension @ 75°F	ASTM-D-1331-A	22.6	DYNES/CM		MES	05/29/09
API Gravity @ 60 °F	ASTM-D-4052	61.92	°		BAC	05/29/09
Specific Gravity @ 60/60 °F	ASTM-D-4052	0.7316	_		BAC	05/29/09
Density @ 60 °F	ASTM-D-4052	0.7308	g/ml		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	0.52	cSt		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	27.4	SUS		BAC	05/29/09

Comments:

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

Certificate of Analysis

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Analysis Number:	2009050507-001A		
Sample ID:	HTSA-0197-HVW-008-0509	**Date of Sample:**	05/11/09
Project:	HELSTF TSA Long Term Grd.Water	**Time Sampled:**	12:48 PM
Project Location:	WSMR, NM	**Date Sample Analyzed:**	06/01/09
Client	Zia Engineering & Environmental	**Contact(s):**	Bradley Davis
Address	P O Box 363		
Suite / Department	Bldg.126,3rd Floor		
City	WSMR	**State**	New Mexico **Zip** 88002
Phone	575-678-3397 **Ext**	**E-Mail**	bdavis@ws-tech..com
Fax			
Color:	Straw	**Odor:**	Gasoline
Specific Gravity @ 60° F.	0.7316	**API @ 60° F.**	61.92
Carbon Range	C3 - C30+	**Major Range**	C5 - C10

Paraffin	11.1017	wt%	**N-Hexane**	2.226	wt%
Isoparaffins	39.9888	wt%	**Benzene**	0.293	wt%
Naphthenics	10.7061	wt%	**Ethyl Benzene**	2.332	wt%
Aromatics	29.5950	wt%	**Toluene**	4.467	wt%
Olefins	8.5877	wt%	**Meta-Xylene**	3.875	wt%
Unknowns	N/D	wt%	**Para-Xylene**	1.569	wt%
2,2,4-Tri Methylpentane	4.031	wt%	**Ortho-Xylene**	2.028	wt%
			Xylenes	7.472	wt%
Calculated Research Octane	82.489		**EDB**	N/A	wt%
Lead / Manganese	N/A		**EDC**	N/A	wt%
Oxygnates	N/D		**Ethanol**	N/D	wt%
C_{17}	N/D	wt%	**C_{18}**	0.015	wt%
Pristane	N/D	wt%	**Phytane**	N/D	wt%
Naphthalene	0.277	wt%	**2-Methyl Naphthalene**	0.014	wt%
1-Methyl Naphthalene	0.255	wt%			

Gasoline Range:	C_4-C_{13} Indicators:	2,2,4-TMP; MTBE; Olefins, Lead
Diesel Range:	C_7-C_{20} Indicators:	Pristane, Phytane
Condensate Range:	C_2-C_{25}+ Indicators:	No Olefins, Light & Heavies
Heavy Oil:	C_{20+}	

Comments: **N/A Not Applicable N/D None Detected**

Chris Staley

Chris Staley
Hydrocarbon Laboratory Manager

Detailed Hydrocarbon Analysis Summary Report -

Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Sample: 2009050507-001A RG
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

SUMMARY REPORT

Group Type	Total(Mass%)	Total(Vol%)	Total(Mol%)
Paraffins:	11.1017	12.4436	13.6385
I-Paraffins:	39.9888	42.4929	40.8970
Olefins:	8.5877	8.9756	10.0527
Napthenes:	10.7061	10.1382	10.5684
Aromatics:	29.5950	25.9303	24.8386
Total C30+:	0.0208	0.0194	0.0048
Total Unknowns:	0.0000	0.0000	0.0000

Oxygenates:

Total:	0.0000(Mass%)	0.0000(Vol%)
Total Oxygen Content:	0.0000(Mass%)	

Multisubstituted Aromatics: 12.3537(Mass%) 10.2102(Vol%)

Average Molecular Weight: 98.4318

Relative Density: 0.7221

Vapor Pressure: 5.8525

Calculated Octane Number: 82.4892

	IBP	T10	T50	T90	FBP
Boiling Point (Deg F)	31.10	82.11	210.63	336.88	472.35

Percent Carbon: 86.9185 Percent Hydrogen: 13.0815

Bromine Number (Calc): 16.3079

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Oxygenates

Compound	Mass%	Mass% Oxygen	Vol%
No Oxy Compounds Found	0.00	0.00	0.00

Molecular Weight and Relative Density Data

Group	Avg Mw.	Avg Rel. Density
C1	0.000	0.000
C2	0.000	0.000
C3	44.097	0.500
C4	57.755	0.585
C5	71.712	0.630
C6	85.388	0.679
C7	97.821	0.731
C8	116.330	0.730
C9	122.171	0.827
C10	134.913	0.842
C11	150.261	0.835
C12	158.303	0.842
C13	158.586	0.904
C14	189.769	0.759
C15	199.085	0.784
C16	0.000	0.000
C17	205.000	1.020
C18	254.510	0.777
C19	254.510	0.777
C20	268.530	0.777
C21	0.000	0.000
C22	0.000	0.000
C23	0.000	0.000
C24	338.670	0.799
C25	0.000	0.000
C26	0.000	0.000
C27	0.000	0.000
C28	0.000	0.000

Detailed Hydrocarbon Analysis Detail Report -

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C29	0.000	0.000
Total Sample:	98.40	0.72

Octane Number

Research Octane Number: 82.50
(Calculated from Individual Component Values)

Contribution to Total by:

Paraffins:	5.53
Iso-Paraffins:	32.90
Aromatics:	27.10
Napthenes:	9.24
Olefins:	7.80
Oxygenates:	0.00

Detailed Hydrocarbon Analysis Detail Report -

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Normalized to 100.0000%

Totals by Group Type & Carbon Number (in Mass Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.00961	0.00000	0.00000	0.00000	0.00000	0.00961
C4	2.20910	0.27758	0.24385	0.00000	0.00000	2.73053
C5	3.12789	7.21929	2.36066	0.35764	0.00000	13.06548
C6	2.22639	9.05427	2.09248	2.67803	0.29297	16.34415
C7	1.66846	8.81566	3.50829	2.31523	4.46741	20.77504
C8	0.89542	8.39538	0.38241	4.63418	9.80455	24.11194
C9	0.44560	2.49754	0.00000	0.54502	9.05389	12.54205
C10	0.21663	1.35795	0.00000	0.17600	4.61785	6.36842
C11	0.08661	0.76409	0.00000	0.00000	1.00986	1.86056
C12	0.07399	0.77701	0.00000	0.00000	0.34846	1.19946
C13	0.05075	0.39711	0.00000	0.00000	0.00000	0.44786
C14	0.03246	0.04817	0.00000	0.00000	0.00000	0.08064
C15	0.02388	0.19676	0.00000	0.00000	0.00000	0.22064
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.10829	0.00000	0.00000	0.00000	0.10829
C18	0.01465	0.00000	0.00000	0.00000	0.00000	0.01465
C19	0.00000	0.06292	0.00000	0.00000	0.00000	0.06292
C20	0.00000	0.01675	0.00000	0.00000	0.00000	0.01675
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.02021	0.00000	0.00000	0.00000	0.00000	0.02021
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	11.10166	39.98877	8.58768	10.70610	29.59498	99.97921

Oxygenates 0.00000 Total C30+: 0.02079
Total Unknowns: 0.00000 Grand Total: 100.00000

Totals by Group Type & Carbon Number (in Volume Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.01387	0.00000	0.00000	0.00000	0.00000	0.01387
C4	2.75613	0.35974	0.25742	0.00000	0.00000	3.37330
C5	3.60704	8.41504	2.60848	0.34648	0.00000	14.97704
C6	2.43818	9.94858	2.17705	2.58332	0.24071	17.38785
C7	1.76223	9.27308	3.55724	2.20233	3.72091	20.51578
C8	0.92044	8.56878	0.37537	4.34353	9.63403	23.84214

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Comments:
Normalized to 100.0000%

C9	0.44841	2.49864	0.00000	0.50344	7.50165	10.95214
C10	0.21429	1.32727	0.00000	0.15912	3.75922	5.45990
C11	0.08406	0.73465	0.00000	0.00000	0.79106	1.60977
C12	0.07095	0.67468	0.00000	0.00000	0.28276	1.02840
C13	0.04845	0.30950	0.00000	0.00000	0.00000	0.35795
C14	0.03073	0.04599	0.00000	0.00000	0.00000	0.07672
C15	0.01691	0.18626	0.00000	0.00000	0.00000	0.20317
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.07667	0.00000	0.00000	0.00000	0.07667
C18	0.01362	0.00000	0.00000	0.00000	0.00000	0.01362
C19	0.00000	0.05849	0.00000	0.00000	0.00000	0.05849
C20	0.00000	0.01556	0.00000	0.00000	0.00000	0.01556
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.01826	0.00000	0.00000	0.00000	0.00000	0.01826
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	12.44358	42.49293	8.97557	10.13821	25.93034	99.98063

Oxygenates 0.00000 Total C30+: 0.01937

Total Unknowns: 0.00000 Grand Total: 100.00000

Detailed Hydrocarbon Analysis Detail Report -

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Normalized to 100.0000%

Totals by Group Type & Carbon Number (in Mol Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.02146	0.00000	0.00000	0.00000	0.00000	0.02146
C4	3.74107	0.47008	0.44246	0.00000	0.00000	4.65361
C5	4.26722	9.84889	3.31552	0.50194	0.00000	17.93357
C6	2.54296	10.34171	2.45492	3.13210	0.36917	18.84086
C7	1.63893	8.66658	3.50603	2.32095	4.77231	20.90480
C8	0.77157	7.26794	0.33378	4.06494	7.96383	20.40206
C9	0.34198	1.92350	0.00000	0.42495	7.41454	10.10497
C10	0.14986	0.94252	0.00000	0.12350	3.43046	4.64635
C11	0.05454	0.48737	0.00000	0.00000	0.67690	1.21880
C12	0.04275	0.49169	0.00000	0.00000	0.21137	0.74582
C13	0.02710	0.25088	0.00000	0.00000	0.00000	0.27798
C14	0.01611	0.02572	0.00000	0.00000	0.00000	0.04183
C15	0.01147	0.09762	0.00000	0.00000	0.00000	0.10909
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.05200	0.00000	0.00000	0.00000	0.05200
C18	0.00566	0.00000	0.00000	0.00000	0.00000	0.00566
C19	0.00000	0.02433	0.00000	0.00000	0.00000	0.02433
C20	0.00000	0.00614	0.00000	0.00000	0.00000	0.00614
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.00587	0.00000	0.00000	0.00000	0.00000	0.00587
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	13.63855	40.89698	10.05271	10.56838	24.83858	99.99520

Oxygenates 0.00000 Total C14+: 0.00480

Total Unknowns: 0.00000 Grand Total: 100.00000

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Hold

Components Listed in Chromatographic Order **Page: 7**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
7.613	300.000	P3	propane	0.010	0.014	0.021
8.050	366.780	I4	i-butane	0.278	0.360	0.470
8.423	400.000	P4	n-butane	2.209	2.756	3.741
8.550	409.870	O4	t-butene-2	0.010	0.012	0.017
8.613	414.450	I5	2,2-dimethylpropane	0.021	0.026	0.028
8.763	424.540	O4	c-butene-2	0.010	0.011	0.017
9.370	457.240	O5	3-methylbutene-1	0.064	0.074	0.090
9.793	474.970	I5	i-pentane	7.198	8.390	9.820
10.183	488.880	O4	butyne-2	0.224	0.235	0.408
10.387	495.430	O5	2-methylbutene-1	0.415	0.461	0.583
10.537	500.000	P5	n-pentane	3.128	3.607	4.267
10.780	507.270	O5	t-pentene-2	0.630	0.702	0.884
11.067	515.230	O5	3,3-dimethylbutene-1	0.348	0.386	0.488
11.253	520.110	O5	c-pentene-2	0.838	0.923	1.175
11.347	522.460	O5	2-methylbutene-2	0.008	0.008	0.011
11.947	536.410	I6	2,2-dimethylbutane	0.897	0.998	1.025
12.803	553.540	O5	cyclopentene	0.058	0.055	0.084
12.980	556.740	O6	4-methylpentene-1	0.057	0.061	0.066
13.073	558.390	O6	3-methylpentene-1	0.083	0.090	0.097
13.430	564.470	N5	cyclopentane	0.358	0.346	0.502
13.517	565.900	I6	2,3-dimethylbutane	1.466	1.600	1.674
13.640	567.890	I6	C6-Iso-Paraffin	0.054	0.059	0.062
13.757	569.740	I6	2-methylpentane	4.108	4.542	4.692
14.710	583.740	I6	3-methylpentane	2.529	2.749	2.888
15.050	588.300	O6	2-methylpentene-1	0.256	0.270	0.299
15.123	589.260	O6	hexene-1	0.132	0.140	0.154
15.993	600.000	P6	n-hexane	2.226	2.438	2.543
16.143	602.100	O6	t-hexene-3	0.173	0.183	0.202
16.247	603.530	O6	c-hexene-3	0.067	0.071	0.078
16.370	605.210	O6	t-hexene-2	0.357	0.378	0.418
16.560	607.760	O6	2-methylpentene-2	0.383	0.401	0.448
16.760	610.390	O6	3-methyl-c-pentene-2	0.081	0.083	0.094
16.847	611.510	O6	3-methylcyclopentene	0.238	0.225	0.285
17.027	613.810	O6	O13	0.042	0.044	0.049
17.167	615.570	O6	c-hexene-2	0.196	0.204	0.229
17.713	622.210	O7	3,3-dimethylpentene-1	0.396	0.407	0.397
18.127	627.000	I7	2,2-dimethylpentane	0.144	0.155	0.142
18.333	629.330	N6	methylcyclopentane	2.678	2.583	3.132

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Components Listed in Chromatographic Order **Page: 8**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
18.703	633.400	I7	2,4-dimethylpentane	1.299	1.394	1.276
18.843	634.900	O7	O16	0.007	0.007	0.008
19.247	639.130	I7	2,2,3-trimethylbutane	0.048	0.050	0.047
19.887	645.570	I7	C7-Iso-Paraffin	0.008	0.008	0.008
20.020	646.870	O7	4,4-dimethyl-c-pentene-2	0.012	0.012	0.012
20.353	650.060	O6	1-methylcyclopentene	0.029	0.026	0.034
20.473	651.190	I7	C7-Iso-Paraffin	0.015	0.014	0.018
20.590	652.270	A6	benzene	0.293	0.241	0.369
20.673	653.050	O7	3-ethylpentene-1	0.137	0.141	0.137
20.827	654.450	O7	2-methyl-c-hexene-3	0.026	0.027	0.026
20.977	655.810	O7	5-methylhexene-1	0.016	0.017	0.016
21.313	658.810	I7	3,3-dimethylpentane	0.186	0.193	0.182
21.500	660.450	O7	2-methyl-t-hexene-3	0.020	0.020	0.020
21.700	662.170	O7	2-ethyl-3-methylbutene-1	1.347	1.363	1.350
21.920	664.040	O7	4-methylhexene-1	0.059	0.061	0.059
22.100	665.550	I7	C7-Iso-Paraffin	0.012	0.012	0.012
22.190	666.300	O7	4-methyl-t/c-hexene-2	0.008	0.008	0.008
22.313	667.320	I7	C7-Iso-Paraffin	0.046	0.047	0.046
22.577	669.470	I7	C7-Iso-Paraffin	0.127	0.130	0.127
22.753	670.890	I7	2-methylhexane	1.800	1.916	1.768
22.937	672.340	I7	2,3-dimethylpentane	2.703	2.808	2.655
23.273	674.970	N7	1,1-dimethylcyclopentane	0.104	0.099	0.104
23.513	676.810	O7	1,6-heptadiene	0.041	0.040	0.041
23.780	678.830	I7	3-methylhexane	1.973	2.074	1.938
24.203	681.960	I7	C7-Iso-Paraffin	0.048	0.051	0.048
24.543	684.420	N7	1c,3-dimethylcyclopentane	0.397	0.385	0.398
24.883	686.830	N7	1t,3-dimethylcyclopentane	0.362	0.349	0.363
25.040	687.930	N7	1t,2-dimethylcyclopentane	0.258	0.248	0.258
25.220	689.170	I7	3-ethylpentane	0.407	0.421	0.400
25.413	690.500	I8	2,2,4-trimethylpentane	4.031	4.207	3.473
26.160	695.490	O7	3-methyl-c-hexene-3	0.072	0.072	0.072
26.620	698.470	O7	t-heptene-3	0.251	0.258	0.252
26.860	700.000	P7	n-heptane	1.668	1.762	1.639
27.120	702.280	O7	3-methyl-c-hexene-2	0.294	0.298	0.294
27.257	703.470	O7	3-methyl-t-hexene-3	0.111	0.115	0.111
27.493	705.520	O7	3-ethylpentene-2	0.128	0.127	0.128
27.700	707.280	I8	C8-Iso-Paraffin	0.069	0.068	0.069
28.117	710.790	O7	3-methyl-t-hexene-2	0.235	0.236	0.236

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG
Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:
Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 9**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
28.577	714.580	O7	O26	0.133	0.134	0.134
29.110	718.870	O7	O27	0.017	0.017	0.017
29.207	719.640	I8	C8-Iso-Paraffin	0.009	0.009	0.009
29.357	720.820	I8	2,2-dimethylhexane	0.181	0.188	0.156
29.463	721.660	N7	methylcyclohexane	1.195	1.122	1.198
29.913	725.140	N8	1,1,3-trimethylcyclopentane	0.170	0.164	0.149
31.083	733.890	I8	C8-Iso-Paraffin	0.224	0.216	0.197
31.280	735.320	N8	1c,2t,4-trimethylcyclopentane	0.450	0.425	0.395
31.417	736.300	O7	O34	0.102	0.100	0.102
31.543	737.210	I8	3,3-dimethylhexane	0.684	0.696	0.590
32.327	742.730	N8	1t,2c,3-trimethylcyclopentane	0.173	0.162	0.152
32.533	744.160	I8	2,3,4-trimethylpentane	0.063	0.063	0.054
33.227	748.860	O7	O39	0.039	0.039	0.035
33.367	749.790	I8	I1	0.135	0.136	0.117
33.603	751.360	I8	C8-Iso-Paraffin	0.026	0.026	0.022
33.760	752.390	I8	2,3,3-trimethylpentane	1.504	1.496	1.296
34.030	754.150	O8	O41	0.065	0.064	0.057
34.253	755.600	A7	toluene	4.467	3.721	4.772
34.537	757.410	I8	C8-Iso-Paraffin	0.058	0.048	0.062
34.710	758.510	I8	2,3-dimethylhexane	0.021	0.022	0.018
34.943	759.980	O8	O44	0.039	0.039	0.034
35.370	762.640	N8	1,1,2-trimethylcyclopentane	0.626	0.585	0.549
35.560	763.810	O7	O46	0.057	0.056	0.050
35.677	764.530	O8	*2-ethylhexene-1	0.040	0.037	0.035
35.873	765.720	I8	4-methylheptane	0.072	0.074	0.062
36.300	768.300	I8	2-methylheptane	0.843	0.872	0.726
36.523	769.630	N8	1c,2c,4-trimethylcyclopentane	0.314	0.298	0.276
36.697	770.650	N8	1c,3-dimethylcyclohexane	0.074	0.070	0.065
36.780	771.150	I8	C8-Iso-Paraffin	0.083	0.078	0.072
37.137	773.230	N8	1c,2t,3-trimethylcyclopentane	0.107	0.100	0.094
37.473	775.180	N8	1t,4-dimethylcyclohexane	0.793	0.751	0.695
37.677	776.350	N8	1,1-dimethylcyclohexane	0.498	0.461	0.437
37.810	777.110	O8	1,3-octadiene	0.071	0.067	0.063
38.003	778.200	I9	2,2,5-trimethylhexane	0.165	0.169	0.127
38.927	783.350	N8	3c-ethylmethylcyclopentane	0.047	0.044	0.041
39.287	785.310	I8	C8-Iso-Paraffin	0.392	0.369	0.344
39.517	786.550	N8	3t-ethylmethylcyclopentane	0.171	0.161	0.150
39.887	788.540	N8	2t-ethylmethylcyclopentane	0.127	0.120	0.112

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments: Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 10**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
40.113	789.740	N8	1,1-methylethylcyclopentane	0.127	0.117	0.111
40.497	791.760	I9	2,2,4-trimethylhexane	0.062	0.060	0.047
40.987	794.300	N8	1t,2-dimethylcyclohexane	0.250	0.233	0.220
41.613	797.500	N8	1t,3-dimethylcyclohexane	0.159	0.148	0.140
41.873	798.810	N8	1c,2c,3-trimethylcyclopentane	0.021	0.020	0.019
42.110	800.000	P8	n-octane	0.895	0.920	0.772
42.303	801.110	N8	1c,4-dimethylcyclohexane	0.174	0.161	0.153
42.807	804.000	O8	t-octene-2	0.048	0.049	0.042
43.190	806.160	O8	O49	0.091	0.091	0.080
43.453	807.640	I9	C9-Iso-Paraffin	0.062	0.062	0.054
43.577	808.330	N8	i-propylcyclopentane	0.024	0.022	0.021
44.407	812.890	O8	c-octene-2	0.029	0.029	0.022
44.900	815.560	N8	N1	0.020	0.019	0.018
45.343	817.930	I9	2,3,4-trimethylhexane	0.070	0.069	0.054
45.710	819.860	I9	2,2,3,4-tetramethylpentane	0.060	0.059	0.046
46.067	821.730	N8	N2	0.042	0.039	0.037
46.533	824.150	I9	2,3,5-trimethylhexane	0.017	0.017	0.013
46.963	826.350	N8	1c,2-dimethylcyclohexane	0.139	0.126	0.122
48.100	832.050	I9	2,2-dimethylheptane	0.306	0.311	0.235
48.437	833.710	N8	N4	0.127	0.117	0.111
48.860	835.780	N9	1,1,4-trimethylcyclohexane	0.025	0.023	0.019
49.040	836.650	I9	2,2,3-trimethylhexane	0.030	0.030	0.023
49.350	838.150	I9	2,4-dimethylheptane	0.104	0.105	0.080
49.953	841.020	I9	4,4-dimethylheptane	0.209	0.211	0.161
52.280	851.750	A8	ethylbenzene	2.332	1.943	2.162
53.027	855.080	I9	I3	0.053	0.052	0.041
54.523	861.580	A8	m-xylene	3.875	4.099	3.021
54.800	862.760	A8	p-xylene	1.569	1.660	1.223
55.133	864.170	N9	1c,3c,5c-trimethylcyclohexane	0.118	0.109	0.092
56.337	869.190	I9	3,4 -dimethylheptane	0.040	0.039	0.030
57.073	872.200	I9	I5	0.230	0.228	0.177
57.323	873.220	I9	4-ethylheptane	0.301	0.302	0.231
58.500	877.910	I9	3-ethylheptane	0.068	0.068	0.052
58.807	879.120	I9	3-methyloctane	0.341	0.342	0.262
59.650	882.400	A8	o-xylene	2.028	1.932	1.557
60.537	885.790	I9	I6	0.072	0.071	0.055
61.030	887.660	N9	N18	0.072	0.066	0.056
61.240	888.450	N9	N19	0.130	0.121	0.102

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Sample: 2009050507-001A RG
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
61.687	890.110	N9	N20	0.064	0.059	0.050
61.850	890.720	I9	I8	0.203	0.200	0.155
62.220	892.080	N9	i-butylcyclopentane	0.020	0.018	0.015
63.210	895.690	N9	N22	0.037	0.035	0.029
63.567	896.980	N9	N23	0.035	0.032	0.027
64.193	899.220	I9	I10	0.105	0.103	0.080
64.413	900.000	P9	n-nonane	0.446	0.448	0.342
64.800	902.950	N9	1,1-methylethylcyclohexane	0.045	0.040	0.035
66.067	912.480	A9	3,3,5-Trimethylheptane	0.243	0.203	0.199
66.593	916.390	I10	I11	0.053	0.053	0.037
67.360	922.010	I10	I12	0.104	0.103	0.072
67.733	924.720	I10	2,4-dimethyloctane	0.077	0.076	0.053
68.770	932.170	I10	2,6-dimethyloctane	0.064	0.063	0.044
68.887	933.000	I10	2,5-dimethyloctane	0.080	0.079	0.055
69.567	937.800	I10	C10-Iso-Paraffin	0.093	0.092	0.065
69.697	938.720	N10	N30	0.030	0.027	0.021
70.270	942.720	I10	3,3-dimethyloctane	0.108	0.105	0.075
70.817	946.500	A9	n-propylbenzene	0.692	0.580	0.567
71.140	948.720	I10	3,6-dimethyloctane	0.040	0.040	0.028
71.333	950.050	I10	3-methyl-5-ethylheptane	0.033	0.033	0.023
71.973	954.400	A9	1,3-methylethylbenzene	1.887	1.576	1.545
72.257	956.310	A9	1,4-methylethylbenzene	0.832	0.697	0.681
72.803	959.980	N10	N33	0.017	0.015	0.012
73.097	961.940	A9	1,3,5-trimethylbenzene	0.828	0.691	0.678
73.390	963.880	I10	I15	0.041	0.040	0.028
74.027	968.080	I10	5-methylnonane	0.040	0.039	0.027
74.380	970.390	A9	1,2-methylethylbenzene	1.061	0.870	0.869
74.620	971.960	I10	2-methylnonane	0.130	0.130	0.090
75.040	974.680	I10	3-ethyloctane	0.020	0.019	0.014
75.480	977.510	I10	3-methylnonane	0.142	0.140	0.098
76.023	980.990	I10	I19	0.100	0.098	0.069
76.407	983.420	A9	1,2,4-trimethylbenzene	2.845	2.346	2.330
76.590	984.580	N10	i-butylcyclohexane	0.056	0.051	0.039
77.013	987.250	I10	I21	0.091	0.089	0.063
77.147	988.080	I10	I22	0.041	0.040	0.028
77.320	989.170	I10	I23	0.025	0.024	0.017
77.643	991.190	N10	N37	0.034	0.031	0.024
78.227	994.800	A10	i-butylbenzene	0.026	0.022	0.019

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Sample: 2009050507-001A RG
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
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Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 12**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
78.403	995.890	I10	C10-Iso-Paraffin	0.075	0.063	0.055
78.733	997.920	A10	sec-butylbenzene	0.110	0.092	0.080
79.073	1000.000	P10	n-decane	0.217	0.214	0.150
79.337	1002.660	N10	N38	0.039	0.035	0.027
79.757	1006.880	A9	1,2,3-trimethylbenzene	0.666	0.538	0.545
80.027	1009.590	A10	1,3-methyl-i-propylbenzene	0.135	0.113	0.099
80.393	1013.240	A10	1,4-methyl-i-propylbenzene	0.044	0.037	0.032
81.020	1019.450	A10	2-3-dihydroindene	0.281	0.210	0.234
81.563	1024.790	I11	I30	0.050	0.049	0.032
81.707	1026.190	I11	C11-Iso-Paraffin	0.017	0.017	0.011
81.893	1028.010	A10	1,2-methyl-i-propylbenzene	0.053	0.044	0.039
82.283	1031.800	I11	3-ethylnonane	0.068	0.066	0.043
82.447	1033.380	I11	I31	0.058	0.057	0.037
82.883	1037.600	I11	I32	0.017	0.016	0.011
83.087	1039.550	A10	1,3-diethylbenzene	0.239	0.199	0.175
83.377	1042.330	A10	1,3-methyl-n-propylbenzene	0.484	0.406	0.355
83.637	1044.810	I11	I33	0.026	0.025	0.016
83.783	1046.200	I11	C11-Iso-Paraffin	0.279	0.272	0.175
83.890	1047.220	A10	1,4-methyl-n-propylbenzene	0.156	0.132	0.115
84.117	1049.360	A10	1,3-dimethyl-5-ethylbenzene	0.411	0.337	0.301
84.337	1051.440	A10	1,2-diethylbenzene	0.042	0.034	0.031
84.693	1054.800	I11	C11-Iso-Paraffin	0.029	0.024	0.021
85.000	1057.680	A10	1,2-methyl-n-propylbenzene	0.176	0.146	0.129
85.533	1062.650	I11	I37	0.101	0.098	0.063
85.860	1065.680	I11	I38	0.042	0.041	0.026
86.077	1067.680	A10	1,4,dimethyl-2-ethylbenzene	0.302	0.249	0.221
86.253	1069.310	A10	A3	0.363	0.305	0.266
86.437	1071.000	I11	I39	0.048	0.047	0.031
86.863	1074.910	A10	1,2-dimethyl-4-ethylbenzene	0.641	0.529	0.470
87.460	1080.340	A10	1,3-dimethyl-2-ethylbenzene	0.025	0.020	0.018
88.700	1091.500	I11	C11-Iso-Paraffin	0.030	0.024	0.022
88.837	1092.720	A11	1,4-methyl-t-butylbenzene	0.148	0.126	0.098
89.657	1100.000	P11	n-undecane	0.087	0.084	0.055
90.027	1104.470	A10	1,2,4,5-tetramethylbenzene	0.280	0.227	0.205
90.347	1108.330	A11	1,2-methyl-n-butylbenzene	0.385	0.312	0.256
91.353	1120.370	A11	1,2-methyl-t-butylbenzene	0.016	0.013	0.011
91.900	1126.840	A10	5-methylindan	0.233	0.189	0.173
92.397	1132.690	A10	4-methylindan	0.088	0.072	0.066

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments: Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 13**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
92.650	1135.660	A11	1,2-ethyl-n-propylbenzene	0.093	0.076	0.062
92.810	1137.530	A10	2-methylindan	0.225	0.180	0.168
93.217	1142.270	I12	C12-Iso-Paraffin	0.150	0.120	0.112
93.327	1143.550	A12	1,3-di-i-propylbenzene	0.061	0.050	0.037
93.743	1148.380	I12	C12-Iso-Paraffin	0.046	0.037	0.028
93.830	1149.380	A11	n-pentylbenzene	0.030	0.024	0.020
94.103	1152.530	A12	1,2-di-i-propylbenzene	0.042	0.034	0.025
94.167	1153.260	I12	C12-Iso-Paraffin	0.041	0.033	0.025
94.493	1157.010	I12	C12-Iso-Paraffin	0.033	0.027	0.020
94.637	1158.650	A12	1,4-di-i-propylbenzene	0.080	0.065	0.049
95.050	1163.370	A10	tetrahydronaphthalene	0.027	0.020	0.020
95.243	1165.570	I12	C12-Iso-Paraffin	0.069	0.051	0.051
95.370	1167.000	A10	naphthalene	0.277	0.195	0.213
95.977	1173.860	A12	1,4-ethyl-t-butylbenzene	0.067	0.055	0.041
96.280	1177.270	I12	C12-Iso-Paraffin	0.095	0.077	0.058
96.410	1178.730	I12	I45	0.040	0.038	0.023
96.780	1182.870	I12	I47	0.062	0.060	0.036
97.093	1186.370	I12	C12-Iso-Paraffin	0.051	0.049	0.030
97.233	1187.920	I12	I48	0.085	0.082	0.049
97.373	1189.480	I12	I49	0.061	0.058	0.035
98.113	1197.650	I12	C12-Iso-Paraffin	0.044	0.042	0.025
98.327	1200.000	P12	n-dodecane	0.074	0.071	0.043
99.563	1216.840	A12	1,3,5-triethylbenzene	0.025	0.020	0.015
99.903	1221.440	I13	C13-Iso-Paraffin	0.032	0.026	0.019
100.057	1223.500	I13	C13-Iso-Paraffin	0.026	0.021	0.016
100.147	1224.710	I13	C13-Iso-Paraffin	0.016	0.013	0.010
100.917	1235.030	A12	1,2,4-triethylbenzene	0.019	0.015	0.011
101.347	1240.750	I13	C13-Iso-Paraffin	0.064	0.052	0.039
101.520	1243.050	I13	C13-Iso-Paraffin	0.021	0.017	0.013
101.613	1244.280	I13	C13-Iso-Paraffin	0.020	0.016	0.012
102.187	1251.850	I13	C13-Iso-Paraffin	0.039	0.032	0.024
102.397	1254.610	A12	n-hexylbenzene	0.054	0.044	0.033
102.693	1258.500	I13	C13-Iso-Paraffin	0.039	0.031	0.023
102.990	1262.380	I13	C13-Iso-Paraffin	0.016	0.013	0.010
103.823	1273.200	A11	1,2,3,4,5-pentamethylbenzene	0.068	0.049	0.045
104.293	1279.270	A11	2-methylnaphthalene	0.014	0.010	0.010
104.427	1280.980	A11	1-methylnaphthalene	0.255	0.181	0.176
105.607	1296.060	I13	C13-Iso-Paraffin	0.124	0.088	0.085

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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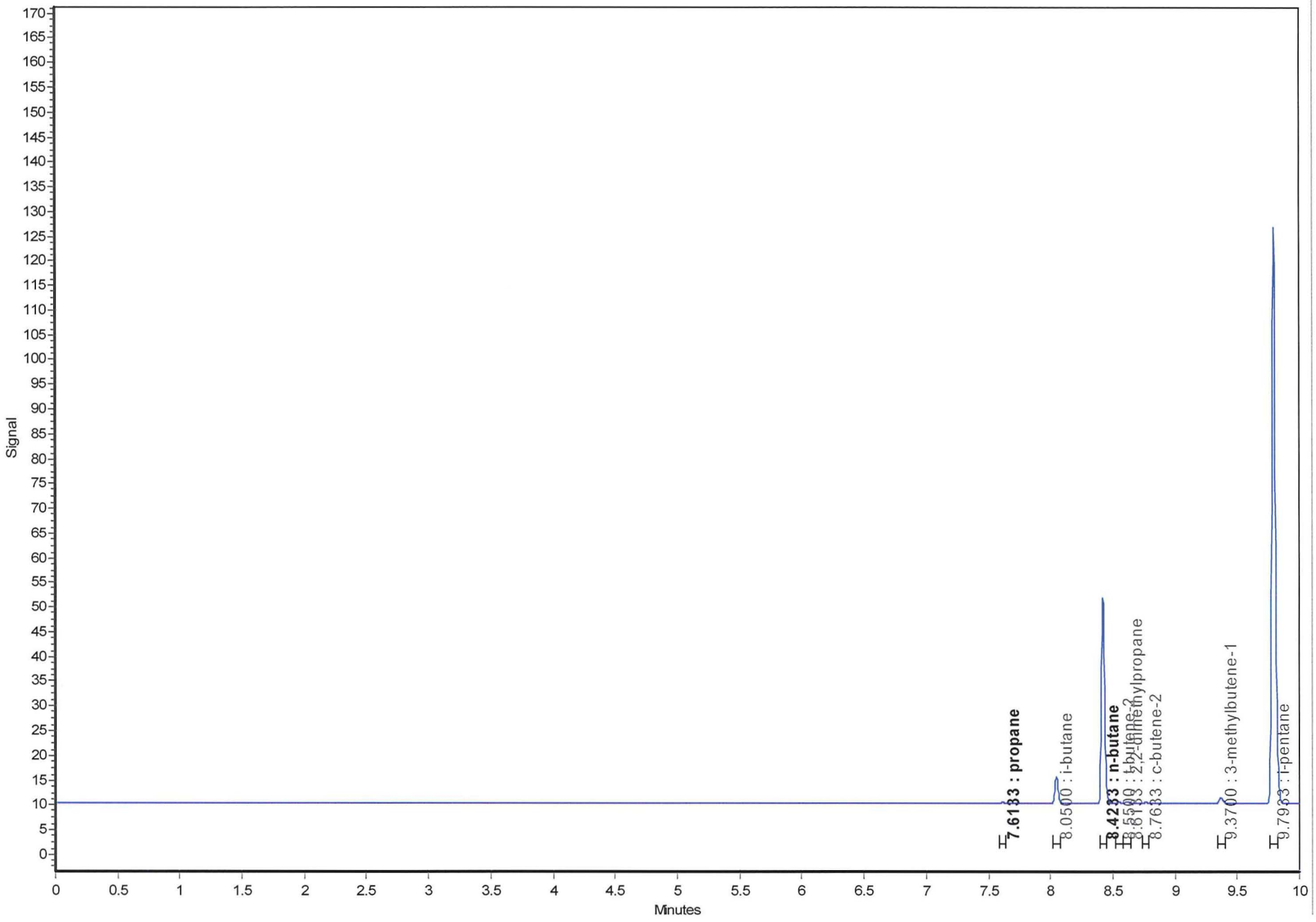
Comments:
Normalized to 100.0000%

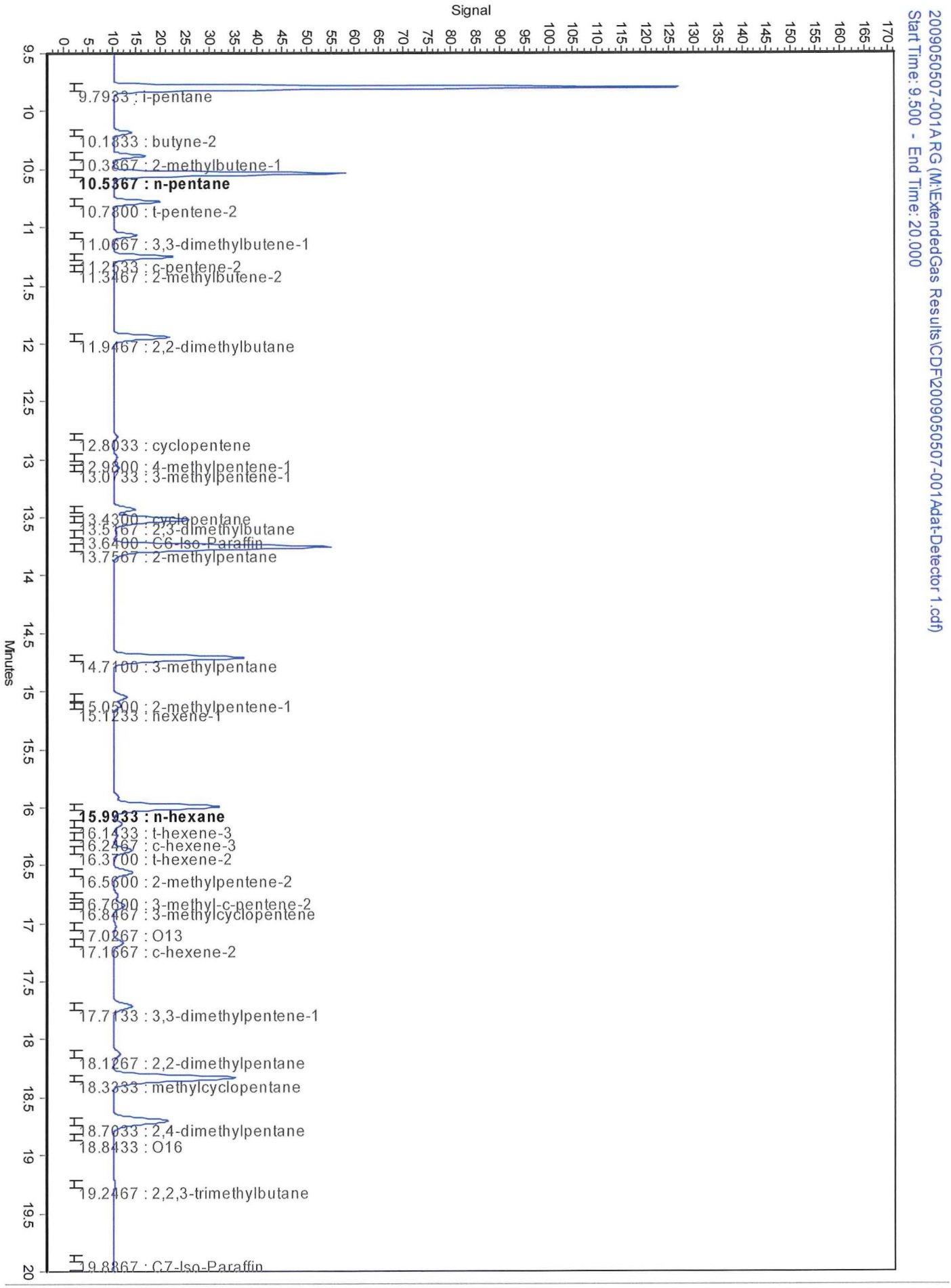
Hold

Components Listed in Chromatographic Order

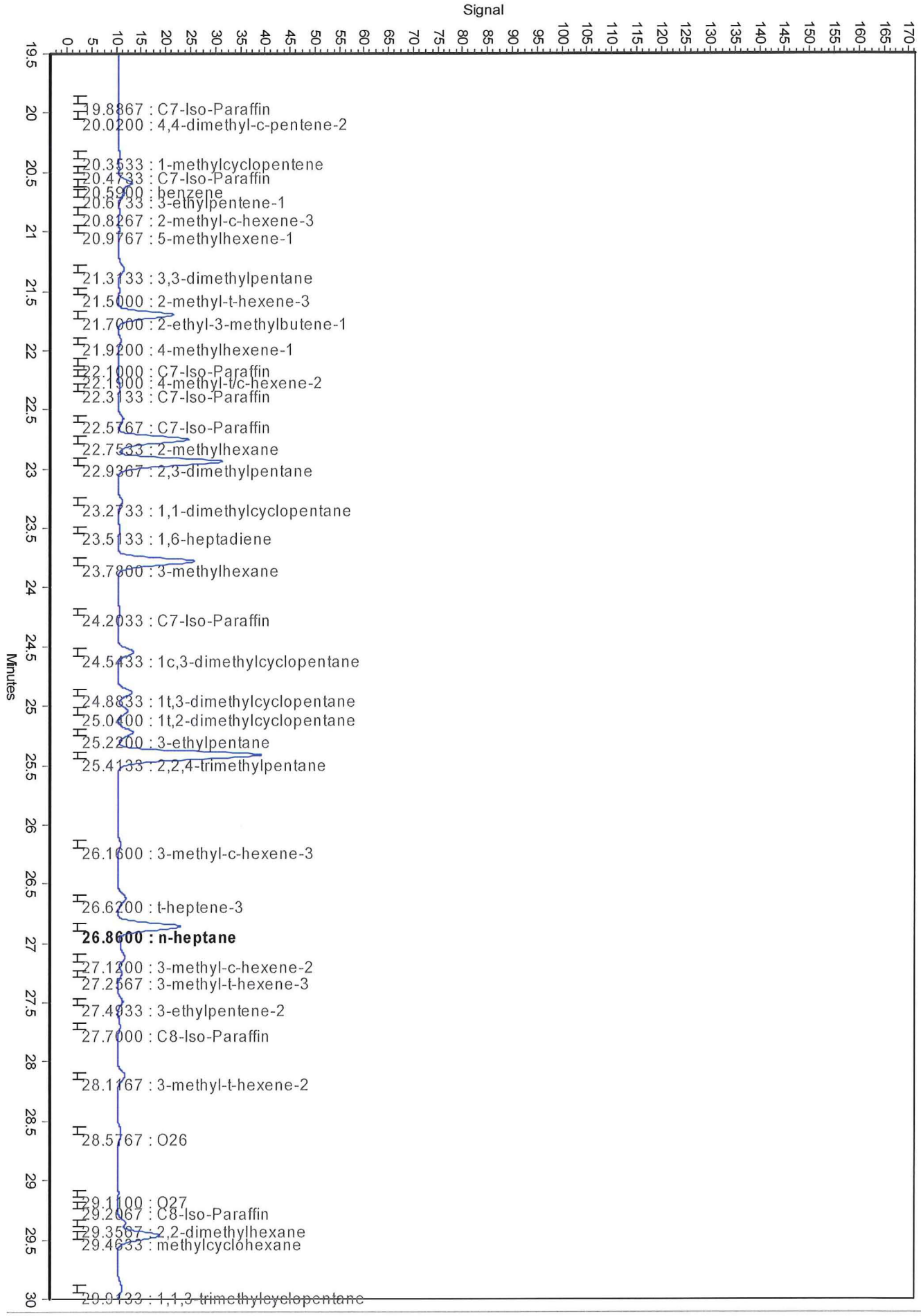
Minutes	Index	Group	Component	Mass %	Volume %	Mol %
105.917	1300.000	P13	n-tridecane	0.051	0.048	0.027
112.330	1393.160	I14	C14-Iso-Paraffin	0.022	0.021	0.012
112.460	1394.990	I14	C14-Iso-Paraffin	0.026	0.025	0.014
112.817	1400.000	P14	C14	0.032	0.031	0.016
113.323	1408.280	I15	C15-Iso-Paraffin	0.047	0.045	0.023
113.563	1412.190	I15	C15-Iso-Paraffin	0.025	0.024	0.012
118.590	1492.090	I15	C15-Iso-Paraffin	0.124	0.118	0.062
119.000	1498.450	P15	C15	0.024	0.017	0.011
127.180	1661.410	I17	C17-Iso-Paraffin	0.094	0.066	0.045
128.467	1689.050	I17	C17-Iso-Paraffin	0.015	0.010	0.007
133.010	1797.850	P18	C18	0.015	0.014	0.006
133.977	1823.640	I19	C19-Iso-Paraffin	0.063	0.058	0.024
136.850	1899.990	P19	C19	0.000	0.000	0.000
137.677	1924.060	I20	C20-Iso-Paraffin	0.017	0.016	0.006
140.320	1999.990	P20	C20	0.000	0.000	0.000
153.363	2397.080	P24	C24	0.020	0.018	0.006
186.373	2910.130	+	C30+	0.021	0.019	0.005

2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 0.000 - End Time: 10.000

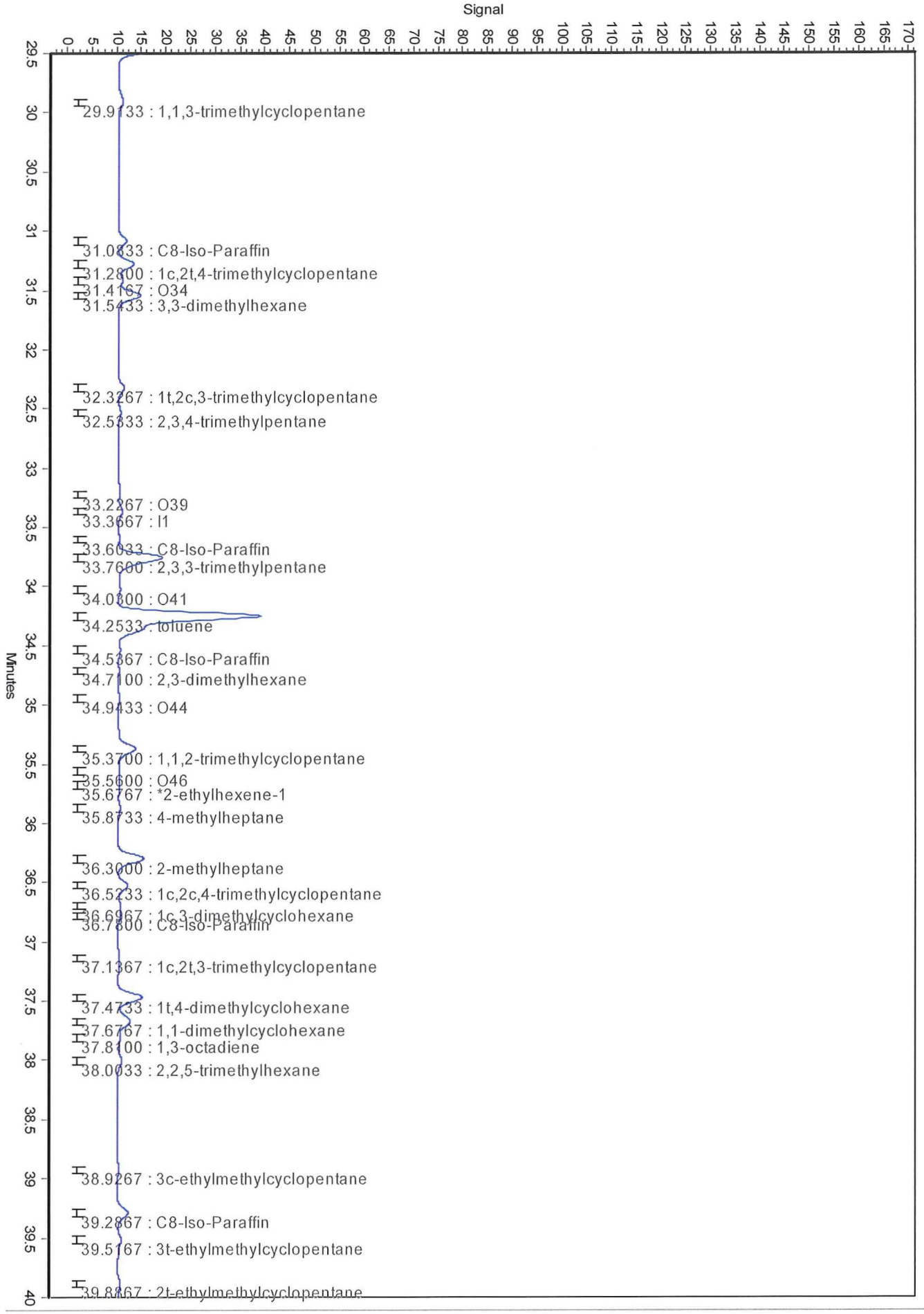



2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 9.500 - End Time: 20.000
Signal
Minutes
9.7933 : i-pentane
10.1833 : butyne-2
10.3867 : 2-methylbutene-1
10.5367 : n-pentane
10.7800 : t-pentene-2
11.0667 : 3,3-dimethylbutene-1
11.2533 : c-pentene-2
11.3467 : 2-methylbutene-2
11.9467 : 2,2-dimethylbutane
12.8033 : cyclopentene
12.9800 : 4-methylpentene-1
13.0733 : 3-methylpentene-1
13.4300 : cyclopentane
13.5167 : 2,3-dimethylbutane
13.6400 : C6-Iso-Paraffin
13.7567 : 2-methylpentane
14.7100 : 3-methylpentane
15.0500 : 2-methylpentene-1
15.1233 : hexene-1
15.9933 : n-hexane
16.1433 : t-hexene-3
16.2467 : c-hexene-3
16.3700 : t-hexene-2
16.5600 : 2-methylpentene-2
16.7600 : 3-methyl-c-pentene-2
16.8467 : 3-methylcyclopentene
17.0267 : O13
17.1667 : c-hexene-2
17.7133 : 3,3-dimethylpentene-1
18.1267 : 2,2-dimethylpentane
18.3333 : methylcyclopentane
18.7033 : 2,4-dimethylpentane
18.8433 : O16
19.2467 : 2,2,3-trimethylbutane
19.8867 : C7-Iso-Paraffin

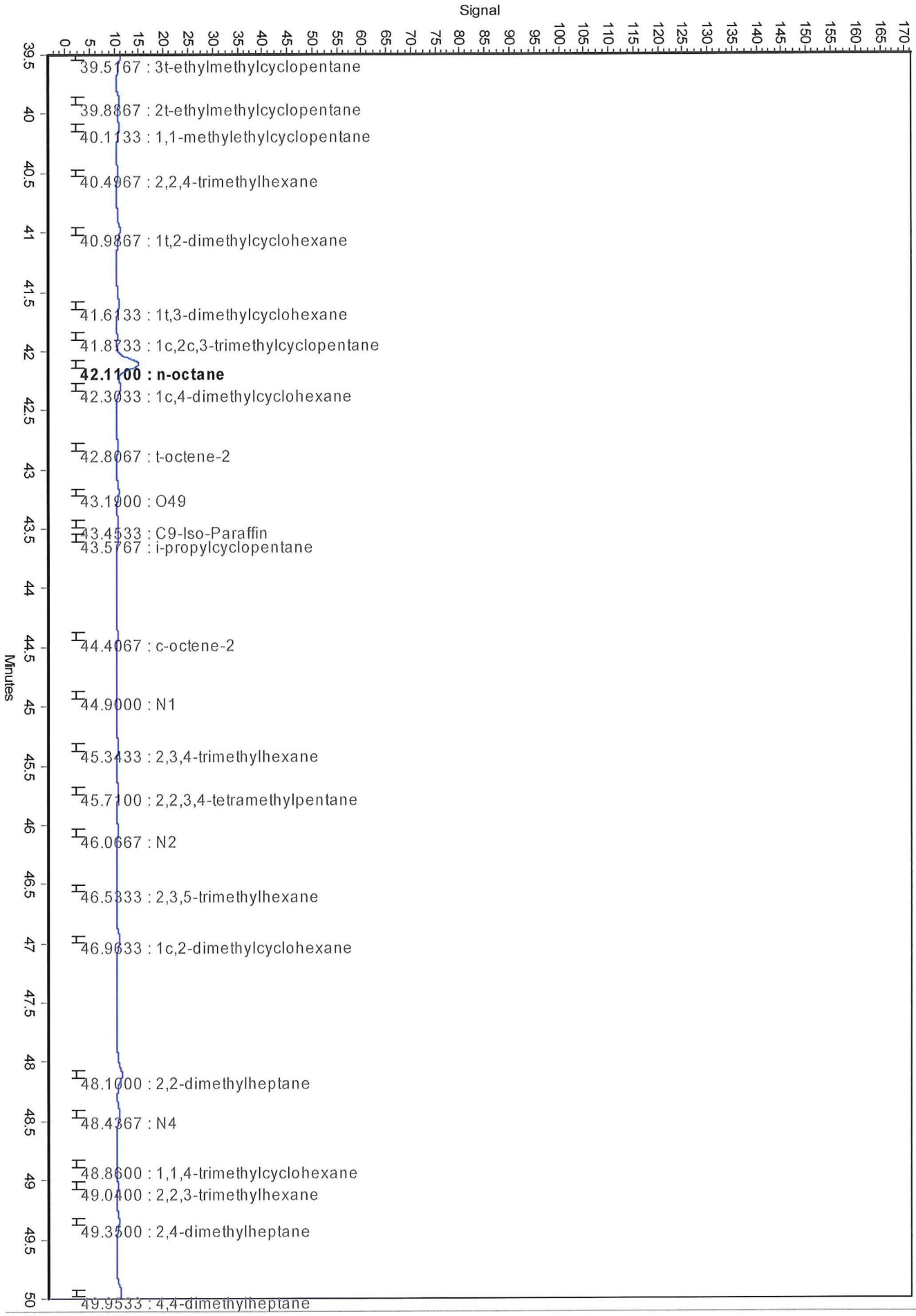
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 19.500 - End Time: 30.000



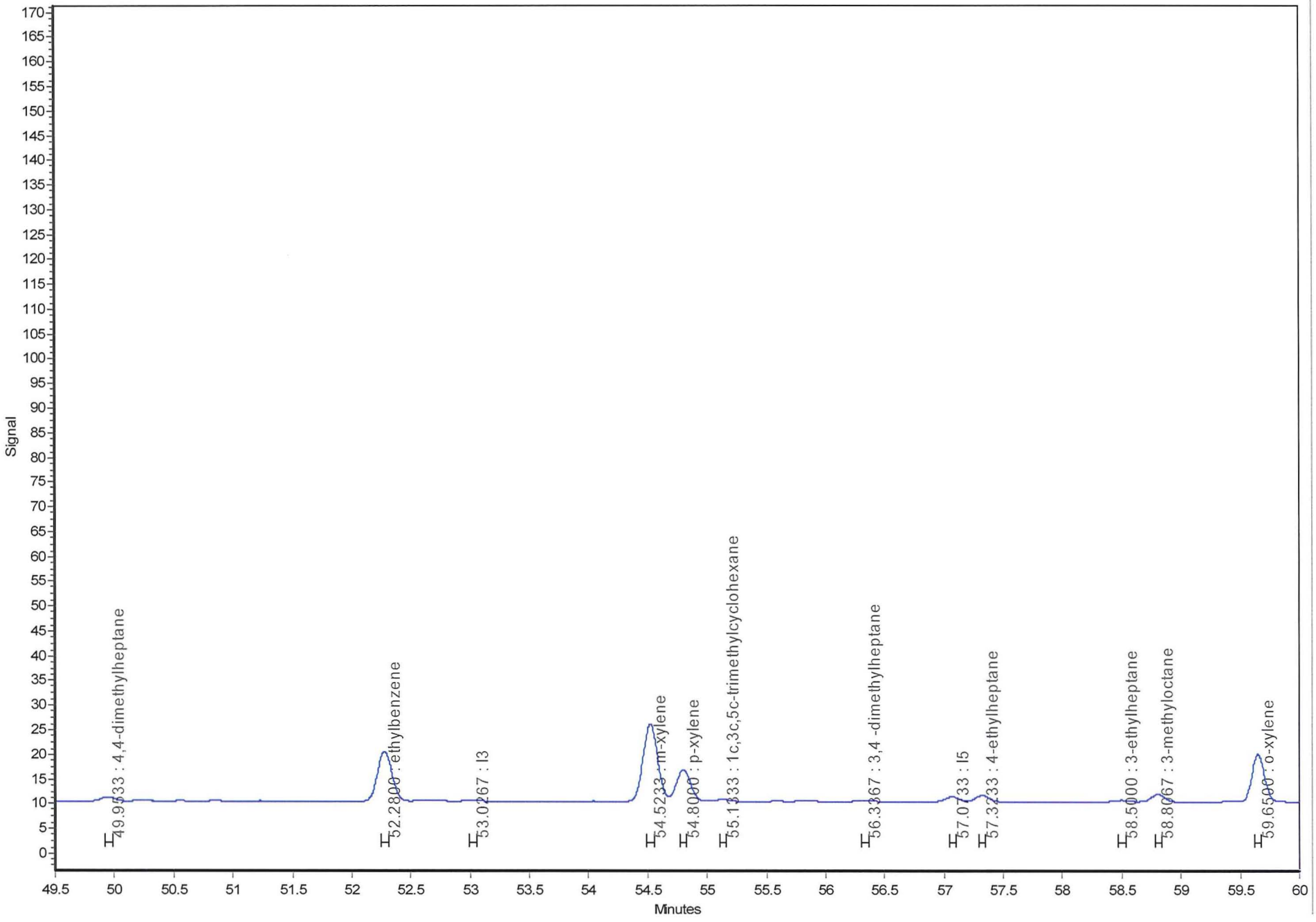
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 29.500 - End Time: 40.000



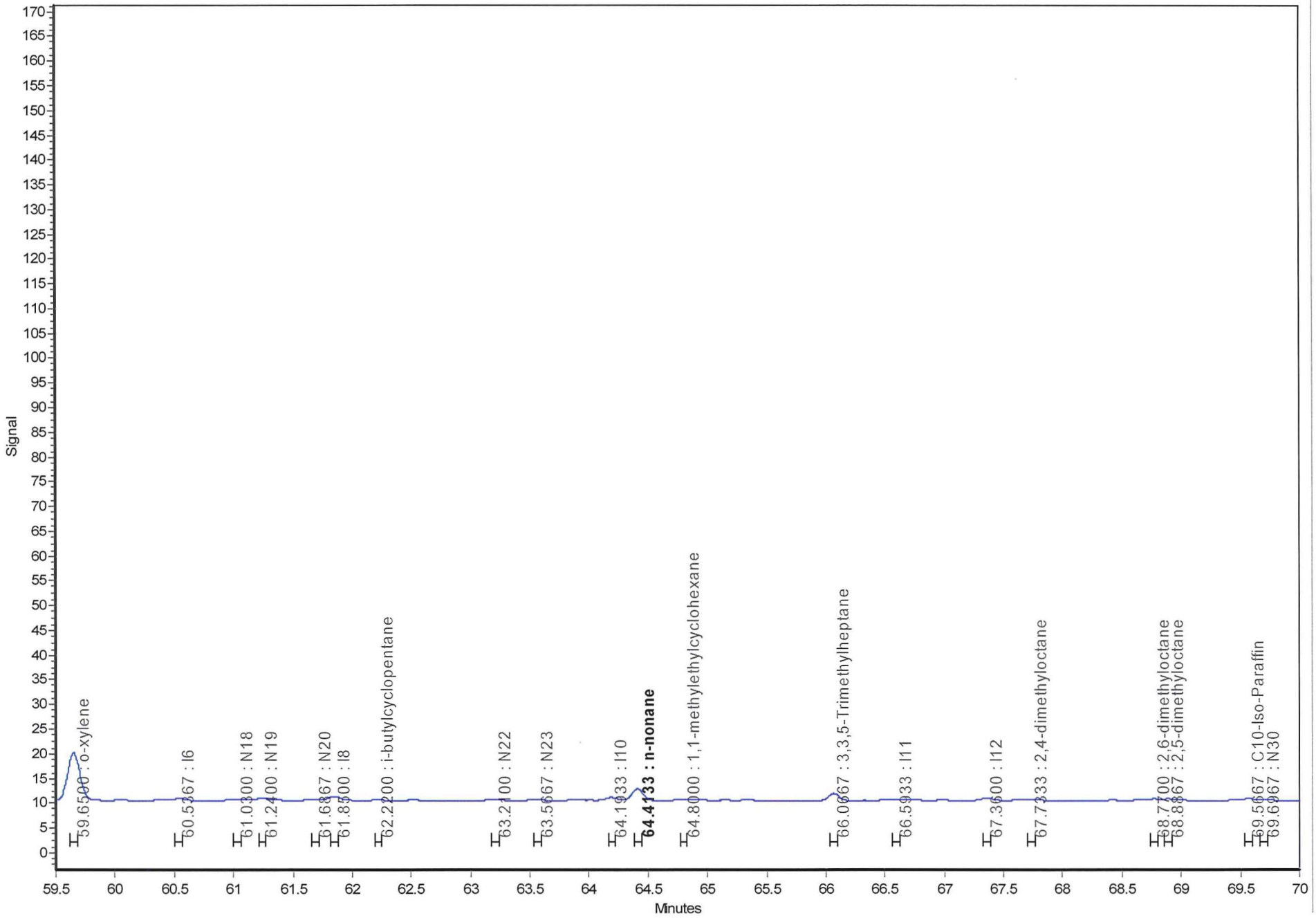
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 39.500 - End Time: 50.000



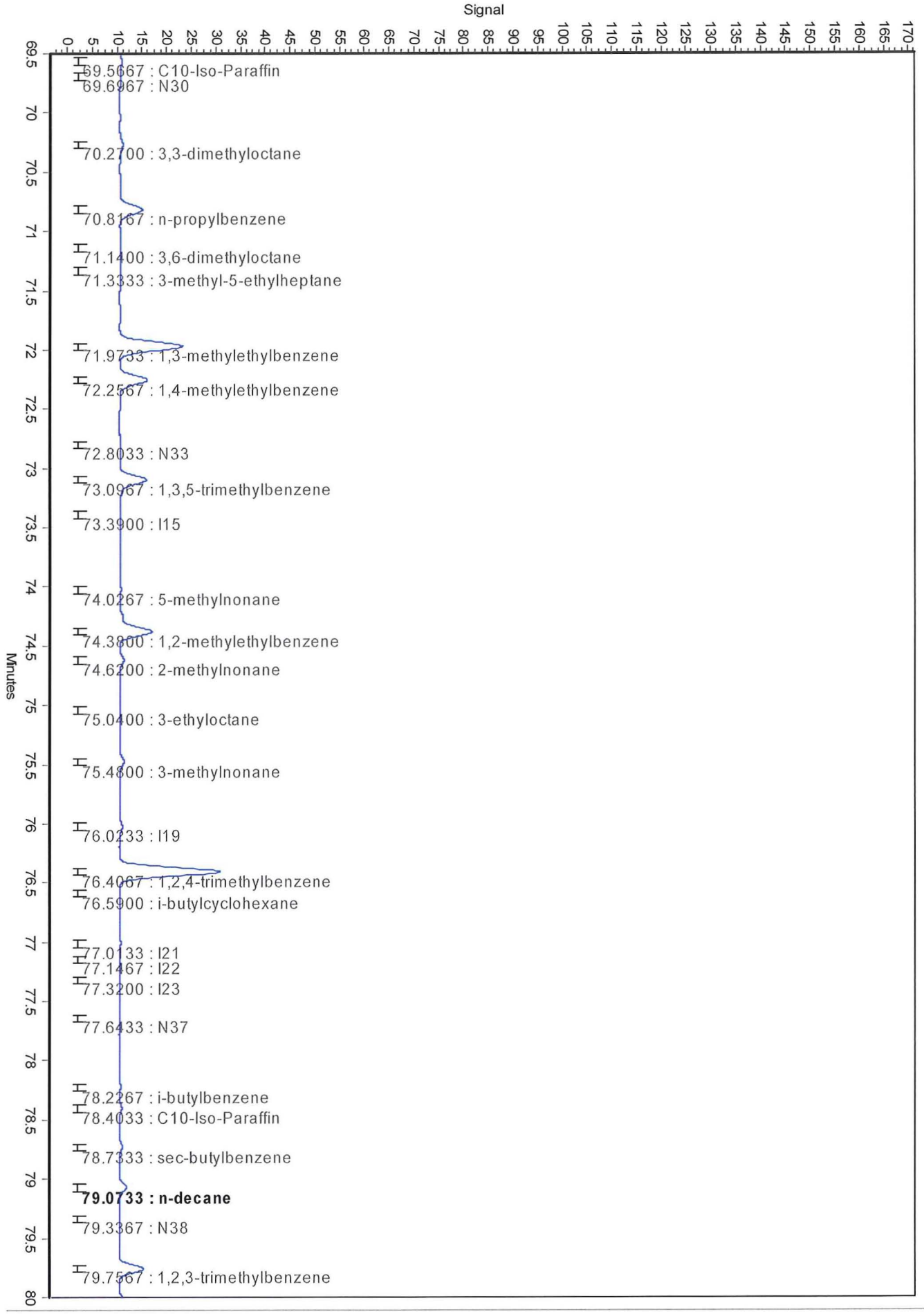
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 49.500 - End Time: 60.000



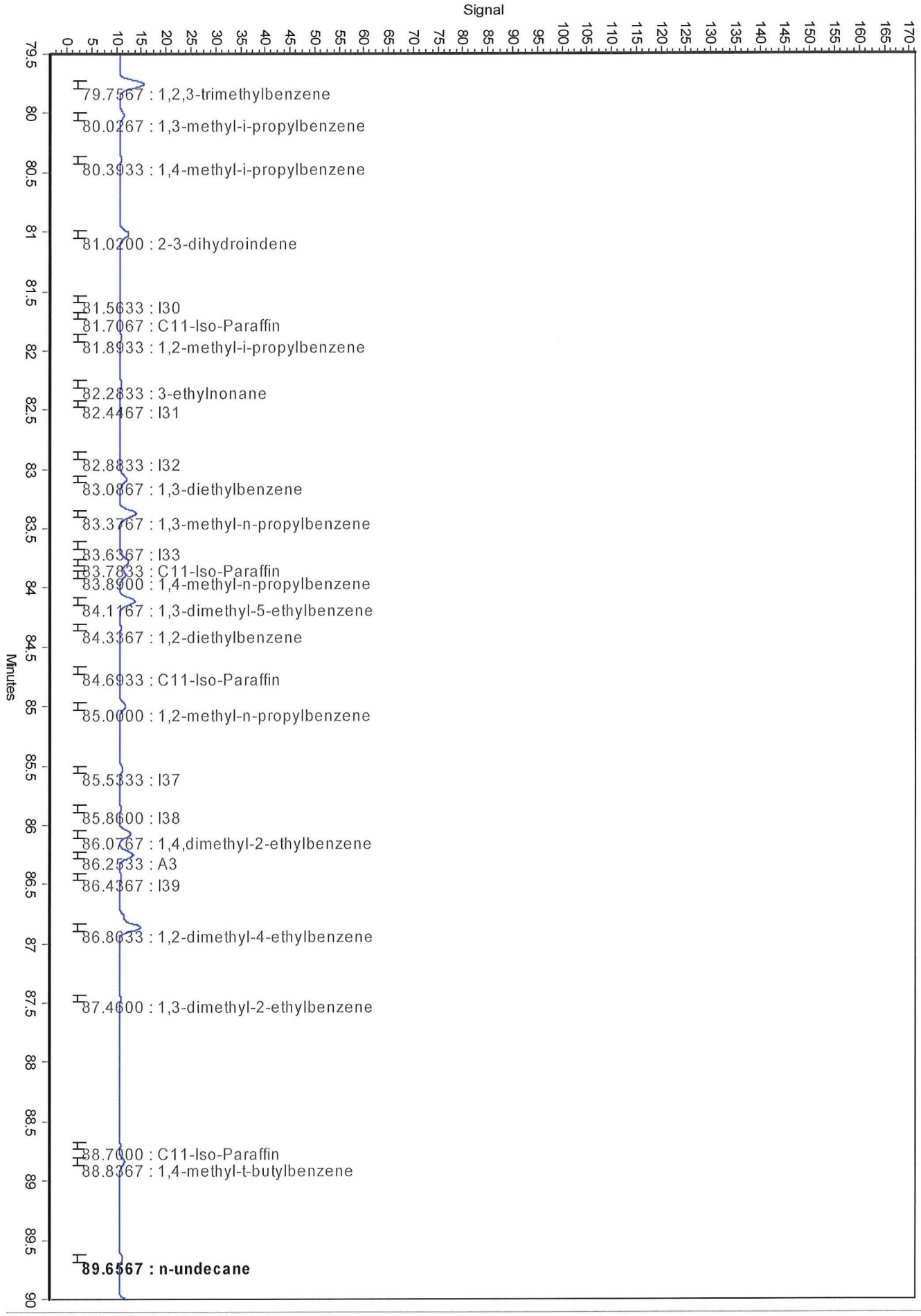
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 59.500 - End Time: 70.000

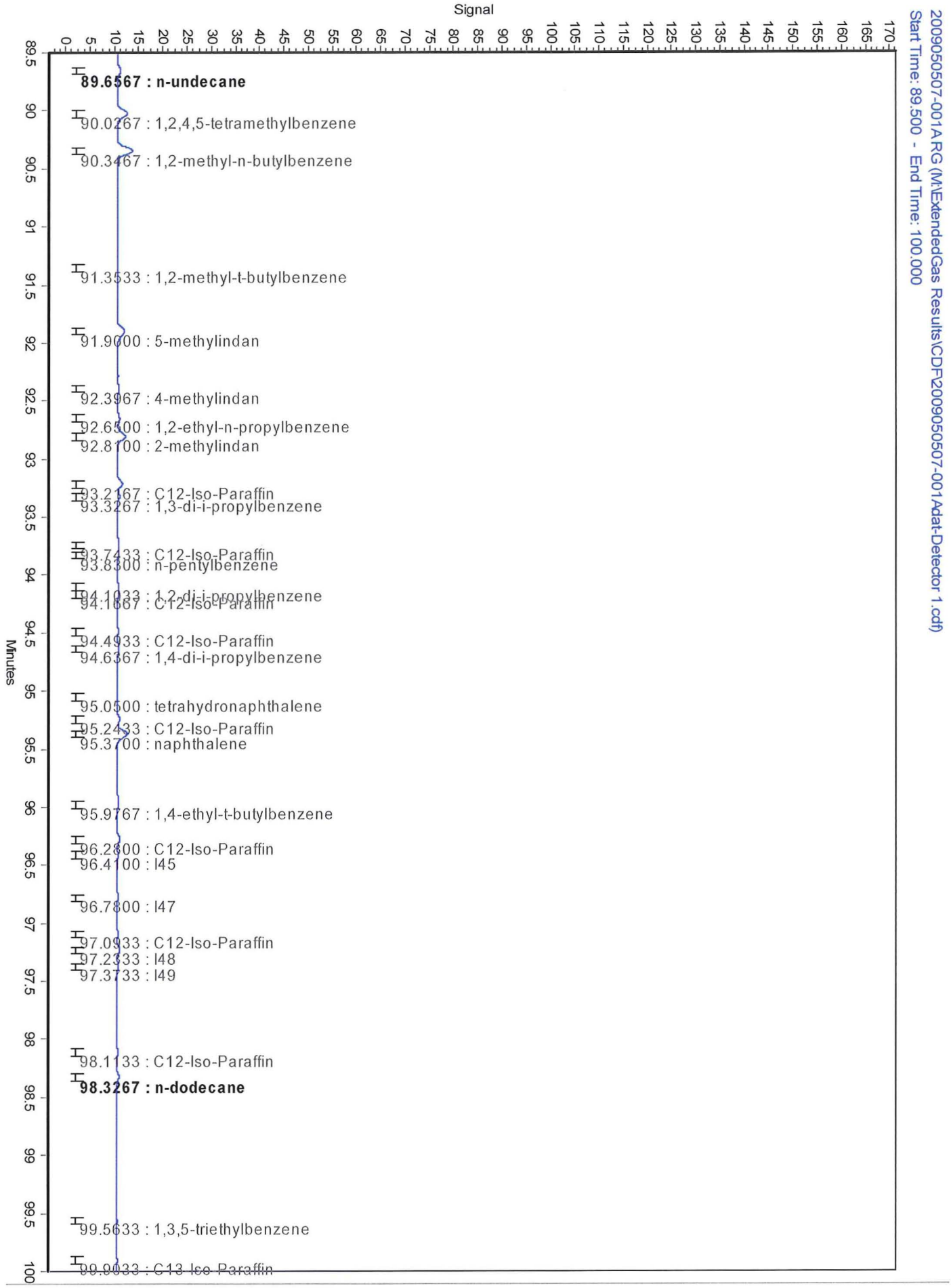


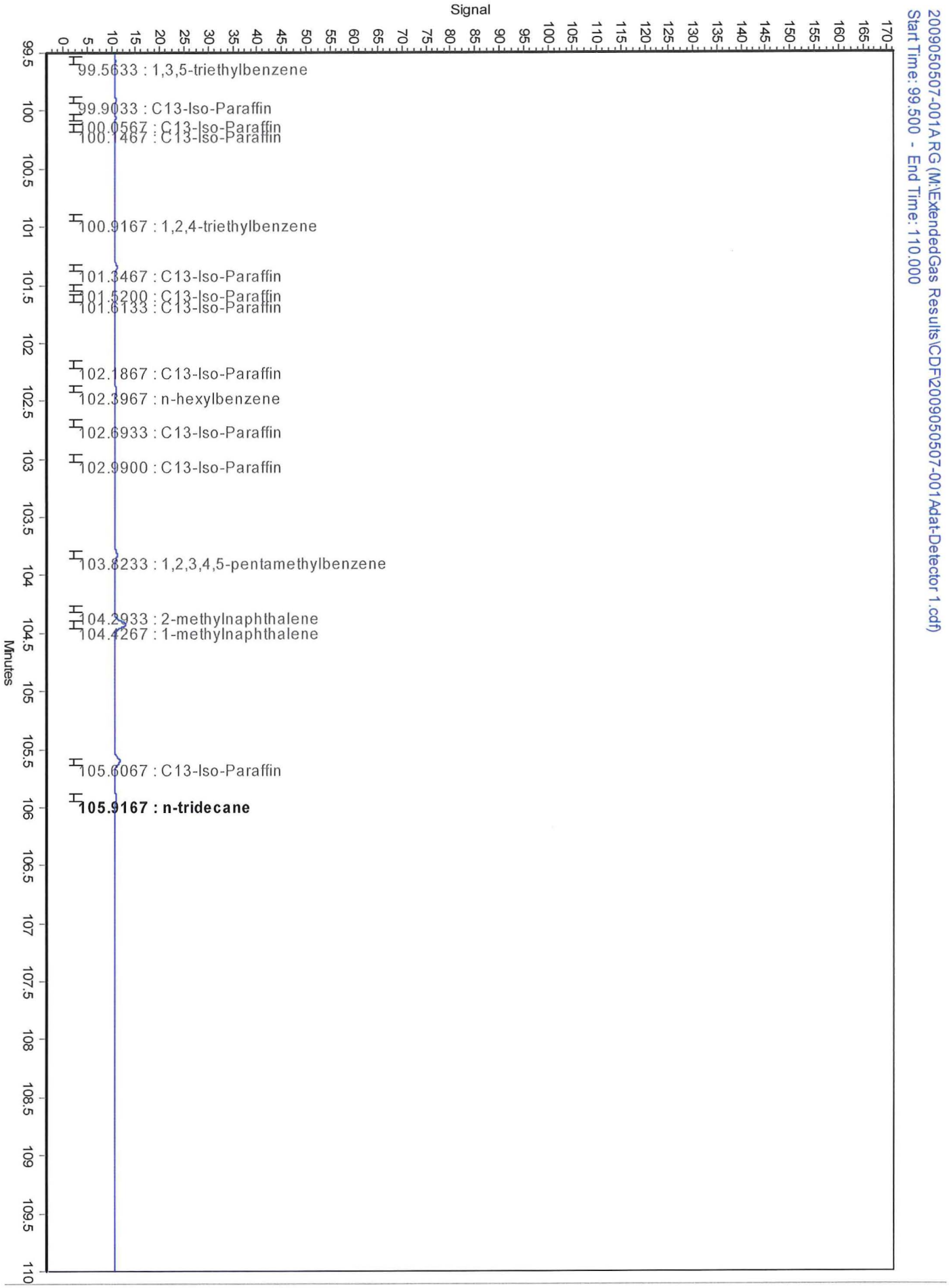
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001A\dat-Detector 1.cdf)
Start Time: 69.500 - End Time: 80.000



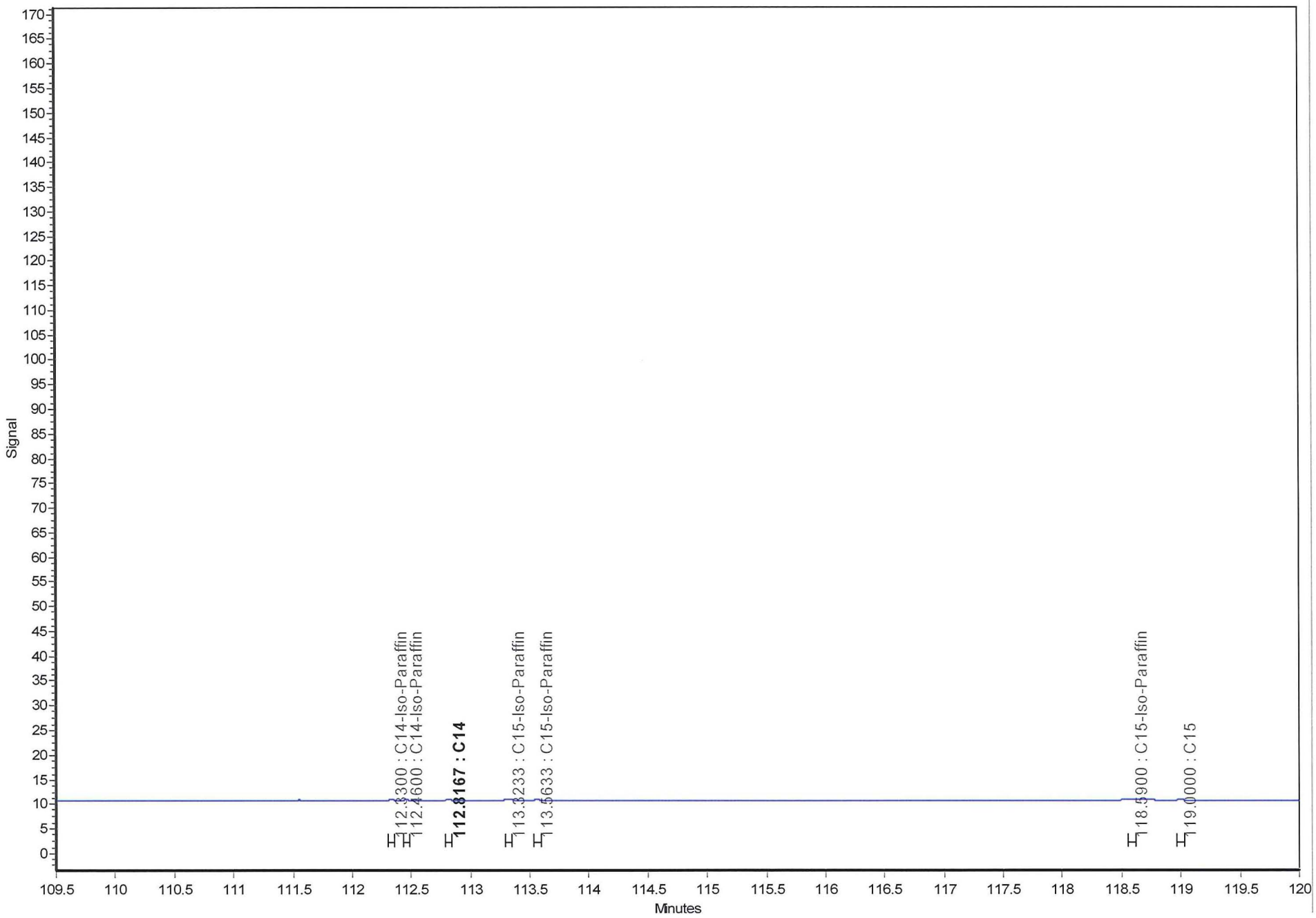
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 79.500 - End Time: 90.000



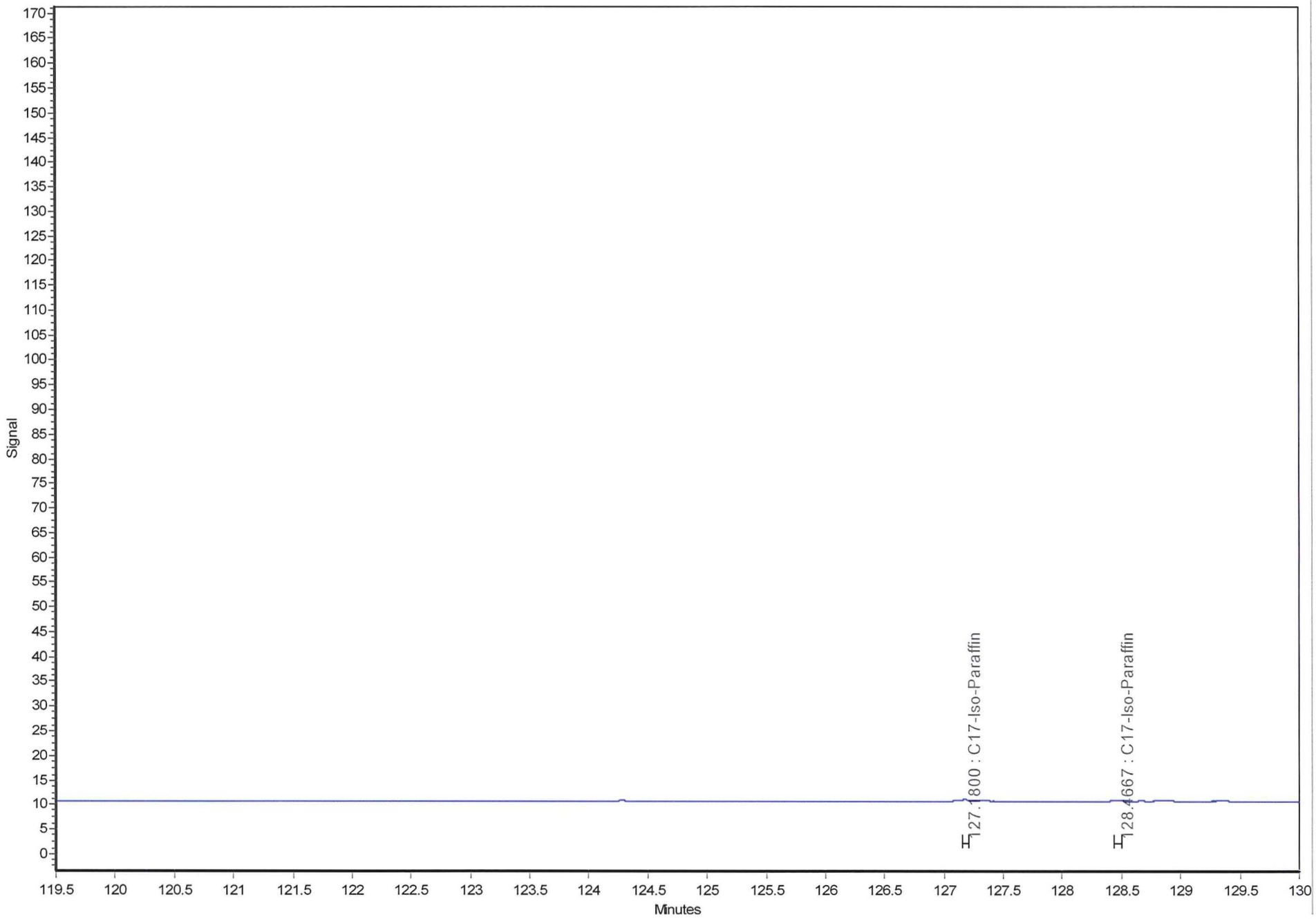

2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 89.500 - End Time: 100.000
Signal
Minutes
89.6567 : n-undecane
90.0267 : 1,2,4,5-tetramethylbenzene
90.3467 : 1,2-methyl-n-butylbenzene
91.3533 : 1,2-methyl-t-butylbenzene
91.9000 : 5-methylindan
92.3967 : 4-methylindan
92.6500 : 1,2-ethyl-n-propylbenzene
92.8700 : 2-methylindan
93.2167 : C12-Iso-Paraffin
93.3267 : 1,3-di-i-propylbenzene
93.7433 : C12-Iso-Paraffin
93.8300 : n-pentylbenzene
94.1033 : 1,2-di-i-propylbenzene
94.1667 : C12-Iso-Paraffin
94.4933 : C12-Iso-Paraffin
94.6367 : 1,4-di-i-propylbenzene
95.0500 : tetrahydronaphthalene
95.2433 : C12-Iso-Paraffin
95.3700 : naphthalene
95.9767 : 1,4-ethyl-t-butylbenzene
96.2800 : C12-Iso-Paraffin
96.4100 : I45
96.7800 : I47
97.0933 : C12-Iso-Paraffin
97.2333 : I48
97.3733 : I49
98.1133 : C12-Iso-Paraffin
98.3267 : n-dodecane
99.5633 : 1,3,5-triethylbenzene
99.9033 : C13-Iso-Paraffin


2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 99.500 - End Time: 110.000
Signal
Minutes
99.5633 : 1,3,5-triethylbenzene
99.9033 : C13-Iso-Paraffin
100.0567 : C13-Iso-Paraffin
100.1467 : C13-Iso-Paraffin
100.9167 : 1,2,4-triethylbenzene
101.3467 : C13-Iso-Paraffin
101.5200 : C13-Iso-Paraffin
101.6133 : C13-Iso-Paraffin
102.1867 : C13-Iso-Paraffin
102.3967 : n-hexylbenzene
102.6933 : C13-Iso-Paraffin
102.9900 : C13-Iso-Paraffin
103.8233 : 1,2,3,4,5-pentamethylbenzene
104.2933 : 2-methylnaphthalene
104.4267 : 1-methylnaphthalene
105.6067 : C13-Iso-Paraffin
105.9167 : n-tridecane

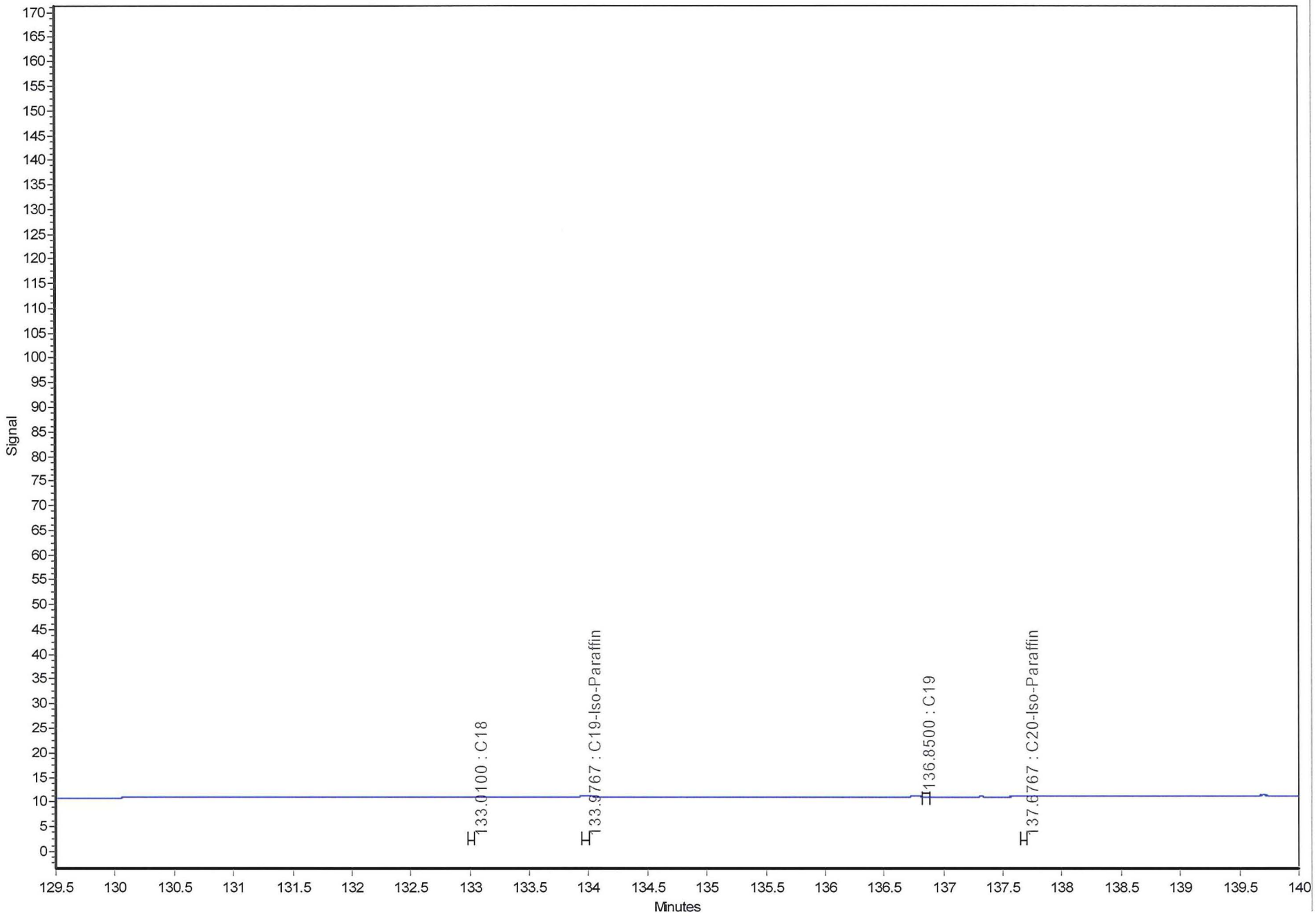
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 109.500 - End Time: 120.000



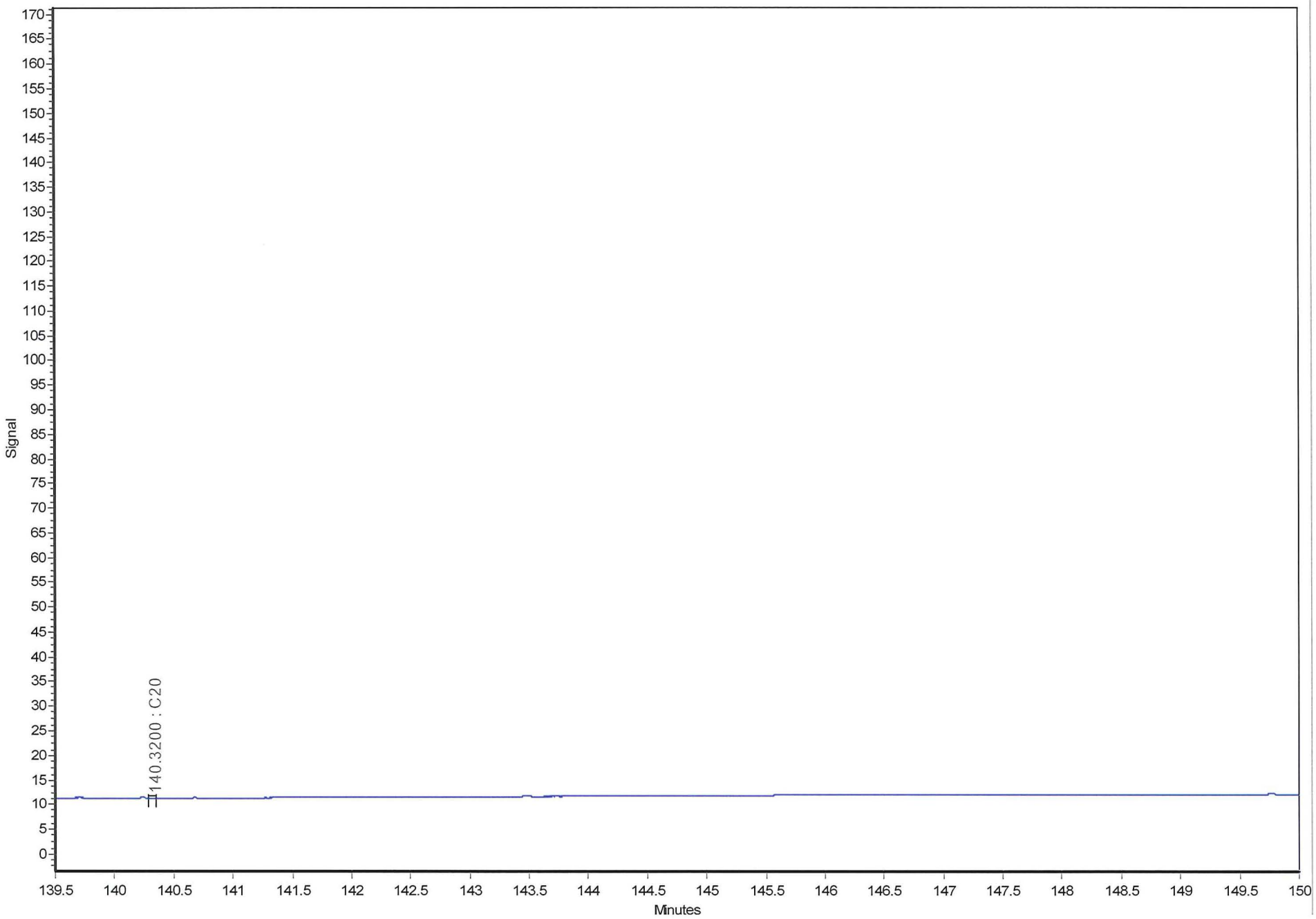
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 119.500 - End Time: 130.000



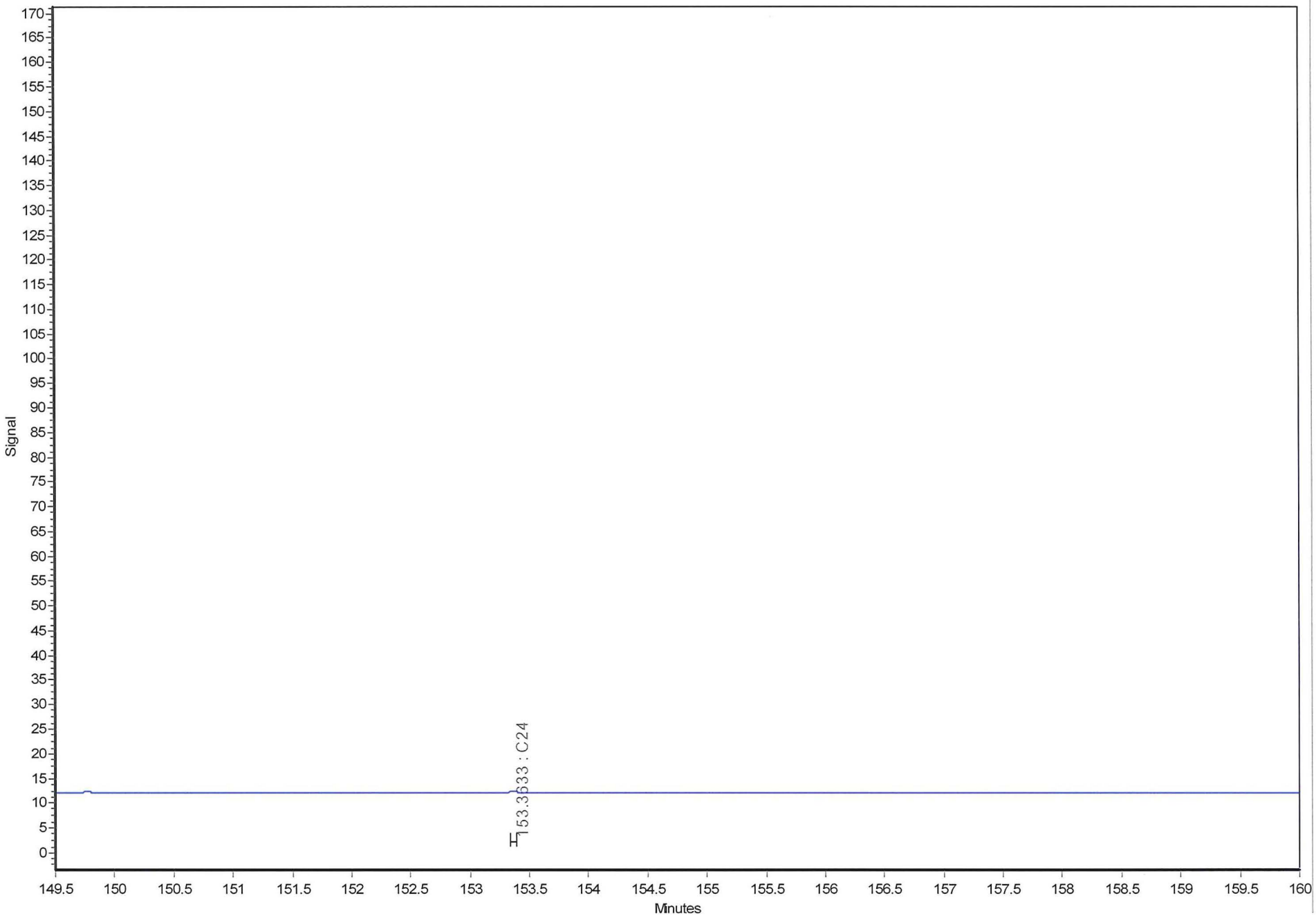
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 129.500 - End Time: 140.000



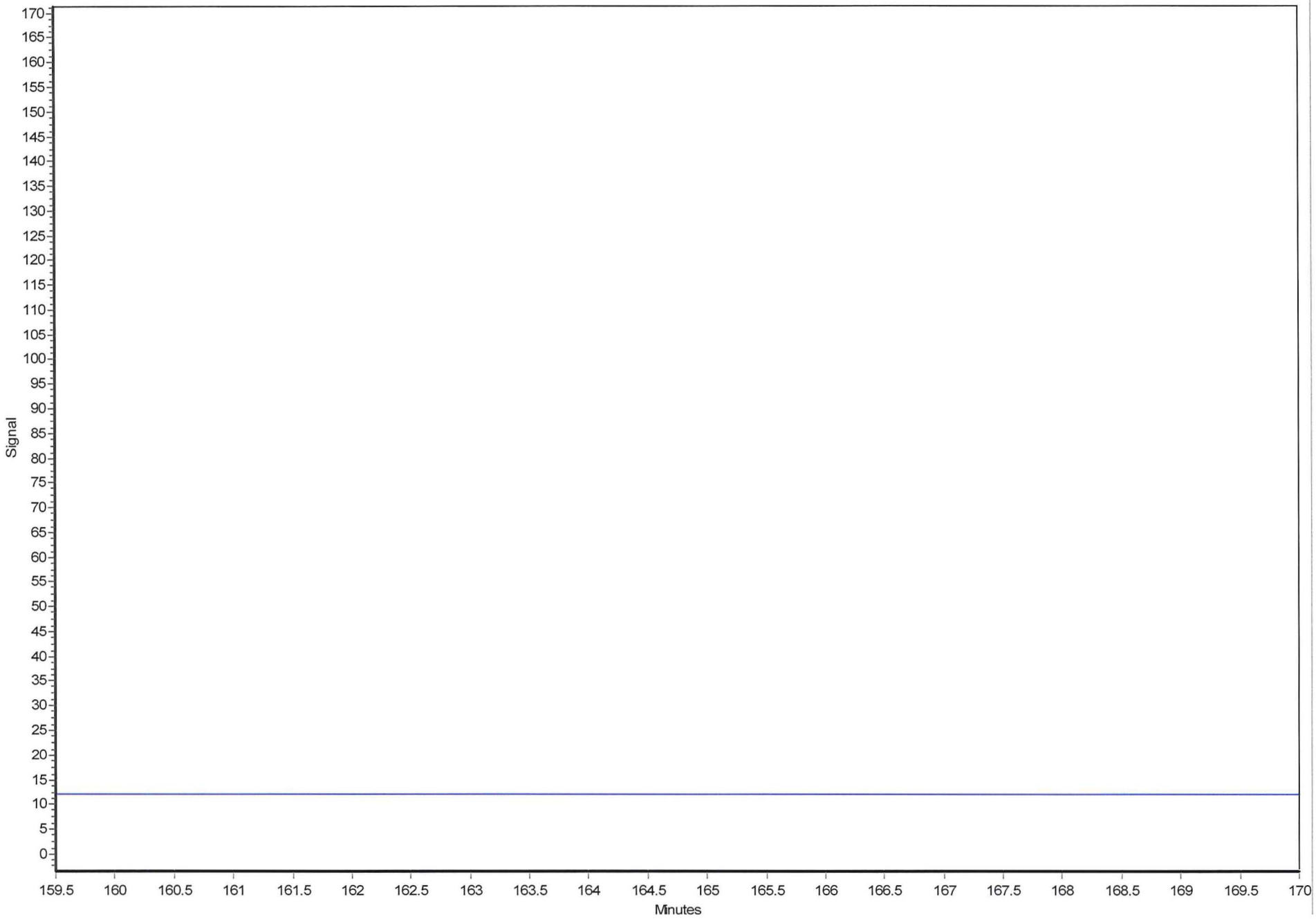
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 139.500 - End Time: 150.000



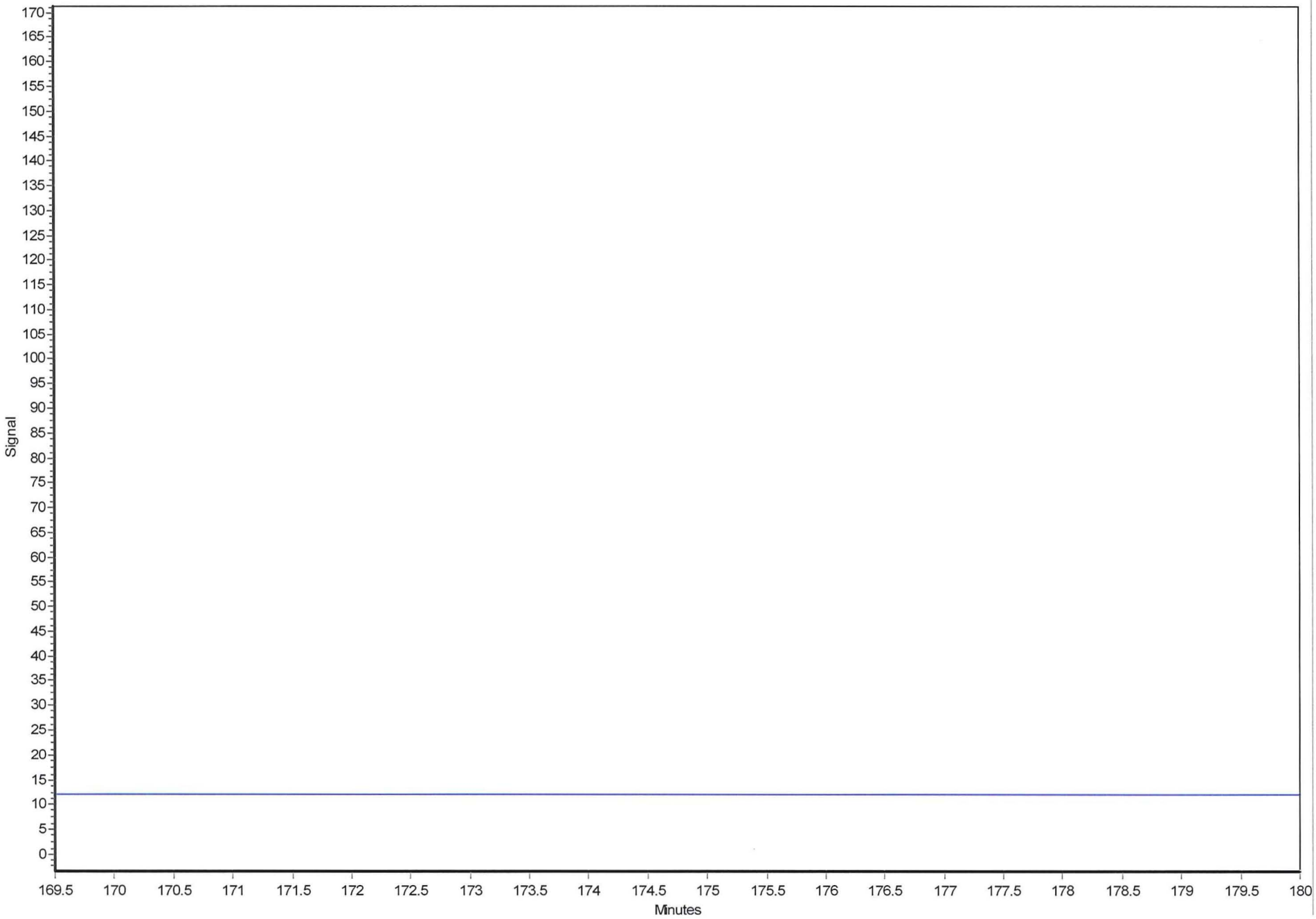
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 149.500 - End Time: 160.000



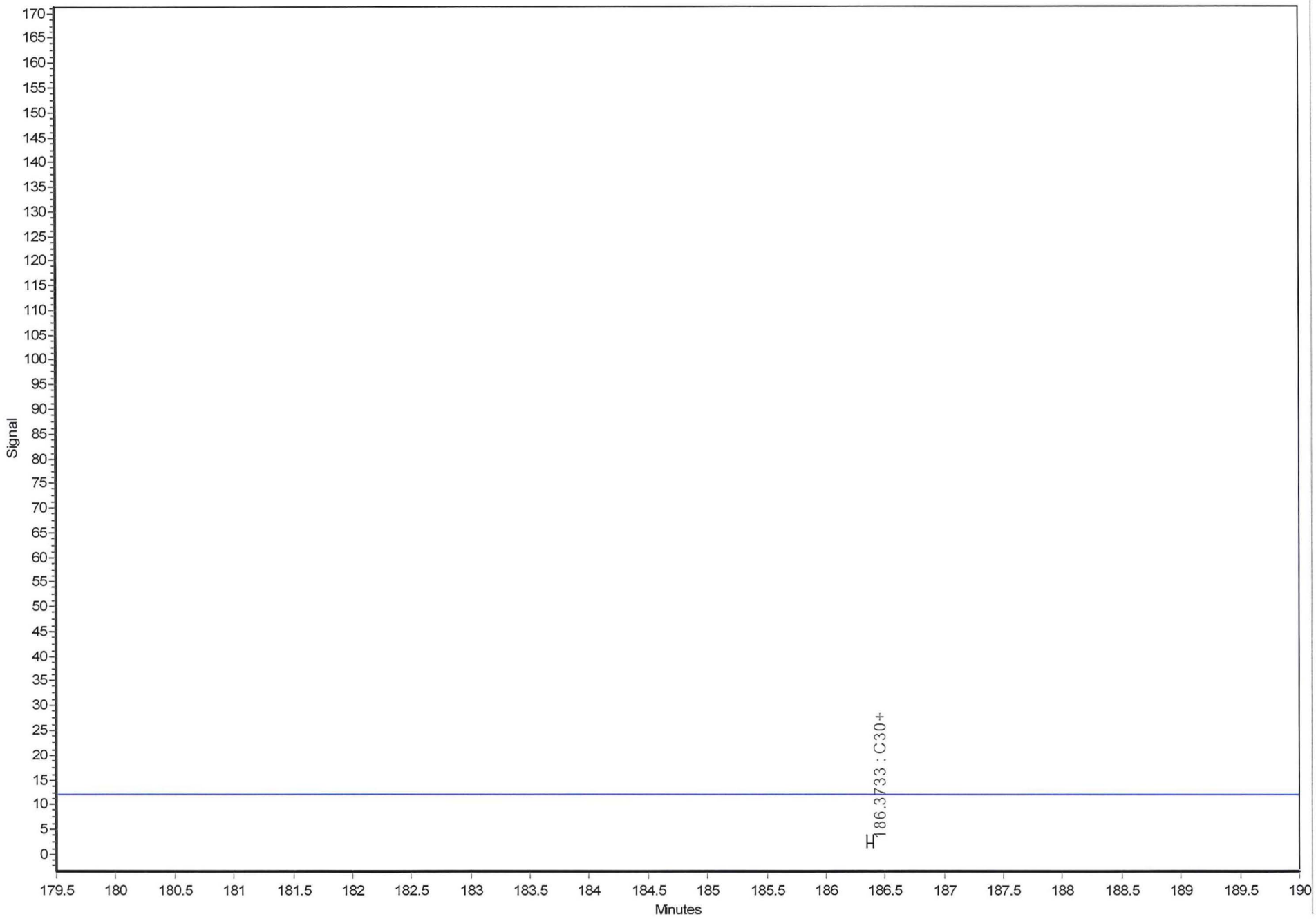
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 159.500 - End Time: 170.000



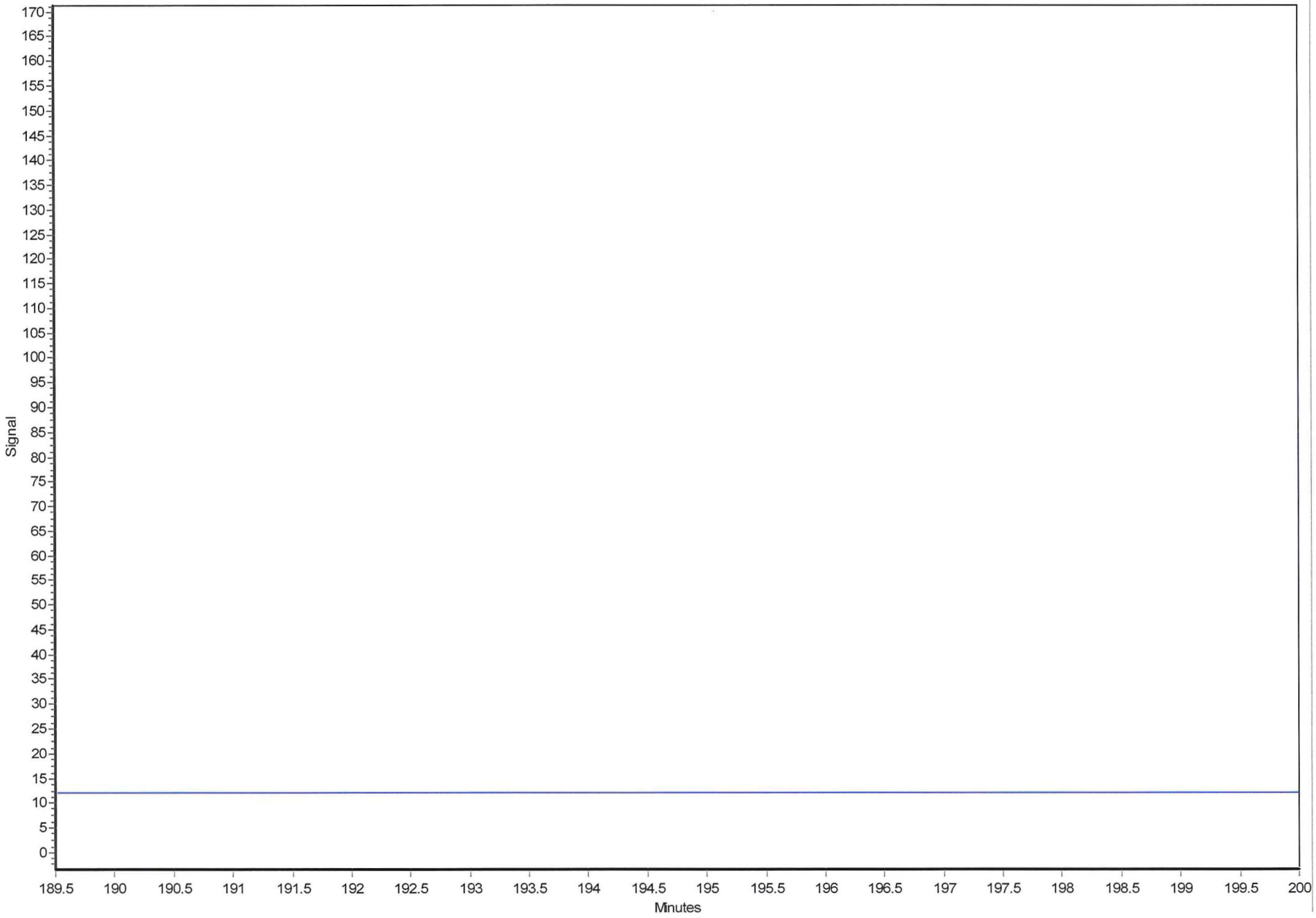
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 169.500 - End Time: 180.000



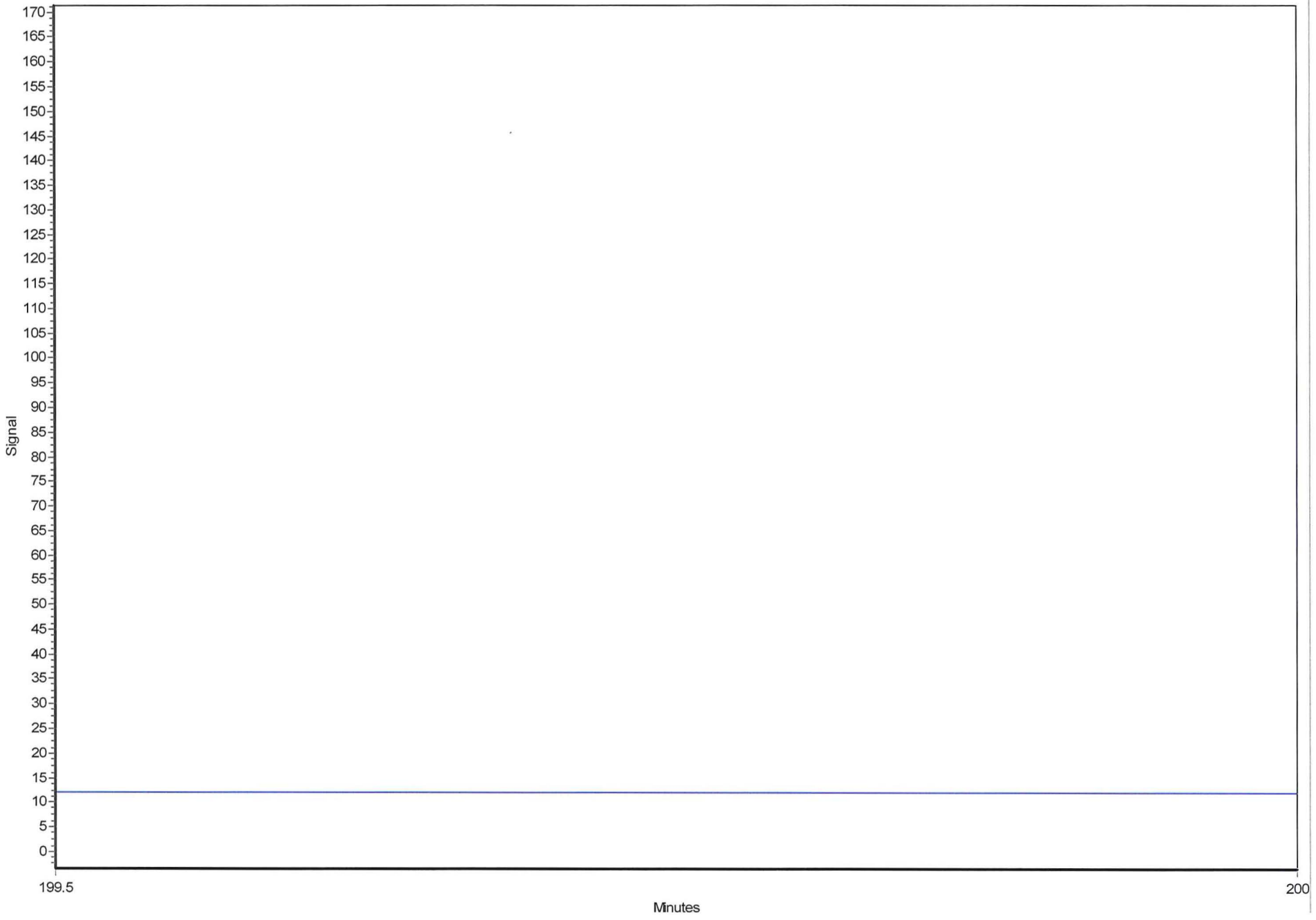
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 179.500 - End Time: 190.000

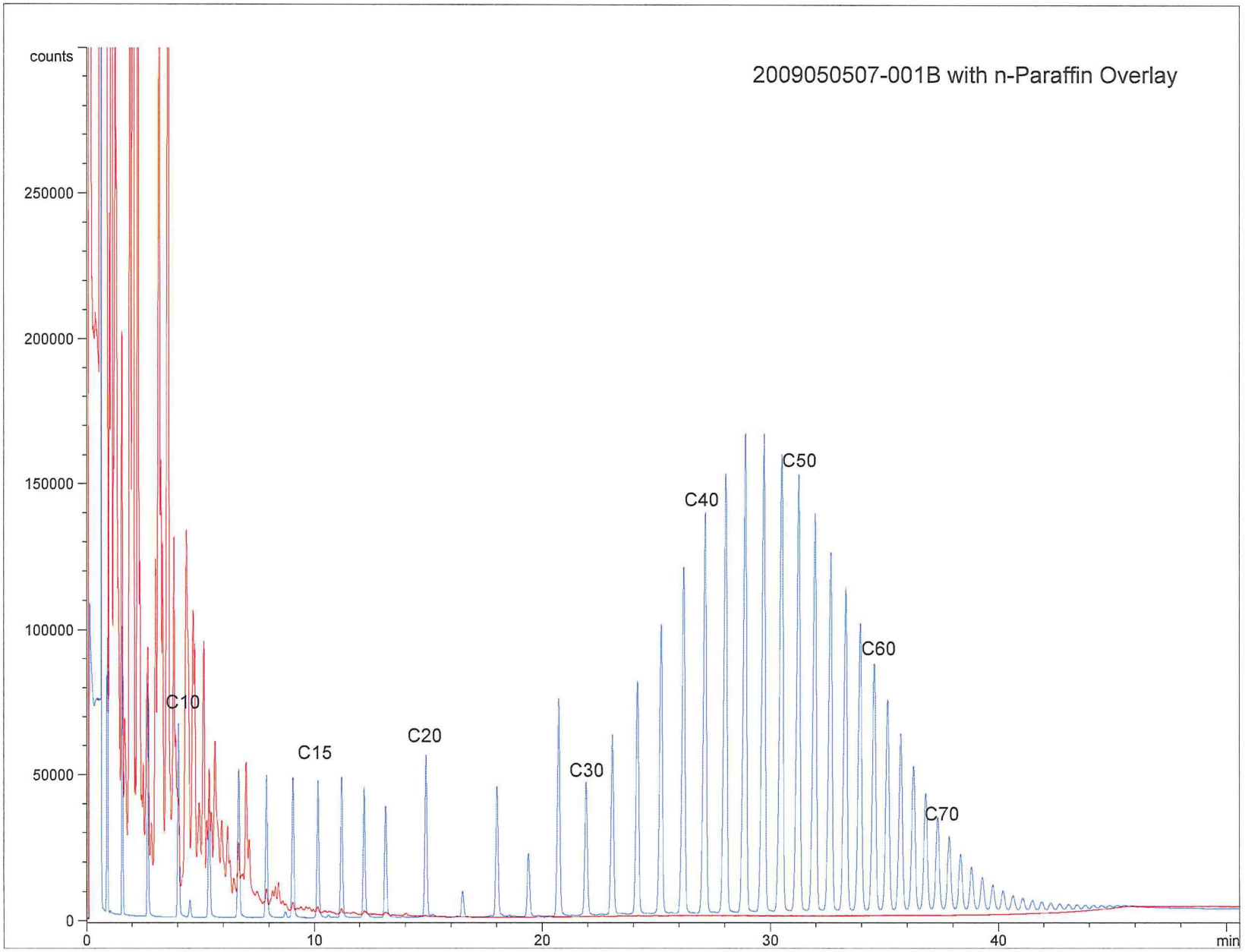


2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 189.500 - End Time: 200.000



2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 199.500 - End Time: 200.000

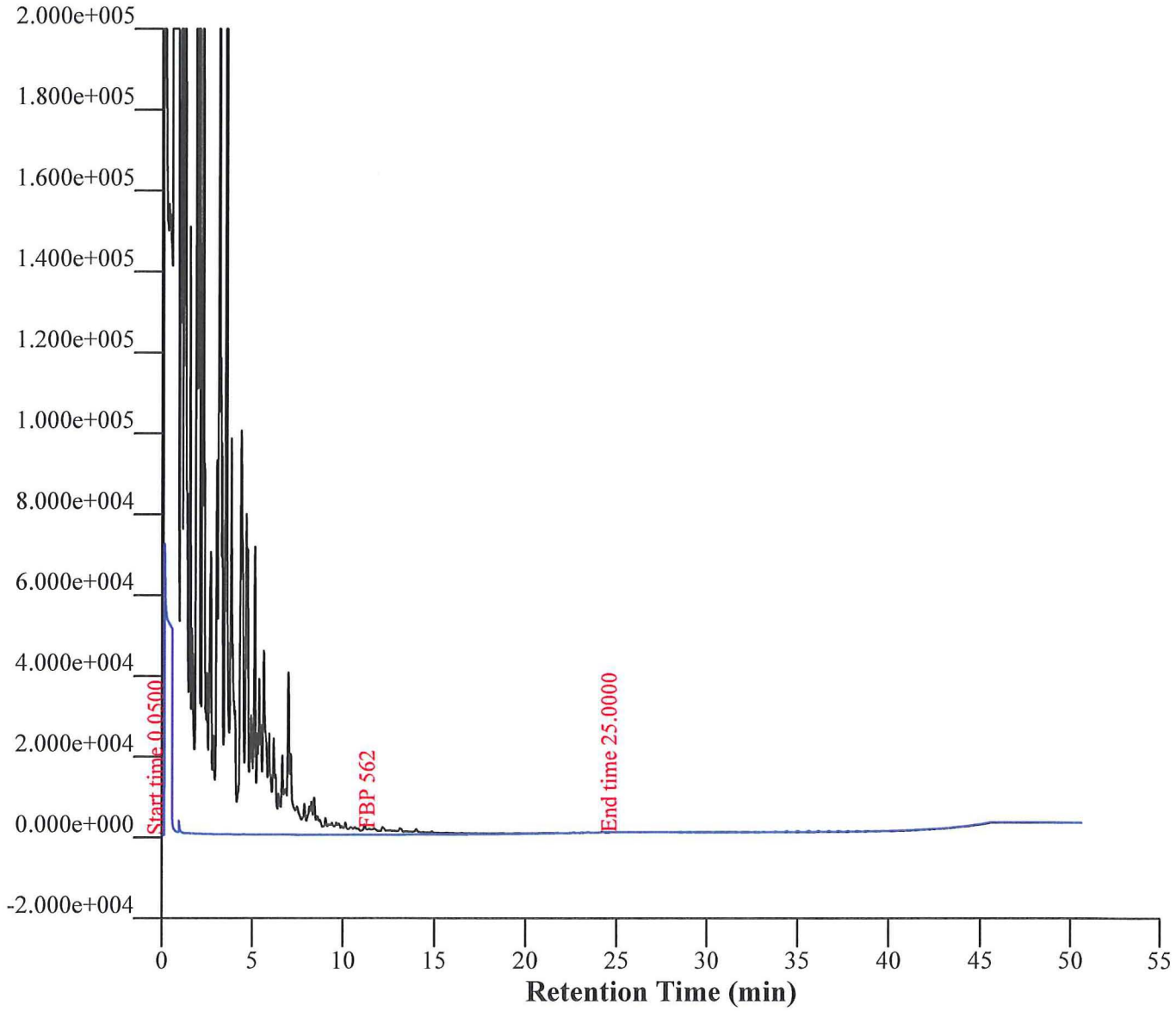



2009050507-001B with n-Paraffin Overlay
counts
250000
200000
150000
100000
50000
0
0
10
20
30
40
min
C10
C15
C20
C30
C40
C50
C60
C70

HTSD1 ASTM High temperature 1

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Sample type	: Carbon Number	Sample (g)	: 0.0739
Method name	: ht750c	Solvent (g)	: 4.8903
Operator	: BLH	ISTD (g)	: 0.0000
Sequence name	: 0601A.S		

Data File : 0601A\006F1001.D



HTSD1 ASTM High temperature 2

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Data File	: 0601A\006F1001.D		

General Variables

Used Blank	0601A\005F0901.D
Used BP calibrant	0601A\090F0101.D
Used Reference	0601A\095F0401.D
Solvent start	0.113
Solvent end	0.560
Quenching factor	2.4
Used Start elution (min)	0.050
Used End elution (min)	25.000 set
Total area	254075103
Found Recovery	101.6
Used Recovery	100.0
Response factor	5.9541e-011

BP Distribution table - Percent

Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F
7.2	96.8	31.0	154.0	55.0	224.8	79.0	318.6
8.0	98.0	32.0	157.2	56.0	230.2	80.0	319.6
9.0	99.2	33.0	162.4	57.0	234.0	81.0	321.4
10.0	100.4	34.0	165.0	58.0	237.2	82.0	324.6
11.0	101.8	35.0	167.0	59.0	240.6	83.0	329.2
12.0	103.8	36.0	169.6	60.0	248.0	84.0	330.4
13.0	106.8	37.0	172.4	61.0	257.2	85.0	331.4
14.0	110.2	38.0	174.4	62.0	263.8	86.0	333.2
15.0	114.4	39.0	177.0	63.0	271.2	87.0	339.0
16.0	118.2	40.0	179.0	64.0	272.4	88.0	345.0
17.0	122.4	41.0	180.2	65.0	273.6	89.0	354.6
18.0	126.6	42.0	183.0	66.0	276.0	90.0	357.4
19.0	130.4	43.0	186.8	67.0	277.2	91.0	363.4
20.0	134.6	44.0	191.6	68.0	278.0	92.0	367.4
21.0	138.8	45.0	195.4	69.0	278.4	93.0	377.2
22.0	143.0	46.0	200.2	70.0	279.2	94.0	385.0
23.0	145.0	47.0	205.4	71.0	283.2	95.0	393.4
24.0	145.0	48.0	212.4	72.0	285.8	96.0	406.4
25.0	145.4	49.0	217.4	73.0	287.0	97.0	426.0
26.0	146.4	50.0	220.0	74.0	289.8	98.0	442.6
27.0	147.2	51.0	221.0	75.0	299.8	99.0	497.4
28.0	148.8	52.0	222.0	76.0	305.8	FBP	562.2
29.0	149.4	53.0	222.6	77.0	314.4		
30.0	151.4	54.0	223.6	78.0	317.4		

HTSD1 ASTM High temperature 3

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Data File	: 0601A\006F1001.D		

BP Distribution table - cut points

BP °F	Recovered mass%	Fraction mass%	BP °F	Recovered mass%	Fraction mass%	BP °F	Recovered mass%	Fraction mass%
97.0	7.24	7.24	549.0	99.42	0.19	791.0	99.98	0.01
156.0	31.87	24.62	576.0	99.57	0.15	808.0	99.99	0.01
209.0	47.60	15.73	601.0	99.69	0.12	824.0	99.99	0.00
259.0	61.37	13.77	625.0	99.77	0.08	840.0	100.00	0.00
303.0	75.51	14.14	651.0	99.85	0.07	856.0	100.00	0.00
345.0	88.01	12.50	675.0	99.89	0.05	871.0	100.00	0.00
385.0	94.00	5.99	696.0	99.92	0.03	885.0	100.00	0.00
421.0	96.76	2.76	716.0	99.94	0.02	898.0	100.00	0.00
455.0	98.28	1.52	736.0	99.95	0.01	912.0	100.00	0.00
489.0	98.91	0.63	755.0	99.96	0.01			
520.0	99.23	0.32	774.0	99.97	0.01			

zia engineering & environmental consultants, llc
755 S. Telshor Blvd. Ste. F-201
Las Cruces, NM 88011
575-532-1526 u
575-532-1587 f

CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVW Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	ANALYSIS REQUESTED: LNAPL										REMARKS
5-11-09	1248	HTSA-0197-HVW-008-0509	Product		1	X										5 DAY TURN-AROUND

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME)	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/ DATE)	(TIME/ DATE)	(TIME/ DATE)
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 6, 2009

Work Order: 9093009

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211134	HTSA-0197-HVW-002-0909	water	2009-09-29	10:40	2009-09-30
211135	HTSA-0197-TB-09-090	water	2009-09-29	10:40	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 18 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093009. Samples for work order 9093009 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093009 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211134 - HTSA-0197-HVW-002-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**53.4**	**53.4**	<7.60	mg/L	50	7.60	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.93	mg/L	50	5.00	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		4.90	mg/L	50	5.00	98	80 - 109

Sample: 211134 - HTSA-0197-HVW-002-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**1180**	**1180**	<20.0	μg/L	50	20.0	1	0.4
Benzene		**8510**	**8510**	<12.0	μg/L	50	12.0	1	0.24
Toluene	[1]	**19000**	**19000**	<13.5	μg/L	50	13.5	1	0.27
Ethylbenzene		**69.5**	**69.5**	<13.0	μg/L	50	13.0	1	0.26
m,p-Xylene		**5180**	**5180**	<27.0	μg/L	50	27.0	1	0.54
o-Xylene		**2740**	**2740**	<13.0	μg/L	50	13.0	1	0.26
n-Propylbenzene		**133**	**133**	<15.5	μg/L	50	15.5	1	0.31
1,3,5-Trimethylbenzene		**299**	**299**	<13.5	μg/L	50	13.5	1	0.27
1,2,4-Trimethylbenzene		**1310**	**1310**	<14.5	μg/L	50	14.5	1	0.29
Naphthalene		**425**	**425**	<14.0	μg/L	50	14.0	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		2530	μg/L	50	2500	101	92.3 - 115
Toluene-d8		2540	μg/L	50	2500	102	89.8 - 109
4-Bromofluorobenzene (4-BFB)		2540	μg/L	50	2500	102	89.5 - 112

Sample: 211135 - HTSA-0197-TB-09-090

[1] Estimated concentration value greater than standard range.

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.6	μg/L	1	50.0	101	92.3 - 115
Toluene-d8		49.9	μg/L	1	50.0	100	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.5	μg/L	1	50.0	99	89.5 - 112

Method Blank (1)

QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	QC Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	QC Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
Chloromethane (methyl chloride)		<0.590	μg/L	0.59
Vinyl Chloride		<0.690	μg/L	0.69
Bromomethane (methyl bromide)		<0.750	μg/L	0.75
Chloroethane		<0.570	μg/L	0.57
Trichlorofluoromethane		<0.470	μg/L	0.47
Acetone		2.20	μg/L	1.75
Iodomethane (methyl iodide)		<0.320	μg/L	0.32
Carbon Disulfide		<0.250	μg/L	0.25
Acrylonitrile		<0.320	μg/L	0.32
2-Butanone (MEK)		<0.810	μg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	μg/L	0.79
2-Hexanone		<0.510	μg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	μg/L	0.49
1,1-Dichloroethene		<0.400	μg/L	0.4
Methylene chloride		<0.450	μg/L	0.45
MTBE		<0.400	μg/L	0.4
trans-1,2-Dichloroethene		<0.330	μg/L	0.33
1,1-Dichloroethane		<0.290	μg/L	0.29
cis-1,2-Dichloroethene		<0.200	μg/L	0.2
2,2-Dichloropropane		<0.420	μg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	μg/L	0.35
Chloroform		<0.270	μg/L	0.27
1,1,1-Trichloroethane		<0.230	μg/L	0.23
1,1-Dichloropropene		<0.340	μg/L	0.34
Benzene		<0.240	μg/L	0.24
Carbon Tetrachloride		<0.300	μg/L	0.3
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42

continued . . .

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121

continued . . .

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[2]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121
cis-1,2-Dichloroethene		49.5	µg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane		54.2	µg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)		48.7	µg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform		48.6	µg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane		49.8	µg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene		50.1	µg/L	1	50.0	<0.340	100	83.8 - 119
Benzene		50.4	µg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride		51.9	µg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane		50.2	µg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)		49.5	µg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)		48.6	µg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane		49.6	µg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether		37.5	µg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene		50.4	µg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene		48.8	µg/L	1	50.0	<0.380	98	82.1 - 131
Toluene		49.8	µg/L	1	50.0	<0.270	100	81.4 - 118

continued ...

[2]Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120
Naphthalene	41.4	μg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	μg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	μg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	μg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	μg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	μg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	μg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	μg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	μg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [3]	99.6	μg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	μg/L	1	50.0	<0.320	108	65.3 - 130	8	20

continued ...

[3] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Carbon Disulfide	52.6	µg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	µg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	µg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	µg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	µg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	µg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	µg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	µg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	µg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	µg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	µg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	µg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	µg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	µg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	µg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	µg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	µg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	µg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	µg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	µg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	µg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	µg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	µg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	µg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	µg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	µg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	µg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	µg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	µg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	µg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	µg/L	1	50.0	<0.340	101	77.1 - 124	6	20
Tetrachloroethene (PCE)	38.2	µg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	µg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	µg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	µg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	µg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	µg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	µg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	µg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	µg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	µg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	µg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	µg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	µg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	µg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	µg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	µg/L	1	50.0	<0.300	106	76.5 - 124	6	20

continued ...

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[4]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[5]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[6]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123
Trichloroethene (TCE)		50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)		53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane		52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene		46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene		45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene		52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane		52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane		54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane		53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)		55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)		35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene		52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane		52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene		50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene		102	µg/L	1	100	<0.540	102	79.8 - 127

continued ...

[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromoform		54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene		40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene		51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane		58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene		50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane		59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene		53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene		55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene		49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene		51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene		52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene		50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)		50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene		51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)		51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene		50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene		51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)		52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene		48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane		63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene	[7]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene		53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene	[8]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene		49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[9]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[10]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20

continued . . .

[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.
[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued ...

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
2-Hexanone	[11]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[12]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20
1,1,1,2-Tetrachloroethane		54.3	µg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene		52.4	µg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene		105	µg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform		57.0	µg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene		36.4	µg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene		52.9	µg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane		60.2	µg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene		51.7	µg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane		64.0	µg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene		54.7	µg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene		55.5	µg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene		51.9	µg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene		53.4	µg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene		53.9	µg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene		52.2	µg/L	1	50.0	<0.290	104	73.4 - 124	3	20

continued ...

[11] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,4-Dichlorobenzene (para)		52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene		53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)		52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene		52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene		53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)		53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene		50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane		66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene	[13]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene		57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene	[14]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene		53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[14] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[15]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[16]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[17]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[18]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[19]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[20]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01

continued ...

[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased low. •
[17] Analyte recovery outside CCV limits. Concentration biased high. •
[18] Analyte recovery outside CCV limits. Concentration biased low. •
[19] Analyte recovery outside CCV limits. Concentration biased high. •
[20] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01
Hexachlorobutadiene	[21]	µg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		µg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		µg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	52.8	106	80 - 120	2009-10-01

continued ...

[21] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

zia engineering & environmental consultants, llc

9093009

1550 S. Telshor Blvd Ste. F 201
Las Cruces, NM 88011
505-522-1526 u
505-522-1597 f

161

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.: 10

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO									REMARKS
9-29-09	1040	HTSA-0197-HV00-002-0909	Water	211134	6	X	X									
9-29-09	1040	HTSA-0197-TB-09-090	WATER	135	2	X										

ANALYSES REQUESTED

PROJECT INFORMATION

PROJECT MANAGER: Brad Davis

SHIPPING ID NO.: Fed 79797307 2490

VIA: Lab Courier

SAMPLES RECEIVED: intact

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS:

GOOD CONDITION/CHILLED: IR 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY: (SIGNATURE)
(PRINTED NAME) GABRIEL GARCIA
RECEIVED BY: (SIGNATURE)
(TIME/DATE)

2. RELINQUISHED BY: (SIGNATURE)
(PRINTED NAME)
RECEIVED BY: (SIGNATURE)
(TIME/DATE)

3. RECEIVED BY LAB: (SIGNATURE) Carol Fox
(PRINTED NAME) Carol Fox
(COMPANY) Trace
(TIME/DATE) 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 6, 2009

Work Order: 9093018

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211157	HTSA-0197-HVW-003-0909	water	2009-09-23	13:06	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093018. Samples for work order 9093018 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54774	2009-10-02 at 12:00	64142	2009-10-02 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093018 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211157 - HTSA-0197-HVW-003-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**118**	**118**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.0	mg/L	100	10.0	100	70.8 - 112
4-Bromofluorobenzene (4-BFB)		10.4	mg/L	100	10.0	104	80 - 109

Sample: 211157 - HTSA-0197-HVW-003-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64142	Date Analyzed:	2009-10-02	Analyzed By:	JG
Prep Batch:	54774	Sample Preparation:	2009-10-02	Prepared By:	JG

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**1040**	**1040**	<24.4	μg/L	200	24.4	1	0.122
Benzene		**9920**	**9920**	<22.6	μg/L	200	22.6	1	0.113
Toluene		**16700**	**16700**	<23.4	μg/L	200	23.4	1	0.117
Ethylbenzene		**4460**	**4460**	<34.8	μg/L	200	34.8	1	0.174
m,p-Xylene		**11800**	**11800**	<44.0	μg/L	200	44.0	1	0.22
o-Xylene		**5580**	**5580**	<23.0	μg/L	200	23.0	1	0.115
n-Propylbenzene		**452**	**452**	<27.2	μg/L	200	27.2	1	0.136
1,3,5-Trimethylbenzene		**646**	**646**	<24.8	μg/L	200	24.8	1	0.124
1,2,4-Trimethylbenzene	[1]	**2960**	**2960**	<22.8	μg/L	200	22.8	1	0.114
Naphthalene	[2] *J*	**473**	<1000	<134	μg/L	200	134	5	0.672

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		10300	μg/L	200	10000	103	70 - 130
Toluene-d8		9750	μg/L	200	10000	98	70 - 130
4-Bromofluorobenzene (4-BFB)		9760	μg/L	200	10000	98	70 - 130

[1] Concentration biased low.
[2] Concentration biased low.

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.169	µg/L	0.169
Dichlorodifluoromethane		<0.145	µg/L	0.145
Chloromethane (methyl chloride)		<0.164	µg/L	0.164
Vinyl Chloride		<0.110	µg/L	0.11
Bromomethane (methyl bromide)		<0.540	µg/L	0.54
Chloroethane		<0.232	µg/L	0.232
Trichlorofluoromethane		<0.149	µg/L	0.149
Acetone		<0.893	µg/L	0.893
Iodomethane (methyl iodide)		<0.104	µg/L	0.104
Carbon Disulfide		<0.120	µg/L	0.12
Acrylonitrile		<0.189	µg/L	0.189
2-Butanone (MEK)		2.44	µg/L	0.218
4-Methyl-2-pentanone (MIBK)		<0.554	µg/L	0.554
2-Hexanone		<0.863	µg/L	0.863
trans 1,4-Dichloro-2-butene		<0.607	µg/L	0.607
1,1-Dichloroethene		<0.102	µg/L	0.102
Methylene chloride		<0.270	µg/L	0.27
MTBE		<0.122	µg/L	0.122
trans-1,2-Dichloroethene		<0.168	µg/L	0.168
1,1-Dichloroethane		<0.107	µg/L	0.107
cis-1,2-Dichloroethene		<0.151	µg/L	0.151
2,2-Dichloropropane		<0.167	µg/L	0.167
1,2-Dichloroethane (EDC)		<0.0890	µg/L	0.089
Chloroform		<0.121	µg/L	0.121
1,1,1-Trichloroethane		<0.170	µg/L	0.17
1,1-Dichloropropene		<0.156	µg/L	0.156
Benzene		<0.113	µg/L	0.113
Carbon Tetrachloride		<0.0930	µg/L	0.093

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.129	μg/L	0.129
Trichloroethene (TCE)		<0.160	μg/L	0.16
Dibromomethane (methylene bromide)		<0.137	μg/L	0.137
Bromodichloromethane		<0.107	μg/L	0.107
2-Chloroethyl vinyl ether		<0.257	μg/L	0.257
cis-1,3-Dichloropropene		<0.109	μg/L	0.109
trans-1,3-Dichloropropene		<0.181	μg/L	0.181
Toluene		<0.117	μg/L	0.117
1,1,2-Trichloroethane		<0.143	μg/L	0.143
1,3-Dichloropropane		<0.191	μg/L	0.191
Dibromochloromethane		<0.118	μg/L	0.118
1,2-Dibromoethane (EDB)		<0.131	μg/L	0.131
Tetrachloroethene (PCE)		<0.353	μg/L	0.353
Chlorobenzene		<0.135	μg/L	0.135
1,1,1,2-Tetrachloroethane		<0.263	μg/L	0.263
Ethylbenzene		<0.174	μg/L	0.174
m,p-Xylene		<0.220	μg/L	0.22
Bromoform		<0.385	μg/L	0.385
Styrene		<0.413	μg/L	0.413
o-Xylene		<0.115	μg/L	0.115
1,1,2,2-Tetrachloroethane		<0.766	μg/L	0.766
2-Chlorotoluene		<0.132	μg/L	0.132
1,2,3-Trichloropropane		<0.599	μg/L	0.599
Isopropylbenzene		<0.145	μg/L	0.145
Bromobenzene		<0.266	μg/L	0.266
n-Propylbenzene		<0.136	μg/L	0.136
1,3,5-Trimethylbenzene		<0.124	μg/L	0.124
tert-Butylbenzene		<0.136	μg/L	0.136
1,2,4-Trimethylbenzene		<0.114	μg/L	0.114
1,4-Dichlorobenzene (para)		<0.230	μg/L	0.23
sec-Butylbenzene		<0.452	μg/L	0.452
1,3-Dichlorobenzene (meta)		<0.214	μg/L	0.214
p-Isopropyltoluene		<0.126	μg/L	0.126
4-Chlorotoluene		<0.161	μg/L	0.161
1,2-Dichlorobenzene (ortho)		<0.357	μg/L	0.357
n-Butylbenzene		<0.125	μg/L	0.125
1,2-Dibromo-3-chloropropane		<0.977	μg/L	0.977
1,2,3-Trichlorobenzene		<0.400	μg/L	0.4
1,2,4-Trichlorobenzene		<0.227	μg/L	0.227
Naphthalene		<0.672	μg/L	0.672
Hexachlorobutadiene		<0.198	μg/L	0.198

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	μg/L	1	50.0	100	70 - 130
Toluene-d8		48.4	μg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		50.2	μg/L	1	50.0	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		49.7	µg/L	1	50.0	<0.169	99	70 - 130
Dichlorodifluoromethane		53.9	µg/L	1	50.0	<0.145	108	70 - 130
Chloromethane (methyl chloride)		56.9	µg/L	1	50.0	<0.164	114	70 - 130
Vinyl Chloride		51.3	µg/L	1	50.0	<0.110	103	70 - 130
Bromomethane (methyl bromide)		65.2	µg/L	1	50.0	<0.540	130	70 - 130
Chloroethane		64.4	µg/L	1	50.0	<0.232	129	70 - 130
Trichlorofluoromethane		52.2	µg/L	1	50.0	<0.149	104	70 - 130
Acetone	[3]	186	µg/L	1	50.0	<0.893	372	70 - 130
Iodomethane (methyl iodide)		54.2	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		52.7	µg/L	1	50.0	<0.120	105	70 - 130
Acrylonitrile		48.5	µg/L	1	50.0	<0.189	97	70 - 130
2-Butanone (MEK)		42.5	µg/L	1	50.0	2.44	85	70 - 130
4-Methyl-2-pentanone (MIBK)		50.4	µg/L	1	50.0	<0.554	101	70 - 130
2-Hexanone		45.0	µg/L	1	50.0	<0.863	90	70 - 130
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.607	89	70 - 130
1,1-Dichloroethene		51.4	µg/L	1	50.0	<0.102	103	70 - 130
Methylene chloride		48.9	µg/L	1	50.0	<0.270	98	70 - 130
MTBE		51.2	µg/L	1	50.0	<0.122	102	70 - 130
trans-1,2-Dichloroethene		50.6	µg/L	1	50.0	<0.168	101	70 - 130
1,1-Dichloroethane		53.3	µg/L	1	50.0	<0.107	107	70 - 130

continued ...

[3] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.2	μg/L	1	50.0	<0.151	98	70 - 130
2,2-Dichloropropane	49.6	μg/L	1	50.0	<0.167	99	70 - 130
1,2-Dichloroethane (EDC)	50.4	μg/L	1	50.0	<0.0890	101	70 - 130
Chloroform	49.3	μg/L	1	50.0	<0.121	99	70 - 130
1,1,1-Trichloroethane	53.1	μg/L	1	50.0	<0.170	106	70 - 130
1,1-Dichloropropene	51.7	μg/L	1	50.0	<0.156	103	70 - 130
Benzene	50.9	μg/L	1	50.0	<0.113	102	70 - 130
Carbon Tetrachloride	53.7	μg/L	1	50.0	<0.0930	107	70 - 130
1,2-Dichloropropane	50.0	μg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)	45.4	μg/L	1	50.0	<0.160	91	70 - 130
Dibromomethane (methylene bromide)	42.6	μg/L	1	50.0	<0.137	85	70 - 130
Bromodichloromethane	49.3	μg/L	1	50.0	<0.107	99	70 - 130
2-Chloroethyl vinyl ether	42.9	μg/L	1	50.0	<0.257	86	70 - 130
cis-1,3-Dichloropropene	51.0	μg/L	1	50.0	<0.109	102	70 - 130
trans-1,3-Dichloropropene	49.4	μg/L	1	50.0	<0.181	99	70 - 130
Toluene	47.5	μg/L	1	50.0	<0.117	95	70 - 130
1,1,2-Trichloroethane	48.1	μg/L	1	50.0	<0.143	96	70 - 130
1,3-Dichloropropane	48.2	μg/L	1	50.0	<0.191	96	70 - 130
Dibromochloromethane	48.7	μg/L	1	50.0	<0.118	97	70 - 130
1,2-Dibromoethane (EDB)	47.0	μg/L	1	50.0	<0.131	94	70 - 130
Tetrachloroethene (PCE)	39.6	μg/L	1	50.0	<0.353	79	70 - 130
Chlorobenzene	48.8	μg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane	45.4	μg/L	1	50.0	<0.263	91	70 - 130
Ethylbenzene	45.2	μg/L	1	50.0	<0.174	90	70 - 130
m,p-Xylene	93.6	μg/L	1	100	<0.220	94	70 - 130
Bromoform	46.3	μg/L	1	50.0	<0.385	93	70 - 130
Styrene	50.3	μg/L	1	50.0	<0.413	101	70 - 130
o-Xylene	46.5	μg/L	1	50.0	<0.115	93	70 - 130
1,1,2,2-Tetrachloroethane	43.7	μg/L	1	50.0	<0.766	87	70 - 130
2-Chlorotoluene	43.6	μg/L	1	50.0	<0.132	87	70 - 130
1,2,3-Trichloropropane	45.6	μg/L	1	50.0	<0.599	91	70 - 130
Isopropylbenzene	47.2	μg/L	1	50.0	<0.145	94	70 - 130
Bromobenzene	44.4	μg/L	1	50.0	<0.266	89	70 - 130
n-Propylbenzene	44.4	μg/L	1	50.0	<0.136	89	70 - 130
1,3,5-Trimethylbenzene	43.3	μg/L	1	50.0	<0.124	87	70 - 130
tert-Butylbenzene	44.9	μg/L	1	50.0	<0.136	90	70 - 130
1,2,4-Trimethylbenzene	39.8	μg/L	1	50.0	<0.114	80	70 - 130
1,4-Dichlorobenzene (para)	40.0	μg/L	1	50.0	<0.230	80	70 - 130
sec-Butylbenzene	44.3	μg/L	1	50.0	<0.452	89	70 - 130
1,3-Dichlorobenzene (meta)	42.2	μg/L	1	50.0	<0.214	84	70 - 130
p-Isopropyltoluene	44.2	μg/L	1	50.0	<0.126	88	70 - 130
4-Chlorotoluene	44.9	μg/L	1	50.0	<0.161	90	70 - 130
1,2-Dichlorobenzene (ortho)	44.0	μg/L	1	50.0	<0.357	88	70 - 130
n-Butylbenzene	43.8	μg/L	1	50.0	<0.125	88	70 - 130
1,2-Dibromo-3-chloropropane	40.1	μg/L	1	50.0	<0.977	80	70 - 130
1,2,3-Trichlorobenzene	38.2	μg/L	1	50.0	<0.400	76	70 - 130
1,2,4-Trichlorobenzene	41.5	μg/L	1	50.0	<0.227	83	70 - 130

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	39.3	μg/L	1	50.0	<0.672	79	70 - 130
Hexachlorobutadiene	38.6	μg/L	1	50.0	<0.198	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		49.2	μg/L	1	50.0	<0.169	98	70 - 130	1	20
Dichlorodifluoromethane		54.6	μg/L	1	50.0	<0.145	109	70 - 130	1	20
Chloromethane (methyl chloride)		58.1	μg/L	1	50.0	<0.164	116	70 - 130	2	20
Vinyl Chloride		51.8	μg/L	1	50.0	<0.110	104	70 - 130	1	20
Bromomethane (methyl bromide)		62.4	μg/L	1	50.0	<0.540	125	70 - 130	4	20
Chloroethane	[4]	65.9	μg/L	1	50.0	<0.232	132	70 - 130	2	20
Trichlorofluoromethane		53.0	μg/L	1	50.0	<0.149	106	70 - 130	2	20
Acetone	[5]	193	μg/L	1	50.0	<0.893	386	70 - 130	4	20
Iodomethane (methyl iodide)		53.7	μg/L	1	50.0	<0.104	107	70 - 130	1	20
Carbon Disulfide		52.3	μg/L	1	50.0	<0.120	105	70 - 130	1	20
Acrylonitrile		48.5	μg/L	1	50.0	<0.189	97	70 - 130	0	20
2-Butanone (MEK)		44.0	μg/L	1	50.0	2.44	88	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)		50.1	μg/L	1	50.0	<0.554	100	70 - 130	1	20
2-Hexanone		46.6	μg/L	1	50.0	<0.863	93	70 - 130	4	20
trans 1,4-Dichloro-2-butene		46.8	μg/L	1	50.0	<0.607	94	70 - 130	5	20
1,1-Dichloroethene		51.5	μg/L	1	50.0	<0.102	103	70 - 130	0	20
Methylene chloride		48.2	μg/L	1	50.0	<0.270	96	70 - 130	1	20
MTBE		50.8	μg/L	1	50.0	<0.122	102	70 - 130	1	20
trans-1,2-Dichloroethene		50.1	μg/L	1	50.0	<0.168	100	70 - 130	1	20
1,1-Dichloroethane		52.7	μg/L	1	50.0	<0.107	105	70 - 130	1	20
cis-1,2-Dichloroethene		49.1	μg/L	1	50.0	<0.151	98	70 - 130	0	20
2,2-Dichloropropane		49.4	μg/L	1	50.0	<0.167	99	70 - 130	0	20
1,2-Dichloroethane (EDC)		50.6	μg/L	1	50.0	<0.0890	101	70 - 130	0	20
Chloroform		48.7	μg/L	1	50.0	<0.121	97	70 - 130	1	20
1,1,1-Trichloroethane		53.4	μg/L	1	50.0	<0.170	107	70 - 130	1	20
1,1-Dichloropropene		51.7	μg/L	1	50.0	<0.156	103	70 - 130	0	20
Benzene		51.5	μg/L	1	50.0	<0.113	103	70 - 130	1	20
Carbon Tetrachloride		54.2	μg/L	1	50.0	<0.0930	108	70 - 130	1	20
1,2-Dichloropropane		51.1	μg/L	1	50.0	<0.129	102	70 - 130	2	20
Trichloroethene (TCE)		46.1	μg/L	1	50.0	<0.160	92	70 - 130	2	20
Dibromomethane (methylene bromide)		42.5	μg/L	1	50.0	<0.137	85	70 - 130	0	20
Bromodichloromethane		50.1	μg/L	1	50.0	<0.107	100	70 - 130	2	20
2-Chloroethyl vinyl ether		43.6	μg/L	1	50.0	<0.257	87	70 - 130	2	20
cis-1,3-Dichloropropene		51.5	μg/L	1	50.0	<0.109	103	70 - 130	1	20
trans-1,3-Dichloropropene		49.2	μg/L	1	50.0	<0.181	98	70 - 130	0	20
Toluene		48.0	μg/L	1	50.0	<0.117	96	70 - 130	1	20
1,1,2-Trichloroethane		47.5	μg/L	1	50.0	<0.143	95	70 - 130	1	20
1,3-Dichloropropane		49.0	μg/L	1	50.0	<0.191	98	70 - 130	2	20
Dibromochloromethane		49.3	μg/L	1	50.0	<0.118	99	70 - 130	1	20

continued ...

[4] Analyte recovery outside control limits. Concentration biased high. •
[5] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2-Dibromoethane (EDB)	48.0	μg/L	1	50.0	<0.131	96	70 - 130	2	20
Tetrachloroethene (PCE)	46.5	μg/L	1	50.0	<0.353	93	70 - 130	16	20
Chlorobenzene	50.1	μg/L	1	50.0	<0.135	100	70 - 130	3	20
1,1,1,2-Tetrachloroethane	46.5	μg/L	1	50.0	<0.263	93	70 - 130	2	20
Ethylbenzene	45.4	μg/L	1	50.0	<0.174	91	70 - 130	0	20
m,p-Xylene	96.6	μg/L	1	100	<0.220	97	70 - 130	3	20
Bromoform	46.1	μg/L	1	50.0	<0.385	92	70 - 130	0	20
Styrene	50.6	μg/L	1	50.0	<0.413	101	70 - 130	1	20
o-Xylene	46.6	μg/L	1	50.0	<0.115	93	70 - 130	0	20
1,1,2,2-Tetrachloroethane	44.1	μg/L	1	50.0	<0.766	88	70 - 130	1	20
2-Chlorotoluene	43.9	μg/L	1	50.0	<0.132	88	70 - 130	1	20
1,2,3-Trichloropropane	45.8	μg/L	1	50.0	<0.599	92	70 - 130	0	20
Isopropylbenzene	48.9	μg/L	1	50.0	<0.145	98	70 - 130	4	20
Bromobenzene	45.4	μg/L	1	50.0	<0.266	91	70 - 130	2	20
n-Propylbenzene	45.1	μg/L	1	50.0	<0.136	90	70 - 130	2	20
1,3,5-Trimethylbenzene	44.2	μg/L	1	50.0	<0.124	88	70 - 130	2	20
tert-Butylbenzene	45.8	μg/L	1	50.0	<0.136	92	70 - 130	2	20
1,2,4-Trimethylbenzene	42.8	μg/L	1	50.0	<0.114	86	70 - 130	7	20
1,4-Dichlorobenzene (para)	39.9	μg/L	1	50.0	<0.230	80	70 - 130	0	20
sec-Butylbenzene	44.6	μg/L	1	50.0	<0.452	89	70 - 130	1	20
1,3-Dichlorobenzene (meta)	42.7	μg/L	1	50.0	<0.214	85	70 - 130	1	20
p-Isopropyltoluene	44.0	μg/L	1	50.0	<0.126	88	70 - 130	0	20
4-Chlorotoluene	45.8	μg/L	1	50.0	<0.161	92	70 - 130	2	20
1,2-Dichlorobenzene (ortho)	43.8	μg/L	1	50.0	<0.357	88	70 - 130	0	20
n-Butylbenzene	45.0	μg/L	1	50.0	<0.125	90	70 - 130	3	20
1,2-Dibromo-3-chloropropane	39.9	μg/L	1	50.0	<0.977	80	70 - 130	0	20
1,2,3-Trichlorobenzene	38.5	μg/L	1	50.0	<0.400	77	70 - 130	1	20
1,2,4-Trichlorobenzene	42.1	μg/L	1	50.0	<0.227	84	70 - 130	1	20
Naphthalene	39.2	μg/L	1	50.0	<0.672	78	70 - 130	0	20
Hexachlorobutadiene	39.1	μg/L	1	50.0	<0.198	78	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.3	50.3	μg/L	1	50.0	103	101	70 - 130
Toluene-d8	48.6	49.2	μg/L	1	50.0	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	49.8	50.3	μg/L	1	50.0	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211362

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		48.5	µg/L	1	50.0	<0.169	97	70 - 130
Dichlorodifluoromethane		45.4	µg/L	1	50.0	<0.145	91	70 - 130
Chloromethane (methyl chloride)		55.4	µg/L	1	50.0	<0.164	111	70 - 130
Vinyl Chloride		50.1	µg/L	1	50.0	<0.110	100	70 - 130
Bromomethane (methyl bromide)	[6]	112	µg/L	1	50.0	<0.540	224	70 - 130
Chloroethane	[7]	66.2	µg/L	1	50.0	<0.232	132	70 - 130
Trichlorofluoromethane		49.4	µg/L	1	50.0	<0.149	99	70 - 130
Acetone	[8]	28.7	µg/L	1	50.0	1.06	55	70 - 130
Iodomethane (methyl iodide)		53.9	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		50.8	µg/L	1	50.0	<0.120	102	70 - 130
Acrylonitrile		46.4	µg/L	1	50.0	<0.189	93	70 - 130
2-Butanone (MEK)		34.9	µg/L	1	50.0	<0.218	70	70 - 130
4-Methyl-2-pentanone (MIBK)		48.1	µg/L	1	50.0	<0.554	96	70 - 130
2-Hexanone		42.3	µg/L	1	50.0	<0.863	85	70 - 130
trans 1,4-Dichloro-2-butene		41.0	µg/L	1	50.0	<0.607	82	70 - 130
1,1-Dichloroethene		50.2	µg/L	1	50.0	<0.102	100	70 - 130
Methylene chloride		47.3	µg/L	1	50.0	<0.270	95	70 - 130
MTBE		50.6	µg/L	1	50.0	<0.122	101	70 - 130
trans-1,2-Dichloroethene		49.4	µg/L	1	50.0	<0.168	99	70 - 130
1,1-Dichloroethane		52.4	µg/L	1	50.0	<0.107	105	70 - 130
cis-1,2-Dichloroethene		47.8	µg/L	1	50.0	<0.151	96	70 - 130
2,2-Dichloropropane		40.6	µg/L	1	50.0	<0.167	81	70 - 130
1,2-Dichloroethane (EDC)		49.8	µg/L	1	50.0	<0.0890	100	70 - 130
Chloroform		47.8	µg/L	1	50.0	<0.121	96	70 - 130
1,1,1-Trichloroethane		52.0	µg/L	1	50.0	<0.170	104	70 - 130
1,1-Dichloropropene		48.5	µg/L	1	50.0	<0.156	97	70 - 130
Benzene		50.6	µg/L	1	50.0	<0.113	101	70 - 130

continued ...

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Analyte recovery outside control limits. Concentration biased high.
[8] Analyte recovery outside control limits. Results considered estimated values.

matrix spikes continued . . .

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Carbon Tetrachloride		51.5	µg/L	1	50.0	<0.0930	103	70 - 130
1,2-Dichloropropane		50.2	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)		41.8	µg/L	1	50.0	<0.160	84	70 - 130
Dibromomethane (methylene bromide)		40.7	µg/L	1	50.0	<0.137	81	70 - 130
Bromodichloromethane		48.5	µg/L	1	50.0	<0.107	97	70 - 130
2-Chloroethyl vinyl ether	[9]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130
cis-1,3-Dichloropropene		49.3	µg/L	1	50.0	<0.109	99	70 - 130
trans-1,3-Dichloropropene		46.9	µg/L	1	50.0	<0.181	94	70 - 130
Toluene		48.2	µg/L	1	50.0	<0.117	96	70 - 130
1,1,2-Trichloroethane		47.3	µg/L	1	50.0	<0.143	95	70 - 130
1,3-Dichloropropane		48.3	µg/L	1	50.0	<0.191	97	70 - 130
Dibromochloromethane		48.8	µg/L	1	50.0	0.247	97	70 - 130
1,2-Dibromoethane (EDB)		48.0	µg/L	1	50.0	<0.131	96	70 - 130
Tetrachloroethene (PCE)	[10]	28.7	µg/L	1	50.0	<0.353	57	70 - 130
Chlorobenzene		48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane		46.7	µg/L	1	50.0	<0.263	93	70 - 130
Ethylbenzene		45.3	µg/L	1	50.0	<0.174	91	70 - 130
m,p-Xylene		94.6	µg/L	1	100	<0.220	95	70 - 130
Bromoform		45.6	µg/L	1	50.0	0.928	89	70 - 130
Styrene	[11]	<0.413	µg/L	1	50.0	<0.413	0	70 - 130
o-Xylene		50.4	µg/L	1	50.0	<0.115	101	70 - 130
1,1,2,2-Tetrachloroethane		44.3	µg/L	1	50.0	<0.766	89	70 - 130
2-Chlorotoluene		45.1	µg/L	1	50.0	<0.132	90	70 - 130
1,2,3-Trichloropropane		43.8	µg/L	1	50.0	<0.599	88	70 - 130
Isopropylbenzene		47.4	µg/L	1	50.0	<0.145	95	70 - 130
Bromobenzene		46.1	µg/L	1	50.0	<0.266	92	70 - 130
n-Propylbenzene		45.0	µg/L	1	50.0	<0.136	90	70 - 130
1,3,5-Trimethylbenzene		42.6	µg/L	1	50.0	<0.124	85	70 - 130
tert-Butylbenzene		44.6	µg/L	1	50.0	<0.136	89	70 - 130
1,2,4-Trimethylbenzene		35.9	µg/L	1	50.0	<0.114	72	70 - 130
1,4-Dichlorobenzene (para)		39.6	µg/L	1	50.0	<0.230	79	70 - 130
sec-Butylbenzene		43.8	µg/L	1	50.0	<0.452	88	70 - 130
1,3-Dichlorobenzene (meta)		43.3	µg/L	1	50.0	<0.214	87	70 - 130
p-Isopropyltoluene		43.6	µg/L	1	50.0	<0.126	87	70 - 130
4-Chlorotoluene		46.3	µg/L	1	50.0	<0.161	93	70 - 130
1,2-Dichlorobenzene (ortho)		43.1	µg/L	1	50.0	<0.357	86	70 - 130
n-Butylbenzene		43.5	µg/L	1	50.0	<0.125	87	70 - 130
1,2-Dibromo-3-chloropropane		39.4	µg/L	1	50.0	<0.977	79	70 - 130
1,2,3-Trichlorobenzene		35.1	µg/L	1	50.0	<0.400	70	70 - 130
1,2,4-Trichlorobenzene		39.9	µg/L	1	50.0	<0.227	80	70 - 130
Naphthalene		37.1	µg/L	1	50.0	<0.672	74	70 - 130
Hexachlorobutadiene	[12]	34.1	µg/L	1	50.0	<0.198	68	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		47.3	µg/L	1	50.0	<0.169	95	70 - 130	2	20
Dichlorodifluoromethane		42.6	µg/L	1	50.0	<0.145	85	70 - 130	6	20
Chloromethane (methyl chloride)		55.3	µg/L	1	50.0	<0.164	111	70 - 130	0	20
Vinyl Chloride		48.9	µg/L	1	50.0	<0.110	98	70 - 130	2	20
Bromomethane (methyl bromide)	[13]	93.5	µg/L	1	50.0	<0.540	187	70 - 130	18	20
Chloroethane		63.6	µg/L	1	50.0	<0.232	127	70 - 130	4	20
Trichlorofluoromethane		46.2	µg/L	1	50.0	<0.149	92	70 - 130	7	20
Acetone	[14]	27.6	µg/L	1	50.0	1.06	53	70 - 130	4	20
Iodomethane (methyl iodide)		52.9	µg/L	1	50.0	<0.104	106	70 - 130	2	20
Carbon Disulfide		47.8	µg/L	1	50.0	<0.120	96	70 - 130	6	20
Acrylonitrile		45.4	µg/L	1	50.0	<0.189	91	70 - 130	2	20
2-Butanone (MEK)	[15]	34.1	µg/L	1	50.0	<0.218	68	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)		46.9	µg/L	1	50.0	<0.554	94	70 - 130	2	20
2-Hexanone		42.6	µg/L	1	50.0	<0.863	85	70 - 130	1	20
trans 1,4-Dichloro-2-butene		40.5	µg/L	1	50.0	<0.607	81	70 - 130	1	20
1,1-Dichloroethene		47.1	µg/L	1	50.0	<0.102	94	70 - 130	6	20
Methylene chloride		47.4	µg/L	1	50.0	<0.270	95	70 - 130	0	20
MTBE		50.0	µg/L	1	50.0	<0.122	100	70 - 130	1	20
trans-1,2-Dichloroethene		47.6	µg/L	1	50.0	<0.168	95	70 - 130	4	20
1,1-Dichloroethane		50.9	µg/L	1	50.0	<0.107	102	70 - 130	3	20
cis-1,2-Dichloroethene		46.6	µg/L	1	50.0	<0.151	93	70 - 130	2	20
2,2-Dichloropropane		38.9	µg/L	1	50.0	<0.167	78	70 - 130	4	20
1,2-Dichloroethane (EDC)		48.9	µg/L	1	50.0	<0.0890	98	70 - 130	2	20
Chloroform		46.6	µg/L	1	50.0	<0.121	93	70 - 130	2	20
1,1,1-Trichloroethane		49.5	µg/L	1	50.0	<0.170	99	70 - 130	5	20
1,1-Dichloropropene		43.8	µg/L	1	50.0	<0.156	88	70 - 130	10	20
Benzene		48.6	µg/L	1	50.0	<0.113	97	70 - 130	4	20
Carbon Tetrachloride		47.8	µg/L	1	50.0	<0.0930	96	70 - 130	7	20
1,2-Dichloropropane		48.6	µg/L	1	50.0	<0.129	97	70 - 130	3	20
Trichloroethene (TCE)		40.3	µg/L	1	50.0	<0.160	81	70 - 130	4	20
Dibromomethane (methylene bromide)		39.9	µg/L	1	50.0	<0.137	80	70 - 130	2	20
Bromodichloromethane		47.9	µg/L	1	50.0	<0.107	96	70 - 130	1	20
2-Chloroethyl vinyl ether	[16]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130	0	20
cis-1,3-Dichloropropene		47.8	µg/L	1	50.0	<0.109	96	70 - 130	3	20
trans-1,3-Dichloropropene		45.5	µg/L	1	50.0	<0.181	91	70 - 130	3	20
Toluene		45.1	µg/L	1	50.0	<0.117	90	70 - 130	7	20
1,1,2-Trichloroethane		46.8	µg/L	1	50.0	<0.143	94	70 - 130	1	20
1,3-Dichloropropane		47.8	µg/L	1	50.0	<0.191	96	70 - 130	1	20
Dibromochloromethane		47.4	µg/L	1	50.0	0.247	94	70 - 130	3	20
1,2-Dibromoethane (EDB)		46.8	µg/L	1	50.0	<0.131	94	70 - 130	2	20
Tetrachloroethene (PCE)	[17]	26.0	µg/L	1	50.0	<0.353	52	70 - 130	10	20
Chlorobenzene		46.7	µg/L	1	50.0	<0.135	93	70 - 130	4	20
1,1,1,2-Tetrachloroethane		45.0	µg/L	1	50.0	<0.263	90	70 - 130	4	20

continued ...

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[14] Analyte recovery outside control limits. Results considered estimated values.
[15] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[16] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[17] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		40.7	μg/L	1	50.0	<0.174	81	70 - 130	11	20
m,p-Xylene		88.7	μg/L	1	100	<0.220	89	70 - 130	6	20
Bromoform		44.4	μg/L	1	50.0	0.928	87	70 - 130	3	20
Styrene	[18]	<0.413	μg/L	1	50.0	<0.413	0	70 - 130	0	20
o-Xylene		48.4	μg/L	1	50.0	<0.115	97	70 - 130	4	20
1,1,2,2-Tetrachloroethane		43.4	μg/L	1	50.0	<0.766	87	70 - 130	2	20
2-Chlorotoluene		40.8	μg/L	1	50.0	<0.132	82	70 - 130	10	20
1,2,3-Trichloropropane		43.6	μg/L	1	50.0	<0.599	87	70 - 130	0	20
Isopropylbenzene		43.8	μg/L	1	50.0	<0.145	88	70 - 130	8	20
Bromobenzene		43.3	μg/L	1	50.0	<0.266	87	70 - 130	6	20
n-Propylbenzene		40.5	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,3,5-Trimethylbenzene		38.2	μg/L	1	50.0	<0.124	76	70 - 130	11	20
tert-Butylbenzene		40.4	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,2,4-Trimethylbenzene	[19]	33.1	μg/L	1	50.0	<0.114	66	70 - 130	8	20
1,4-Dichlorobenzene (para)		37.1	μg/L	1	50.0	<0.230	74	70 - 130	6	20
sec-Butylbenzene		39.5	μg/L	1	50.0	<0.452	79	70 - 130	10	20
1,3-Dichlorobenzene (meta)		39.7	μg/L	1	50.0	<0.214	79	70 - 130	9	20
p-Isopropyltoluene		39.6	μg/L	1	50.0	<0.126	79	70 - 130	10	20
4-Chlorotoluene		42.5	μg/L	1	50.0	<0.161	85	70 - 130	9	20
1,2-Dichlorobenzene (ortho)		40.7	μg/L	1	50.0	<0.357	81	70 - 130	6	20
n-Butylbenzene		38.7	μg/L	1	50.0	<0.125	77	70 - 130	12	20
1,2-Dibromo-3-chloropropane		37.7	μg/L	1	50.0	<0.977	75	70 - 130	4	20
1,2,3-Trichlorobenzene	[20]	34.2	μg/L	1	50.0	<0.400	68	70 - 130	3	20
1,2,4-Trichlorobenzene		37.3	μg/L	1	50.0	<0.227	75	70 - 130	7	20
Naphthalene		36.2	μg/L	1	50.0	<0.672	72	70 - 130	2	20
Hexachlorobutadiene	[21]	30.8	μg/L	1	50.0	<0.198	62	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	49.9	50.2	μg/L	1	50	100	100	70 - 130
Toluene-d8	49.8	49.0	μg/L	1	50	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	48.9	50.0	μg/L	1	50	98	100	70 - 130

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

[18] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[19] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[20] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[21] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	48.9	98	80 - 120	2009-10-02
Dichlorodifluoromethane		µg/L	50.0	49.3	99	80 - 120	2009-10-02
Chloromethane (methyl chloride)		µg/L	50.0	55.7	111	80 - 120	2009-10-02
Vinyl Chloride		µg/L	50.0	49.6	99	80 - 120	2009-10-02
Bromomethane (methyl bromide)		µg/L	50.0	60.2	120	80 - 120	2009-10-02
Chloroethane	[22]	µg/L	50.0	61.1	122	80 - 120	2009-10-02
Trichlorofluoromethane		µg/L	50.0	51.2	102	80 - 120	2009-10-02
Acetone	[23]	µg/L	50.0	172	344	80 - 120	2009-10-02
Iodomethane (methyl iodide)		µg/L	50.0	54.3	109	80 - 120	2009-10-02
Carbon Disulfide		µg/L	50.0	51.4	103	80 - 120	2009-10-02
Acrylonitrile		µg/L	50.0	48.4	97	80 - 120	2009-10-02
2-Butanone (MEK)		µg/L	50.0	40.8	82	80 - 120	2009-10-02
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	47.8	96	80 - 120	2009-10-02
2-Hexanone		µg/L	50.0	42.3	85	80 - 120	2009-10-02
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.2	92	80 - 120	2009-10-02
1,1-Dichloroethene		µg/L	50.0	50.7	101	80 - 120	2009-10-02
Methylene chloride		µg/L	50.0	48.0	96	80 - 120	2009-10-02
MTBE		µg/L	50.0	50.6	101	80 - 120	2009-10-02
trans-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-10-02
1,1-Dichloroethane		µg/L	50.0	52.1	104	80 - 120	2009-10-02
cis-1,2-Dichloroethene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
2,2-Dichloropropane		µg/L	50.0	52.7	105	80 - 120	2009-10-02
1,2-Dichloroethane (EDC)		µg/L	50.0	49.1	98	80 - 120	2009-10-02
Chloroform		µg/L	50.0	48.1	96	80 - 120	2009-10-02
1,1,1-Trichloroethane		µg/L	50.0	53.6	107	80 - 120	2009-10-02
1,1-Dichloropropene		µg/L	50.0	46.8	94	80 - 120	2009-10-02
Benzene		µg/L	50.0	50.5	101	80 - 120	2009-10-02
Carbon Tetrachloride		µg/L	50.0	53.1	106	80 - 120	2009-10-02
1,2-Dichloropropane		µg/L	50.0	50.4	101	80 - 120	2009-10-02
Trichloroethene (TCE)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
Dibromomethane (methylene bromide)		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Bromodichloromethane		µg/L	50.0	49.0	98	80 - 120	2009-10-02

continued ...

[22] Analyte recovery outside CCV control limits. Concentration biased high. •
[23] Analyte recovery outside CCV control limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Chloroethyl vinyl ether		µg/L	50.0	40.7	81	80 - 120	2009-10-02
cis-1,3-Dichloropropene		µg/L	50.0	51.4	103	80 - 120	2009-10-02
trans-1,3-Dichloropropene		µg/L	50.0	47.6	95	80 - 120	2009-10-02
Toluene		µg/L	50.0	46.6	93	80 - 120	2009-10-02
1,1,2-Trichloroethane		µg/L	50.0	46.4	93	80 - 120	2009-10-02
1,3-Dichloropropane		µg/L	50.0	46.2	92	80 - 120	2009-10-02
Dibromochloromethane		µg/L	50.0	47.4	95	80 - 120	2009-10-02
1,2-Dibromoethane (EDB)		µg/L	50.0	46.4	93	80 - 120	2009-10-02
Tetrachloroethene (PCE)	[24]	µg/L	50.0	29.4	59	80 - 120	2009-10-02
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
1,1,1,2-Tetrachloroethane		µg/L	50.0	45.6	91	80 - 120	2009-10-02
Ethylbenzene		µg/L	50.0	44.6	89	80 - 120	2009-10-02
m,p-Xylene		µg/L	100	93.1	93	80 - 120	2009-10-02
Bromoform		µg/L	50.0	45.0	90	80 - 120	2009-10-02
Styrene		µg/L	50.0	48.4	97	80 - 120	2009-10-02
o-Xylene		µg/L	50.0	45.6	91	80 - 120	2009-10-02
1,1,2,2-Tetrachloroethane		µg/L	50.0	44.3	89	80 - 120	2009-10-02
2-Chlorotoluene		µg/L	50.0	44.8	90	80 - 120	2009-10-02
1,2,3-Trichloropropane		µg/L	50.0	43.0	86	80 - 120	2009-10-02
Isopropylbenzene		µg/L	50.0	47.0	94	80 - 120	2009-10-02
Bromobenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
n-Propylbenzene		µg/L	50.0	44.9	90	80 - 120	2009-10-02
1,3,5-Trimethylbenzene		µg/L	50.0	44.4	89	80 - 120	2009-10-02
tert-Butylbenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
1,2,4-Trimethylbenzene	[25]	µg/L	50.0	37.8	76	80 - 120	2009-10-02
1,4-Dichlorobenzene (para)		µg/L	50.0	40.9	82	80 - 120	2009-10-02
sec-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,3-Dichlorobenzene (meta)		µg/L	50.0	43.6	87	80 - 120	2009-10-02
p-Isopropyltoluene		µg/L	50.0	44.5	89	80 - 120	2009-10-02
4-Chlorotoluene		µg/L	50.0	45.1	90	80 - 120	2009-10-02
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
n-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,2-Dibromo-3-chloropropane		µg/L	50.0	40.0	80	80 - 120	2009-10-02
1,2,3-Trichlorobenzene	[26]	µg/L	50.0	37.7	75	80 - 120	2009-10-02
1,2,4-Trichlorobenzene		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Naphthalene	[27]	µg/L	50.0	38.1	76	80 - 120	2009-10-02
Hexachlorobutadiene	[28]	µg/L	50.0	38.8	78	80 - 120	2009-10-02

[24] Analyte recovery outside CCV control limits. Concentration biased low. •
[25] Analyte recovery outside CCV control limits. Concentration biased low. •
[26] Analyte recovery outside CCV control limits. Concentration biased low. •
[27] Analyte recovery outside CCV control limits. Concentration biased low. •
[28] Analyte recovery outside CCV control limits. Concentration biased low. •

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO									REMARKS
9-23-09	1306	HTSA-0197 HTW-003-0909	Water	211157	6	X	X									

ANALYSIS REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:	(PRINTED NAME): GABRIEL GARCIA	(PRINTED NAME):	(PRINTED NAME): Carol Fox
SHIPPING ID NO.:	CHAIN OF CUSTODY SEALS: intact	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY): Trace
VIA: Lab Courier	GOOD CONDITION/COLD: JR 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE): 9-30-09 8:30 AM
	CONFORMS TO RECORD:	SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		Fed Ex 7979 7307 2490

PLEASE USE BALL POINT PEN

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TRACEANALYSIS, INC.

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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Report Date: October 6, 2009

Work Order: 9093020

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211159	HTSA-0197-HVW-004-0909	water	2009-09-28	13:15	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093020. Samples for work order 9093020 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54774	2009-10-02 at 12:00	64142	2009-10-02 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093020 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211159 - HTSA-0197-HVW-004-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**13.3**	**13.3**	<1.52	mg/L	10	1.52	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.00	mg/L	10	1.00	100	70.8 - 112
4-Bromofluorobenzene (4-BFB)		1.07	mg/L	10	1.00	107	80 - 109

Sample: 211159 - HTSA-0197-HVW-004-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64142	Date Analyzed:	2009-10-02	Analyzed By:	JG
Prep Batch:	54774	Sample Preparation:	2009-10-02	Prepared By:	JG

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**128**	**128**	<12.2	μg/L	100	12.2	1	0.122
Benzene		**1800**	**1800**	<11.3	μg/L	100	11.3	1	0.113
Toluene		**719**	**719**	<11.7	μg/L	100	11.7	1	0.117
Ethylbenzene	J	**35.0**	<100	<17.4	μg/L	100	17.4	1	0.174
m,p-Xylene		**3100**	**3100**	<22.0	μg/L	100	22.0	1	0.22
o-Xylene		**1480**	**1480**	<11.5	μg/L	100	11.5	1	0.115
n-Propylbenzene	J	**66.7**	<100	<13.6	μg/L	100	13.6	1	0.136
1,3,5-Trimethylbenzene		**135**	**135**	<12.4	μg/L	100	12.4	1	0.124
1,2,4-Trimethylbenzene	[1]	**613**	**613**	<11.4	μg/L	100	11.4	1	0.114
Naphthalene	[2] J	**115**	<500	<67.2	μg/L	100	67.2	5	0.672

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		5090	μg/L	100	5000	102	70 - 130
Toluene-d8		4860	μg/L	100	5000	97	70 - 130
4-Bromofluorobenzene (4-BFB)		4940	μg/L	100	5000	99	70 - 130

[1] Concentration biased low.
[2] Concentration biased low.

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.169	µg/L	0.169
Dichlorodifluoromethane		<0.145	µg/L	0.145
Chloromethane (methyl chloride)		<0.164	µg/L	0.164
Vinyl Chloride		<0.110	µg/L	0.11
Bromomethane (methyl bromide)		<0.540	µg/L	0.54
Chloroethane		<0.232	µg/L	0.232
Trichlorofluoromethane		<0.149	µg/L	0.149
Acetone		<0.893	µg/L	0.893
Iodomethane (methyl iodide)		<0.104	µg/L	0.104
Carbon Disulfide		<0.120	µg/L	0.12
Acrylonitrile		<0.189	µg/L	0.189
2-Butanone (MEK)		2.44	µg/L	0.218
4-Methyl-2-pentanone (MIBK)		<0.554	µg/L	0.554
2-Hexanone		<0.863	µg/L	0.863
trans 1,4-Dichloro-2-butene		<0.607	µg/L	0.607
1,1-Dichloroethene		<0.102	µg/L	0.102
Methylene chloride		<0.270	µg/L	0.27
MTBE		<0.122	µg/L	0.122
trans-1,2-Dichloroethene		<0.168	µg/L	0.168
1,1-Dichloroethane		<0.107	µg/L	0.107
cis-1,2-Dichloroethene		<0.151	µg/L	0.151
2,2-Dichloropropane		<0.167	µg/L	0.167
1,2-Dichloroethane (EDC)		<0.0890	µg/L	0.089
Chloroform		<0.121	µg/L	0.121
1,1,1-Trichloroethane		<0.170	µg/L	0.17
1,1-Dichloropropene		<0.156	µg/L	0.156
Benzene		<0.113	µg/L	0.113
Carbon Tetrachloride		<0.0930	µg/L	0.093

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.129	μg/L	0.129
Trichloroethene (TCE)		<0.160	μg/L	0.16
Dibromomethane (methylene bromide)		<0.137	μg/L	0.137
Bromodichloromethane		<0.107	μg/L	0.107
2-Chloroethyl vinyl ether		<0.257	μg/L	0.257
cis-1,3-Dichloropropene		<0.109	μg/L	0.109
trans-1,3-Dichloropropene		<0.181	μg/L	0.181
Toluene		<0.117	μg/L	0.117
1,1,2-Trichloroethane		<0.143	μg/L	0.143
1,3-Dichloropropane		<0.191	μg/L	0.191
Dibromochloromethane		<0.118	μg/L	0.118
1,2-Dibromoethane (EDB)		<0.131	μg/L	0.131
Tetrachloroethene (PCE)		<0.353	μg/L	0.353
Chlorobenzene		<0.135	μg/L	0.135
1,1,1,2-Tetrachloroethane		<0.263	μg/L	0.263
Ethylbenzene		<0.174	μg/L	0.174
m,p-Xylene		<0.220	μg/L	0.22
Bromoform		<0.385	μg/L	0.385
Styrene		<0.413	μg/L	0.413
o-Xylene		<0.115	μg/L	0.115
1,1,2,2-Tetrachloroethane		<0.766	μg/L	0.766
2-Chlorotoluene		<0.132	μg/L	0.132
1,2,3-Trichloropropane		<0.599	μg/L	0.599
Isopropylbenzene		<0.145	μg/L	0.145
Bromobenzene		<0.266	μg/L	0.266
n-Propylbenzene		<0.136	μg/L	0.136
1,3,5-Trimethylbenzene		<0.124	μg/L	0.124
tert-Butylbenzene		<0.136	μg/L	0.136
1,2,4-Trimethylbenzene		<0.114	μg/L	0.114
1,4-Dichlorobenzene (para)		<0.230	μg/L	0.23
sec-Butylbenzene		<0.452	μg/L	0.452
1,3-Dichlorobenzene (meta)		<0.214	μg/L	0.214
p-Isopropyltoluene		<0.126	μg/L	0.126
4-Chlorotoluene		<0.161	μg/L	0.161
1,2-Dichlorobenzene (ortho)		<0.357	μg/L	0.357
n-Butylbenzene		<0.125	μg/L	0.125
1,2-Dibromo-3-chloropropane		<0.977	μg/L	0.977
1,2,3-Trichlorobenzene		<0.400	μg/L	0.4
1,2,4-Trichlorobenzene		<0.227	μg/L	0.227
Naphthalene		<0.672	μg/L	0.672
Hexachlorobutadiene		<0.198	μg/L	0.198

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	μg/L	1	50.0	100	70 - 130
Toluene-d8		48.4	μg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		50.2	μg/L	1	50.0	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		49.7	µg/L	1	50.0	<0.169	99	70 - 130
Dichlorodifluoromethane		53.9	µg/L	1	50.0	<0.145	108	70 - 130
Chloromethane (methyl chloride)		56.9	µg/L	1	50.0	<0.164	114	70 - 130
Vinyl Chloride		51.3	µg/L	1	50.0	<0.110	103	70 - 130
Bromomethane (methyl bromide)		65.2	µg/L	1	50.0	<0.540	130	70 - 130
Chloroethane		64.4	µg/L	1	50.0	<0.232	129	70 - 130
Trichlorofluoromethane		52.2	µg/L	1	50.0	<0.149	104	70 - 130
Acetone	[3]	186	µg/L	1	50.0	<0.893	372	70 - 130
Iodomethane (methyl iodide)		54.2	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		52.7	µg/L	1	50.0	<0.120	105	70 - 130
Acrylonitrile		48.5	µg/L	1	50.0	<0.189	97	70 - 130
2-Butanone (MEK)		42.5	µg/L	1	50.0	2.44	85	70 - 130
4-Methyl-2-pentanone (MIBK)		50.4	µg/L	1	50.0	<0.554	101	70 - 130
2-Hexanone		45.0	µg/L	1	50.0	<0.863	90	70 - 130
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.607	89	70 - 130
1,1-Dichloroethene		51.4	µg/L	1	50.0	<0.102	103	70 - 130
Methylene chloride		48.9	µg/L	1	50.0	<0.270	98	70 - 130
MTBE		51.2	µg/L	1	50.0	<0.122	102	70 - 130
trans-1,2-Dichloroethene		50.6	µg/L	1	50.0	<0.168	101	70 - 130
1,1-Dichloroethane		53.3	µg/L	1	50.0	<0.107	107	70 - 130

continued ...

[3] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.2	µg/L	1	50.0	<0.151	98	70 - 130
2,2-Dichloropropane	49.6	µg/L	1	50.0	<0.167	99	70 - 130
1,2-Dichloroethane (EDC)	50.4	µg/L	1	50.0	<0.0890	101	70 - 130
Chloroform	49.3	µg/L	1	50.0	<0.121	99	70 - 130
1,1,1-Trichloroethane	53.1	µg/L	1	50.0	<0.170	106	70 - 130
1,1-Dichloropropene	51.7	µg/L	1	50.0	<0.156	103	70 - 130
Benzene	50.9	µg/L	1	50.0	<0.113	102	70 - 130
Carbon Tetrachloride	53.7	µg/L	1	50.0	<0.0930	107	70 - 130
1,2-Dichloropropane	50.0	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)	45.4	µg/L	1	50.0	<0.160	91	70 - 130
Dibromomethane (methylene bromide)	42.6	µg/L	1	50.0	<0.137	85	70 - 130
Bromodichloromethane	49.3	µg/L	1	50.0	<0.107	99	70 - 130
2-Chloroethyl vinyl ether	42.9	µg/L	1	50.0	<0.257	86	70 - 130
cis-1,3-Dichloropropene	51.0	µg/L	1	50.0	<0.109	102	70 - 130
trans-1,3-Dichloropropene	49.4	µg/L	1	50.0	<0.181	99	70 - 130
Toluene	47.5	µg/L	1	50.0	<0.117	95	70 - 130
1,1,2-Trichloroethane	48.1	µg/L	1	50.0	<0.143	96	70 - 130
1,3-Dichloropropane	48.2	µg/L	1	50.0	<0.191	96	70 - 130
Dibromochloromethane	48.7	µg/L	1	50.0	<0.118	97	70 - 130
1,2-Dibromoethane (EDB)	47.0	µg/L	1	50.0	<0.131	94	70 - 130
Tetrachloroethene (PCE)	39.6	µg/L	1	50.0	<0.353	79	70 - 130
Chlorobenzene	48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane	45.4	µg/L	1	50.0	<0.263	91	70 - 130
Ethylbenzene	45.2	µg/L	1	50.0	<0.174	90	70 - 130
m,p-Xylene	93.6	µg/L	1	100	<0.220	94	70 - 130
Bromoform	46.3	µg/L	1	50.0	<0.385	93	70 - 130
Styrene	50.3	µg/L	1	50.0	<0.413	101	70 - 130
o-Xylene	46.5	µg/L	1	50.0	<0.115	93	70 - 130
1,1,2,2-Tetrachloroethane	43.7	µg/L	1	50.0	<0.766	87	70 - 130
2-Chlorotoluene	43.6	µg/L	1	50.0	<0.132	87	70 - 130
1,2,3-Trichloropropane	45.6	µg/L	1	50.0	<0.599	91	70 - 130
Isopropylbenzene	47.2	µg/L	1	50.0	<0.145	94	70 - 130
Bromobenzene	44.4	µg/L	1	50.0	<0.266	89	70 - 130
n-Propylbenzene	44.4	µg/L	1	50.0	<0.136	89	70 - 130
1,3,5-Trimethylbenzene	43.3	µg/L	1	50.0	<0.124	87	70 - 130
tert-Butylbenzene	44.9	µg/L	1	50.0	<0.136	90	70 - 130
1,2,4-Trimethylbenzene	39.8	µg/L	1	50.0	<0.114	80	70 - 130
1,4-Dichlorobenzene (para)	40.0	µg/L	1	50.0	<0.230	80	70 - 130
sec-Butylbenzene	44.3	µg/L	1	50.0	<0.452	89	70 - 130
1,3-Dichlorobenzene (meta)	42.2	µg/L	1	50.0	<0.214	84	70 - 130
p-Isopropyltoluene	44.2	µg/L	1	50.0	<0.126	88	70 - 130
4-Chlorotoluene	44.9	µg/L	1	50.0	<0.161	90	70 - 130
1,2-Dichlorobenzene (ortho)	44.0	µg/L	1	50.0	<0.357	88	70 - 130
n-Butylbenzene	43.8	µg/L	1	50.0	<0.125	88	70 - 130
1,2-Dibromo-3-chloropropane	40.1	µg/L	1	50.0	<0.977	80	70 - 130
1,2,3-Trichlorobenzene	38.2	µg/L	1	50.0	<0.400	76	70 - 130
1,2,4-Trichlorobenzene	41.5	µg/L	1	50.0	<0.227	83	70 - 130

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	39.3	μg/L	1	50.0	<0.672	79	70 - 130
Hexachlorobutadiene	38.6	μg/L	1	50.0	<0.198	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		49.2	μg/L	1	50.0	<0.169	98	70 - 130	1	20
Dichlorodifluoromethane		54.6	μg/L	1	50.0	<0.145	109	70 - 130	1	20
Chloromethane (methyl chloride)		58.1	μg/L	1	50.0	<0.164	116	70 - 130	2	20
Vinyl Chloride		51.8	μg/L	1	50.0	<0.110	104	70 - 130	1	20
Bromomethane (methyl bromide)		62.4	μg/L	1	50.0	<0.540	125	70 - 130	4	20
Chloroethane	[4]	65.9	μg/L	1	50.0	<0.232	132	70 - 130	2	20
Trichlorofluoromethane		53.0	μg/L	1	50.0	<0.149	106	70 - 130	2	20
Acetone	[5]	193	μg/L	1	50.0	<0.893	386	70 - 130	4	20
Iodomethane (methyl iodide)		53.7	μg/L	1	50.0	<0.104	107	70 - 130	1	20
Carbon Disulfide		52.3	μg/L	1	50.0	<0.120	105	70 - 130	1	20
Acrylonitrile		48.5	μg/L	1	50.0	<0.189	97	70 - 130	0	20
2-Butanone (MEK)		44.0	μg/L	1	50.0	2.44	88	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)		50.1	μg/L	1	50.0	<0.554	100	70 - 130	1	20
2-Hexanone		46.6	μg/L	1	50.0	<0.863	93	70 - 130	4	20
trans 1,4-Dichloro-2-butene		46.8	μg/L	1	50.0	<0.607	94	70 - 130	5	20
1,1-Dichloroethene		51.5	μg/L	1	50.0	<0.102	103	70 - 130	0	20
Methylene chloride		48.2	μg/L	1	50.0	<0.270	96	70 - 130	1	20
MTBE		50.8	μg/L	1	50.0	<0.122	102	70 - 130	1	20
trans-1,2-Dichloroethene		50.1	μg/L	1	50.0	<0.168	100	70 - 130	1	20
1,1-Dichloroethane		52.7	μg/L	1	50.0	<0.107	105	70 - 130	1	20
cis-1,2-Dichloroethene		49.1	μg/L	1	50.0	<0.151	98	70 - 130	0	20
2,2-Dichloropropane		49.4	μg/L	1	50.0	<0.167	99	70 - 130	0	20
1,2-Dichloroethane (EDC)		50.6	μg/L	1	50.0	<0.0890	101	70 - 130	0	20
Chloroform		48.7	μg/L	1	50.0	<0.121	97	70 - 130	1	20
1,1,1-Trichloroethane		53.4	μg/L	1	50.0	<0.170	107	70 - 130	1	20
1,1-Dichloropropene		51.7	μg/L	1	50.0	<0.156	103	70 - 130	0	20
Benzene		51.5	μg/L	1	50.0	<0.113	103	70 - 130	1	20
Carbon Tetrachloride		54.2	μg/L	1	50.0	<0.0930	108	70 - 130	1	20
1,2-Dichloropropane		51.1	μg/L	1	50.0	<0.129	102	70 - 130	2	20
Trichloroethene (TCE)		46.1	μg/L	1	50.0	<0.160	92	70 - 130	2	20
Dibromomethane (methylene bromide)		42.5	μg/L	1	50.0	<0.137	85	70 - 130	0	20
Bromodichloromethane		50.1	μg/L	1	50.0	<0.107	100	70 - 130	2	20
2-Chloroethyl vinyl ether		43.6	μg/L	1	50.0	<0.257	87	70 - 130	2	20
cis-1,3-Dichloropropene		51.5	μg/L	1	50.0	<0.109	103	70 - 130	1	20
trans-1,3-Dichloropropene		49.2	μg/L	1	50.0	<0.181	98	70 - 130	0	20
Toluene		48.0	μg/L	1	50.0	<0.117	96	70 - 130	1	20
1,1,2-Trichloroethane		47.5	μg/L	1	50.0	<0.143	95	70 - 130	1	20
1,3-Dichloropropane		49.0	μg/L	1	50.0	<0.191	98	70 - 130	2	20
Dibromochloromethane		49.3	μg/L	1	50.0	<0.118	99	70 - 130	1	20

continued ...

[4] Analyte recovery outside control limits. Concentration biased high. •
[5] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2-Dibromoethane (EDB)	48.0	μg/L	1	50.0	<0.131	96	70 - 130	2	20
Tetrachloroethene (PCE)	46.5	μg/L	1	50.0	<0.353	93	70 - 130	16	20
Chlorobenzene	50.1	μg/L	1	50.0	<0.135	100	70 - 130	3	20
1,1,1,2-Tetrachloroethane	46.5	μg/L	1	50.0	<0.263	93	70 - 130	2	20
Ethylbenzene	45.4	μg/L	1	50.0	<0.174	91	70 - 130	0	20
m,p-Xylene	96.6	μg/L	1	100	<0.220	97	70 - 130	3	20
Bromoform	46.1	μg/L	1	50.0	<0.385	92	70 - 130	0	20
Styrene	50.6	μg/L	1	50.0	<0.413	101	70 - 130	1	20
o-Xylene	46.6	μg/L	1	50.0	<0.115	93	70 - 130	0	20
1,1,2,2-Tetrachloroethane	44.1	μg/L	1	50.0	<0.766	88	70 - 130	1	20
2-Chlorotoluene	43.9	μg/L	1	50.0	<0.132	88	70 - 130	1	20
1,2,3-Trichloropropane	45.8	μg/L	1	50.0	<0.599	92	70 - 130	0	20
Isopropylbenzene	48.9	μg/L	1	50.0	<0.145	98	70 - 130	4	20
Bromobenzene	45.4	μg/L	1	50.0	<0.266	91	70 - 130	2	20
n-Propylbenzene	45.1	μg/L	1	50.0	<0.136	90	70 - 130	2	20
1,3,5-Trimethylbenzene	44.2	μg/L	1	50.0	<0.124	88	70 - 130	2	20
tert-Butylbenzene	45.8	μg/L	1	50.0	<0.136	92	70 - 130	2	20
1,2,4-Trimethylbenzene	42.8	μg/L	1	50.0	<0.114	86	70 - 130	7	20
1,4-Dichlorobenzene (para)	39.9	μg/L	1	50.0	<0.230	80	70 - 130	0	20
sec-Butylbenzene	44.6	μg/L	1	50.0	<0.452	89	70 - 130	1	20
1,3-Dichlorobenzene (meta)	42.7	μg/L	1	50.0	<0.214	85	70 - 130	1	20
p-Isopropyltoluene	44.0	μg/L	1	50.0	<0.126	88	70 - 130	0	20
4-Chlorotoluene	45.8	μg/L	1	50.0	<0.161	92	70 - 130	2	20
1,2-Dichlorobenzene (ortho)	43.8	μg/L	1	50.0	<0.357	88	70 - 130	0	20
n-Butylbenzene	45.0	μg/L	1	50.0	<0.125	90	70 - 130	3	20
1,2-Dibromo-3-chloropropane	39.9	μg/L	1	50.0	<0.977	80	70 - 130	0	20
1,2,3-Trichlorobenzene	38.5	μg/L	1	50.0	<0.400	77	70 - 130	1	20
1,2,4-Trichlorobenzene	42.1	μg/L	1	50.0	<0.227	84	70 - 130	1	20
Naphthalene	39.2	μg/L	1	50.0	<0.672	78	70 - 130	0	20
Hexachlorobutadiene	39.1	μg/L	1	50.0	<0.198	78	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.3	50.3	μg/L	1	50.0	103	101	70 - 130
Toluene-d8	48.6	49.2	μg/L	1	50.0	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	49.8	50.3	μg/L	1	50.0	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211362

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		48.5	µg/L	1	50.0	<0.169	97	70 - 130
Dichlorodifluoromethane		45.4	µg/L	1	50.0	<0.145	91	70 - 130
Chloromethane (methyl chloride)		55.4	µg/L	1	50.0	<0.164	111	70 - 130
Vinyl Chloride		50.1	µg/L	1	50.0	<0.110	100	70 - 130
Bromomethane (methyl bromide)	[6]	112	µg/L	1	50.0	<0.540	224	70 - 130
Chloroethane	[7]	66.2	µg/L	1	50.0	<0.232	132	70 - 130
Trichlorofluoromethane		49.4	µg/L	1	50.0	<0.149	99	70 - 130
Acetone	[8]	28.7	µg/L	1	50.0	1.06	55	70 - 130
Iodomethane (methyl iodide)		53.9	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		50.8	µg/L	1	50.0	<0.120	102	70 - 130
Acrylonitrile		46.4	µg/L	1	50.0	<0.189	93	70 - 130
2-Butanone (MEK)		34.9	µg/L	1	50.0	<0.218	70	70 - 130
4-Methyl-2-pentanone (MIBK)		48.1	µg/L	1	50.0	<0.554	96	70 - 130
2-Hexanone		42.3	µg/L	1	50.0	<0.863	85	70 - 130
trans 1,4-Dichloro-2-butene		41.0	µg/L	1	50.0	<0.607	82	70 - 130
1,1-Dichloroethene		50.2	µg/L	1	50.0	<0.102	100	70 - 130
Methylene chloride		47.3	µg/L	1	50.0	<0.270	95	70 - 130
MTBE		50.6	µg/L	1	50.0	<0.122	101	70 - 130
trans-1,2-Dichloroethene		49.4	µg/L	1	50.0	<0.168	99	70 - 130
1,1-Dichloroethane		52.4	µg/L	1	50.0	<0.107	105	70 - 130
cis-1,2-Dichloroethene		47.8	µg/L	1	50.0	<0.151	96	70 - 130
2,2-Dichloropropane		40.6	µg/L	1	50.0	<0.167	81	70 - 130
1,2-Dichloroethane (EDC)		49.8	µg/L	1	50.0	<0.0890	100	70 - 130
Chloroform		47.8	µg/L	1	50.0	<0.121	96	70 - 130
1,1,1-Trichloroethane		52.0	µg/L	1	50.0	<0.170	104	70 - 130
1,1-Dichloropropene		48.5	µg/L	1	50.0	<0.156	97	70 - 130
Benzene		50.6	µg/L	1	50.0	<0.113	101	70 - 130

continued ...

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Analyte recovery outside control limits. Concentration biased high.
[8] Analyte recovery outside control limits. Results considered estimated values.

matrix spikes continued . . .

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Carbon Tetrachloride		51.5	µg/L	1	50.0	<0.0930	103	70 - 130
1,2-Dichloropropane		50.2	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)		41.8	µg/L	1	50.0	<0.160	84	70 - 130
Dibromomethane (methylene bromide)		40.7	µg/L	1	50.0	<0.137	81	70 - 130
Bromodichloromethane		48.5	µg/L	1	50.0	<0.107	97	70 - 130
2-Chloroethyl vinyl ether	[9]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130
cis-1,3-Dichloropropene		49.3	µg/L	1	50.0	<0.109	99	70 - 130
trans-1,3-Dichloropropene		46.9	µg/L	1	50.0	<0.181	94	70 - 130
Toluene		48.2	µg/L	1	50.0	<0.117	96	70 - 130
1,1,2-Trichloroethane		47.3	µg/L	1	50.0	<0.143	95	70 - 130
1,3-Dichloropropane		48.3	µg/L	1	50.0	<0.191	97	70 - 130
Dibromochloromethane		48.8	µg/L	1	50.0	0.247	97	70 - 130
1,2-Dibromoethane (EDB)		48.0	µg/L	1	50.0	<0.131	96	70 - 130
Tetrachloroethene (PCE)	[10]	28.7	µg/L	1	50.0	<0.353	57	70 - 130
Chlorobenzene		48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane		46.7	µg/L	1	50.0	<0.263	93	70 - 130
Ethylbenzene		45.3	µg/L	1	50.0	<0.174	91	70 - 130
m,p-Xylene		94.6	µg/L	1	100	<0.220	95	70 - 130
Bromoform		45.6	µg/L	1	50.0	0.928	89	70 - 130
Styrene	[11]	<0.413	µg/L	1	50.0	<0.413	0	70 - 130
o-Xylene		50.4	µg/L	1	50.0	<0.115	101	70 - 130
1,1,2,2-Tetrachloroethane		44.3	µg/L	1	50.0	<0.766	89	70 - 130
2-Chlorotoluene		45.1	µg/L	1	50.0	<0.132	90	70 - 130
1,2,3-Trichloropropane		43.8	µg/L	1	50.0	<0.599	88	70 - 130
Isopropylbenzene		47.4	µg/L	1	50.0	<0.145	95	70 - 130
Bromobenzene		46.1	µg/L	1	50.0	<0.266	92	70 - 130
n-Propylbenzene		45.0	µg/L	1	50.0	<0.136	90	70 - 130
1,3,5-Trimethylbenzene		42.6	µg/L	1	50.0	<0.124	85	70 - 130
tert-Butylbenzene		44.6	µg/L	1	50.0	<0.136	89	70 - 130
1,2,4-Trimethylbenzene		35.9	µg/L	1	50.0	<0.114	72	70 - 130
1,4-Dichlorobenzene (para)		39.6	µg/L	1	50.0	<0.230	79	70 - 130
sec-Butylbenzene		43.8	µg/L	1	50.0	<0.452	88	70 - 130
1,3-Dichlorobenzene (meta)		43.3	µg/L	1	50.0	<0.214	87	70 - 130
p-Isopropyltoluene		43.6	µg/L	1	50.0	<0.126	87	70 - 130
4-Chlorotoluene		46.3	µg/L	1	50.0	<0.161	93	70 - 130
1,2-Dichlorobenzene (ortho)		43.1	µg/L	1	50.0	<0.357	86	70 - 130
n-Butylbenzene		43.5	µg/L	1	50.0	<0.125	87	70 - 130
1,2-Dibromo-3-chloropropane		39.4	µg/L	1	50.0	<0.977	79	70 - 130
1,2,3-Trichlorobenzene		35.1	µg/L	1	50.0	<0.400	70	70 - 130
1,2,4-Trichlorobenzene		39.9	µg/L	1	50.0	<0.227	80	70 - 130
Naphthalene		37.1	µg/L	1	50.0	<0.672	74	70 - 130
Hexachlorobutadiene	[12]	34.1	µg/L	1	50.0	<0.198	68	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		47.3	µg/L	1	50.0	<0.169	95	70 - 130	2	20
Dichlorodifluoromethane		42.6	µg/L	1	50.0	<0.145	85	70 - 130	6	20
Chloromethane (methyl chloride)		55.3	µg/L	1	50.0	<0.164	111	70 - 130	0	20
Vinyl Chloride		48.9	µg/L	1	50.0	<0.110	98	70 - 130	2	20
Bromomethane (methyl bromide)	[13]	93.5	µg/L	1	50.0	<0.540	187	70 - 130	18	20
Chloroethane		63.6	µg/L	1	50.0	<0.232	127	70 - 130	4	20
Trichlorofluoromethane		46.2	µg/L	1	50.0	<0.149	92	70 - 130	7	20
Acetone	[14]	27.6	µg/L	1	50.0	1.06	53	70 - 130	4	20
Iodomethane (methyl iodide)		52.9	µg/L	1	50.0	<0.104	106	70 - 130	2	20
Carbon Disulfide		47.8	µg/L	1	50.0	<0.120	96	70 - 130	6	20
Acrylonitrile		45.4	µg/L	1	50.0	<0.189	91	70 - 130	2	20
2-Butanone (MEK)	[15]	34.1	µg/L	1	50.0	<0.218	68	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)		46.9	µg/L	1	50.0	<0.554	94	70 - 130	2	20
2-Hexanone		42.6	µg/L	1	50.0	<0.863	85	70 - 130	1	20
trans 1,4-Dichloro-2-butene		40.5	µg/L	1	50.0	<0.607	81	70 - 130	1	20
1,1-Dichloroethene		47.1	µg/L	1	50.0	<0.102	94	70 - 130	6	20
Methylene chloride		47.4	µg/L	1	50.0	<0.270	95	70 - 130	0	20
MTBE		50.0	µg/L	1	50.0	<0.122	100	70 - 130	1	20
trans-1,2-Dichloroethene		47.6	µg/L	1	50.0	<0.168	95	70 - 130	4	20
1,1-Dichloroethane		50.9	µg/L	1	50.0	<0.107	102	70 - 130	3	20
cis-1,2-Dichloroethene		46.6	µg/L	1	50.0	<0.151	93	70 - 130	2	20
2,2-Dichloropropane		38.9	µg/L	1	50.0	<0.167	78	70 - 130	4	20
1,2-Dichloroethane (EDC)		48.9	µg/L	1	50.0	<0.0890	98	70 - 130	2	20
Chloroform		46.6	µg/L	1	50.0	<0.121	93	70 - 130	2	20
1,1,1-Trichloroethane		49.5	µg/L	1	50.0	<0.170	99	70 - 130	5	20
1,1-Dichloropropene		43.8	µg/L	1	50.0	<0.156	88	70 - 130	10	20
Benzene		48.6	µg/L	1	50.0	<0.113	97	70 - 130	4	20
Carbon Tetrachloride		47.8	µg/L	1	50.0	<0.0930	96	70 - 130	7	20
1,2-Dichloropropane		48.6	µg/L	1	50.0	<0.129	97	70 - 130	3	20
Trichloroethene (TCE)		40.3	µg/L	1	50.0	<0.160	81	70 - 130	4	20
Dibromomethane (methylene bromide)		39.9	µg/L	1	50.0	<0.137	80	70 - 130	2	20
Bromodichloromethane		47.9	µg/L	1	50.0	<0.107	96	70 - 130	1	20
2-Chloroethyl vinyl ether	[16]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130	0	20
cis-1,3-Dichloropropene		47.8	µg/L	1	50.0	<0.109	96	70 - 130	3	20
trans-1,3-Dichloropropene		45.5	µg/L	1	50.0	<0.181	91	70 - 130	3	20
Toluene		45.1	µg/L	1	50.0	<0.117	90	70 - 130	7	20
1,1,2-Trichloroethane		46.8	µg/L	1	50.0	<0.143	94	70 - 130	1	20
1,3-Dichloropropane		47.8	µg/L	1	50.0	<0.191	96	70 - 130	1	20
Dibromochloromethane		47.4	µg/L	1	50.0	0.247	94	70 - 130	3	20
1,2-Dibromoethane (EDB)		46.8	µg/L	1	50.0	<0.131	94	70 - 130	2	20
Tetrachloroethene (PCE)	[17]	26.0	µg/L	1	50.0	<0.353	52	70 - 130	10	20
Chlorobenzene		46.7	µg/L	1	50.0	<0.135	93	70 - 130	4	20
1,1,1,2-Tetrachloroethane		45.0	µg/L	1	50.0	<0.263	90	70 - 130	4	20

continued ...

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[14] Analyte recovery outside control limits. Results considered estimated values.
[15] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[16] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[17] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		40.7	μg/L	1	50.0	<0.174	81	70 - 130	11	20
m,p-Xylene		88.7	μg/L	1	100	<0.220	89	70 - 130	6	20
Bromoform		44.4	μg/L	1	50.0	0.928	87	70 - 130	3	20
Styrene	[18]	<0.413	μg/L	1	50.0	<0.413	0	70 - 130	0	20
o-Xylene		48.4	μg/L	1	50.0	<0.115	97	70 - 130	4	20
1,1,2,2-Tetrachloroethane		43.4	μg/L	1	50.0	<0.766	87	70 - 130	2	20
2-Chlorotoluene		40.8	μg/L	1	50.0	<0.132	82	70 - 130	10	20
1,2,3-Trichloropropane		43.6	μg/L	1	50.0	<0.599	87	70 - 130	0	20
Isopropylbenzene		43.8	μg/L	1	50.0	<0.145	88	70 - 130	8	20
Bromobenzene		43.3	μg/L	1	50.0	<0.266	87	70 - 130	6	20
n-Propylbenzene		40.5	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,3,5-Trimethylbenzene		38.2	μg/L	1	50.0	<0.124	76	70 - 130	11	20
tert-Butylbenzene		40.4	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,2,4-Trimethylbenzene	[19]	33.1	μg/L	1	50.0	<0.114	66	70 - 130	8	20
1,4-Dichlorobenzene (para)		37.1	μg/L	1	50.0	<0.230	74	70 - 130	6	20
sec-Butylbenzene		39.5	μg/L	1	50.0	<0.452	79	70 - 130	10	20
1,3-Dichlorobenzene (meta)		39.7	μg/L	1	50.0	<0.214	79	70 - 130	9	20
p-Isopropyltoluene		39.6	μg/L	1	50.0	<0.126	79	70 - 130	10	20
4-Chlorotoluene		42.5	μg/L	1	50.0	<0.161	85	70 - 130	9	20
1,2-Dichlorobenzene (ortho)		40.7	μg/L	1	50.0	<0.357	81	70 - 130	6	20
n-Butylbenzene		38.7	μg/L	1	50.0	<0.125	77	70 - 130	12	20
1,2-Dibromo-3-chloropropane		37.7	μg/L	1	50.0	<0.977	75	70 - 130	4	20
1,2,3-Trichlorobenzene	[20]	34.2	μg/L	1	50.0	<0.400	68	70 - 130	3	20
1,2,4-Trichlorobenzene		37.3	μg/L	1	50.0	<0.227	75	70 - 130	7	20
Naphthalene		36.2	μg/L	1	50.0	<0.672	72	70 - 130	2	20
Hexachlorobutadiene	[21]	30.8	μg/L	1	50.0	<0.198	62	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	49.9	50.2	μg/L	1	50	100	100	70 - 130
Toluene-d8	49.8	49.0	μg/L	1	50	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	48.9	50.0	μg/L	1	50	98	100	70 - 130

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

[18] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[19] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[20] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[21] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	48.9	98	80 - 120	2009-10-02
Dichlorodifluoromethane		µg/L	50.0	49.3	99	80 - 120	2009-10-02
Chloromethane (methyl chloride)		µg/L	50.0	55.7	111	80 - 120	2009-10-02
Vinyl Chloride		µg/L	50.0	49.6	99	80 - 120	2009-10-02
Bromomethane (methyl bromide)		µg/L	50.0	60.2	120	80 - 120	2009-10-02
Chloroethane	[22]	µg/L	50.0	61.1	122	80 - 120	2009-10-02
Trichlorofluoromethane		µg/L	50.0	51.2	102	80 - 120	2009-10-02
Acetone	[23]	µg/L	50.0	172	344	80 - 120	2009-10-02
Iodomethane (methyl iodide)		µg/L	50.0	54.3	109	80 - 120	2009-10-02
Carbon Disulfide		µg/L	50.0	51.4	103	80 - 120	2009-10-02
Acrylonitrile		µg/L	50.0	48.4	97	80 - 120	2009-10-02
2-Butanone (MEK)		µg/L	50.0	40.8	82	80 - 120	2009-10-02
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	47.8	96	80 - 120	2009-10-02
2-Hexanone		µg/L	50.0	42.3	85	80 - 120	2009-10-02
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.2	92	80 - 120	2009-10-02
1,1-Dichloroethene		µg/L	50.0	50.7	101	80 - 120	2009-10-02
Methylene chloride		µg/L	50.0	48.0	96	80 - 120	2009-10-02
MTBE		µg/L	50.0	50.6	101	80 - 120	2009-10-02
trans-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-10-02
1,1-Dichloroethane		µg/L	50.0	52.1	104	80 - 120	2009-10-02
cis-1,2-Dichloroethene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
2,2-Dichloropropane		µg/L	50.0	52.7	105	80 - 120	2009-10-02
1,2-Dichloroethane (EDC)		µg/L	50.0	49.1	98	80 - 120	2009-10-02
Chloroform		µg/L	50.0	48.1	96	80 - 120	2009-10-02
1,1,1-Trichloroethane		µg/L	50.0	53.6	107	80 - 120	2009-10-02
1,1-Dichloropropene		µg/L	50.0	46.8	94	80 - 120	2009-10-02
Benzene		µg/L	50.0	50.5	101	80 - 120	2009-10-02
Carbon Tetrachloride		µg/L	50.0	53.1	106	80 - 120	2009-10-02
1,2-Dichloropropane		µg/L	50.0	50.4	101	80 - 120	2009-10-02
Trichloroethene (TCE)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
Dibromomethane (methylene bromide)		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Bromodichloromethane		µg/L	50.0	49.0	98	80 - 120	2009-10-02

continued ...

[22] Analyte recovery outside CCV control limits. Concentration biased high. •
[23] Analyte recovery outside CCV control limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Chloroethyl vinyl ether		µg/L	50.0	40.7	81	80 - 120	2009-10-02
cis-1,3-Dichloropropene		µg/L	50.0	51.4	103	80 - 120	2009-10-02
trans-1,3-Dichloropropene		µg/L	50.0	47.6	95	80 - 120	2009-10-02
Toluene		µg/L	50.0	46.6	93	80 - 120	2009-10-02
1,1,2-Trichloroethane		µg/L	50.0	46.4	93	80 - 120	2009-10-02
1,3-Dichloropropane		µg/L	50.0	46.2	92	80 - 120	2009-10-02
Dibromochloromethane		µg/L	50.0	47.4	95	80 - 120	2009-10-02
1,2-Dibromoethane (EDB)		µg/L	50.0	46.4	93	80 - 120	2009-10-02
Tetrachloroethene (PCE)	[24]	µg/L	50.0	29.4	59	80 - 120	2009-10-02
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
1,1,1,2-Tetrachloroethane		µg/L	50.0	45.6	91	80 - 120	2009-10-02
Ethylbenzene		µg/L	50.0	44.6	89	80 - 120	2009-10-02
m,p-Xylene		µg/L	100	93.1	93	80 - 120	2009-10-02
Bromoform		µg/L	50.0	45.0	90	80 - 120	2009-10-02
Styrene		µg/L	50.0	48.4	97	80 - 120	2009-10-02
o-Xylene		µg/L	50.0	45.6	91	80 - 120	2009-10-02
1,1,2,2-Tetrachloroethane		µg/L	50.0	44.3	89	80 - 120	2009-10-02
2-Chlorotoluene		µg/L	50.0	44.8	90	80 - 120	2009-10-02
1,2,3-Trichloropropane		µg/L	50.0	43.0	86	80 - 120	2009-10-02
Isopropylbenzene		µg/L	50.0	47.0	94	80 - 120	2009-10-02
Bromobenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
n-Propylbenzene		µg/L	50.0	44.9	90	80 - 120	2009-10-02
1,3,5-Trimethylbenzene		µg/L	50.0	44.4	89	80 - 120	2009-10-02
tert-Butylbenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
1,2,4-Trimethylbenzene	[25]	µg/L	50.0	37.8	76	80 - 120	2009-10-02
1,4-Dichlorobenzene (para)		µg/L	50.0	40.9	82	80 - 120	2009-10-02
sec-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,3-Dichlorobenzene (meta)		µg/L	50.0	43.6	87	80 - 120	2009-10-02
p-Isopropyltoluene		µg/L	50.0	44.5	89	80 - 120	2009-10-02
4-Chlorotoluene		µg/L	50.0	45.1	90	80 - 120	2009-10-02
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
n-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,2-Dibromo-3-chloropropane		µg/L	50.0	40.0	80	80 - 120	2009-10-02
1,2,3-Trichlorobenzene	[26]	µg/L	50.0	37.7	75	80 - 120	2009-10-02
1,2,4-Trichlorobenzene		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Naphthalene	[27]	µg/L	50.0	38.1	76	80 - 120	2009-10-02
Hexachlorobutadiene	[28]	µg/L	50.0	38.8	78	80 - 120	2009-10-02

[24] Analyte recovery outside CCV control limits. Concentration biased low. •
[25] Analyte recovery outside CCV control limits. Concentration biased low. •
[26] Analyte recovery outside CCV control limits. Concentration biased low. •
[27] Analyte recovery outside CCV control limits. Concentration biased low. •
[28] Analyte recovery outside CCV control limits. Concentration biased low. •

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9093020

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CHAIN OF CUSTODY RECORD

PROJECT NO: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO. OF CONTAINERS	VOC	GRO								REMARKS
9-28-09	1315	HTSA-0197-HVW-004-0909	Water	211159	6	X	X								

ANALYSES REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	intact	(PRINTED NAME): GABRIEL GARCIA	(PRINTED NAME):	(PRINTED NAME): Carol FOX
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY): Trace
	GOOD CONDITION/COOLED	1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE): 9-30-09 8:30 AM
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		Fed Ex 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 6, 2009

Work Order: 9093013

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211152	HTSA-0197-HVW-005-0909	water	2009-09-24	10:05	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093013. Samples for work order 9093013 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54774	2009-10-02 at 12:00	64142	2009-10-02 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093013 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211152 - HTSA-0197-HVW-005-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**142**	**142**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		10.1	mg/L	100	10.0	101	70.8 - 112
4-Bromofluorobenzene (4-BFB)	[1]	11.0	mg/L	100	10.0	110	80 - 109

Sample: 211152 - HTSA-0197-HVW-005-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64142	Date Analyzed:	2009-10-02	Analyzed By:	JG
Prep Batch:	54774	Sample Preparation:	2009-10-02	Prepared By:	JG

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	J	**260**	<500	<61.0	μg/L	500	61.0	1	0.122
Benzene		**23400**	**23400**	<56.5	μg/L	500	56.5	1	0.113
Toluene		**54900**	**54900**	<58.5	μg/L	500	58.5	1	0.117
Ethylbenzene		**6430**	**6430**	<87.0	μg/L	500	87.0	1	0.174
m,p-Xylene		**11800**	**11800**	<110	μg/L	500	110	1	0.22
o-Xylene		**6080**	**6080**	<57.5	μg/L	500	57.5	1	0.115
n-Propylbenzene	J	**344**	<500	<68.0	μg/L	500	68.0	1	0.136
1,3,5-Trimethylbenzene	J	**428**	<500	<62.0	μg/L	500	62.0	1	0.124
1,2,4-Trimethylbenzene	[2]	**2180**	**2180**	<57.0	μg/L	500	57.0	1	0.114
Naphthalene	[3] J	**377**	<2500	<336	μg/L	500	336	5	0.672

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		25800	μg/L	1	25000	103	70 - 130
Toluene-d8		24400	μg/L	1	25000	98	70 - 130
4-Bromofluorobenzene (4-BFB)		24600	μg/L	1	25000	98	70 - 130

[1] High surrogate recovery due to peak interference.
[2] Concentration biased low.
[3] Concentration biased low.

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.169	µg/L	0.169
Dichlorodifluoromethane		<0.145	µg/L	0.145
Chloromethane (methyl chloride)		<0.164	µg/L	0.164
Vinyl Chloride		<0.110	µg/L	0.11
Bromomethane (methyl bromide)		<0.540	µg/L	0.54
Chloroethane		<0.232	µg/L	0.232
Trichlorofluoromethane		<0.149	µg/L	0.149
Acetone		<0.893	µg/L	0.893
Iodomethane (methyl iodide)		<0.104	µg/L	0.104
Carbon Disulfide		<0.120	µg/L	0.12
Acrylonitrile		<0.189	µg/L	0.189
2-Butanone (MEK)		2.44	µg/L	0.218
4-Methyl-2-pentanone (MIBK)		<0.554	µg/L	0.554
2-Hexanone		<0.863	µg/L	0.863
trans 1,4-Dichloro-2-butene		<0.607	µg/L	0.607
1,1-Dichloroethene		<0.102	µg/L	0.102
Methylene chloride		<0.270	µg/L	0.27
MTBE		<0.122	µg/L	0.122
trans-1,2-Dichloroethene		<0.168	µg/L	0.168
1,1-Dichloroethane		<0.107	µg/L	0.107
cis-1,2-Dichloroethene		<0.151	µg/L	0.151
2,2-Dichloropropane		<0.167	µg/L	0.167
1,2-Dichloroethane (EDC)		<0.0890	µg/L	0.089
Chloroform		<0.121	µg/L	0.121
1,1,1-Trichloroethane		<0.170	µg/L	0.17
1,1-Dichloropropene		<0.156	µg/L	0.156
Benzene		<0.113	µg/L	0.113
Carbon Tetrachloride		<0.0930	µg/L	0.093

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.129	μg/L	0.129
Trichloroethene (TCE)		<0.160	μg/L	0.16
Dibromomethane (methylene bromide)		<0.137	μg/L	0.137
Bromodichloromethane		<0.107	μg/L	0.107
2-Chloroethyl vinyl ether		<0.257	μg/L	0.257
cis-1,3-Dichloropropene		<0.109	μg/L	0.109
trans-1,3-Dichloropropene		<0.181	μg/L	0.181
Toluene		<0.117	μg/L	0.117
1,1,2-Trichloroethane		<0.143	μg/L	0.143
1,3-Dichloropropane		<0.191	μg/L	0.191
Dibromochloromethane		<0.118	μg/L	0.118
1,2-Dibromoethane (EDB)		<0.131	μg/L	0.131
Tetrachloroethene (PCE)		<0.353	μg/L	0.353
Chlorobenzene		<0.135	μg/L	0.135
1,1,1,2-Tetrachloroethane		<0.263	μg/L	0.263
Ethylbenzene		<0.174	μg/L	0.174
m,p-Xylene		<0.220	μg/L	0.22
Bromoform		<0.385	μg/L	0.385
Styrene		<0.413	μg/L	0.413
o-Xylene		<0.115	μg/L	0.115
1,1,2,2-Tetrachloroethane		<0.766	μg/L	0.766
2-Chlorotoluene		<0.132	μg/L	0.132
1,2,3-Trichloropropane		<0.599	μg/L	0.599
Isopropylbenzene		<0.145	μg/L	0.145
Bromobenzene		<0.266	μg/L	0.266
n-Propylbenzene		<0.136	μg/L	0.136
1,3,5-Trimethylbenzene		<0.124	μg/L	0.124
tert-Butylbenzene		<0.136	μg/L	0.136
1,2,4-Trimethylbenzene		<0.114	μg/L	0.114
1,4-Dichlorobenzene (para)		<0.230	μg/L	0.23
sec-Butylbenzene		<0.452	μg/L	0.452
1,3-Dichlorobenzene (meta)		<0.214	μg/L	0.214
p-Isopropyltoluene		<0.126	μg/L	0.126
4-Chlorotoluene		<0.161	μg/L	0.161
1,2-Dichlorobenzene (ortho)		<0.357	μg/L	0.357
n-Butylbenzene		<0.125	μg/L	0.125
1,2-Dibromo-3-chloropropane		<0.977	μg/L	0.977
1,2,3-Trichlorobenzene		<0.400	μg/L	0.4
1,2,4-Trichlorobenzene		<0.227	μg/L	0.227
Naphthalene		<0.672	μg/L	0.672
Hexachlorobutadiene		<0.198	μg/L	0.198

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	μg/L	1	50.0	100	70 - 130
Toluene-d8		48.4	μg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		50.2	μg/L	1	50.0	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		49.7	µg/L	1	50.0	<0.169	99	70 - 130
Dichlorodifluoromethane		53.9	µg/L	1	50.0	<0.145	108	70 - 130
Chloromethane (methyl chloride)		56.9	µg/L	1	50.0	<0.164	114	70 - 130
Vinyl Chloride		51.3	µg/L	1	50.0	<0.110	103	70 - 130
Bromomethane (methyl bromide)		65.2	µg/L	1	50.0	<0.540	130	70 - 130
Chloroethane		64.4	µg/L	1	50.0	<0.232	129	70 - 130
Trichlorofluoromethane		52.2	µg/L	1	50.0	<0.149	104	70 - 130
Acetone	[4]	186	µg/L	1	50.0	<0.893	372	70 - 130
Iodomethane (methyl iodide)		54.2	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		52.7	µg/L	1	50.0	<0.120	105	70 - 130
Acrylonitrile		48.5	µg/L	1	50.0	<0.189	97	70 - 130
2-Butanone (MEK)		42.5	µg/L	1	50.0	2.44	85	70 - 130
4-Methyl-2-pentanone (MIBK)		50.4	µg/L	1	50.0	<0.554	101	70 - 130
2-Hexanone		45.0	µg/L	1	50.0	<0.863	90	70 - 130
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.607	89	70 - 130
1,1-Dichloroethene		51.4	µg/L	1	50.0	<0.102	103	70 - 130
Methylene chloride		48.9	µg/L	1	50.0	<0.270	98	70 - 130
MTBE		51.2	µg/L	1	50.0	<0.122	102	70 - 130
trans-1,2-Dichloroethene		50.6	µg/L	1	50.0	<0.168	101	70 - 130
1,1-Dichloroethane		53.3	µg/L	1	50.0	<0.107	107	70 - 130

continued ...

[4] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.2	μg/L	1	50.0	<0.151	98	70 - 130
2,2-Dichloropropane	49.6	μg/L	1	50.0	<0.167	99	70 - 130
1,2-Dichloroethane (EDC)	50.4	μg/L	1	50.0	<0.0890	101	70 - 130
Chloroform	49.3	μg/L	1	50.0	<0.121	99	70 - 130
1,1,1-Trichloroethane	53.1	μg/L	1	50.0	<0.170	106	70 - 130
1,1-Dichloropropene	51.7	μg/L	1	50.0	<0.156	103	70 - 130
Benzene	50.9	μg/L	1	50.0	<0.113	102	70 - 130
Carbon Tetrachloride	53.7	μg/L	1	50.0	<0.0930	107	70 - 130
1,2-Dichloropropane	50.0	μg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)	45.4	μg/L	1	50.0	<0.160	91	70 - 130
Dibromomethane (methylene bromide)	42.6	μg/L	1	50.0	<0.137	85	70 - 130
Bromodichloromethane	49.3	μg/L	1	50.0	<0.107	99	70 - 130
2-Chloroethyl vinyl ether	42.9	μg/L	1	50.0	<0.257	86	70 - 130
cis-1,3-Dichloropropene	51.0	μg/L	1	50.0	<0.109	102	70 - 130
trans-1,3-Dichloropropene	49.4	μg/L	1	50.0	<0.181	99	70 - 130
Toluene	47.5	μg/L	1	50.0	<0.117	95	70 - 130
1,1,2-Trichloroethane	48.1	μg/L	1	50.0	<0.143	96	70 - 130
1,3-Dichloropropane	48.2	μg/L	1	50.0	<0.191	96	70 - 130
Dibromochloromethane	48.7	μg/L	1	50.0	<0.118	97	70 - 130
1,2-Dibromoethane (EDB)	47.0	μg/L	1	50.0	<0.131	94	70 - 130
Tetrachloroethene (PCE)	39.6	μg/L	1	50.0	<0.353	79	70 - 130
Chlorobenzene	48.8	μg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane	45.4	μg/L	1	50.0	<0.263	91	70 - 130
Ethylbenzene	45.2	μg/L	1	50.0	<0.174	90	70 - 130
m,p-Xylene	93.6	μg/L	1	100	<0.220	94	70 - 130
Bromoform	46.3	μg/L	1	50.0	<0.385	93	70 - 130
Styrene	50.3	μg/L	1	50.0	<0.413	101	70 - 130
o-Xylene	46.5	μg/L	1	50.0	<0.115	93	70 - 130
1,1,2,2-Tetrachloroethane	43.7	μg/L	1	50.0	<0.766	87	70 - 130
2-Chlorotoluene	43.6	μg/L	1	50.0	<0.132	87	70 - 130
1,2,3-Trichloropropane	45.6	μg/L	1	50.0	<0.599	91	70 - 130
Isopropylbenzene	47.2	μg/L	1	50.0	<0.145	94	70 - 130
Bromobenzene	44.4	μg/L	1	50.0	<0.266	89	70 - 130
n-Propylbenzene	44.4	μg/L	1	50.0	<0.136	89	70 - 130
1,3,5-Trimethylbenzene	43.3	μg/L	1	50.0	<0.124	87	70 - 130
tert-Butylbenzene	44.9	μg/L	1	50.0	<0.136	90	70 - 130
1,2,4-Trimethylbenzene	39.8	μg/L	1	50.0	<0.114	80	70 - 130
1,4-Dichlorobenzene (para)	40.0	μg/L	1	50.0	<0.230	80	70 - 130
sec-Butylbenzene	44.3	μg/L	1	50.0	<0.452	89	70 - 130
1,3-Dichlorobenzene (meta)	42.2	μg/L	1	50.0	<0.214	84	70 - 130
p-Isopropyltoluene	44.2	μg/L	1	50.0	<0.126	88	70 - 130
4-Chlorotoluene	44.9	μg/L	1	50.0	<0.161	90	70 - 130
1,2-Dichlorobenzene (ortho)	44.0	μg/L	1	50.0	<0.357	88	70 - 130
n-Butylbenzene	43.8	μg/L	1	50.0	<0.125	88	70 - 130
1,2-Dibromo-3-chloropropane	40.1	μg/L	1	50.0	<0.977	80	70 - 130
1,2,3-Trichlorobenzene	38.2	μg/L	1	50.0	<0.400	76	70 - 130
1,2,4-Trichlorobenzene	41.5	μg/L	1	50.0	<0.227	83	70 - 130

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	39.3	µg/L	1	50.0	<0.672	79	70 - 130
Hexachlorobutadiene	38.6	µg/L	1	50.0	<0.198	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		49.2	µg/L	1	50.0	<0.169	98	70 - 130	1	20
Dichlorodifluoromethane		54.6	µg/L	1	50.0	<0.145	109	70 - 130	1	20
Chloromethane (methyl chloride)		58.1	µg/L	1	50.0	<0.164	116	70 - 130	2	20
Vinyl Chloride		51.8	µg/L	1	50.0	<0.110	104	70 - 130	1	20
Bromomethane (methyl bromide)		62.4	µg/L	1	50.0	<0.540	125	70 - 130	4	20
Chloroethane	[5]	65.9	µg/L	1	50.0	<0.232	132	70 - 130	2	20
Trichlorofluoromethane		53.0	µg/L	1	50.0	<0.149	106	70 - 130	2	20
Acetone	[6]	193	µg/L	1	50.0	<0.893	386	70 - 130	4	20
Iodomethane (methyl iodide)		53.7	µg/L	1	50.0	<0.104	107	70 - 130	1	20
Carbon Disulfide		52.3	µg/L	1	50.0	<0.120	105	70 - 130	1	20
Acrylonitrile		48.5	µg/L	1	50.0	<0.189	97	70 - 130	0	20
2-Butanone (MEK)		44.0	µg/L	1	50.0	2.44	88	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)		50.1	µg/L	1	50.0	<0.554	100	70 - 130	1	20
2-Hexanone		46.6	µg/L	1	50.0	<0.863	93	70 - 130	4	20
trans 1,4-Dichloro-2-butene		46.8	µg/L	1	50.0	<0.607	94	70 - 130	5	20
1,1-Dichloroethene		51.5	µg/L	1	50.0	<0.102	103	70 - 130	0	20
Methylene chloride		48.2	µg/L	1	50.0	<0.270	96	70 - 130	1	20
MTBE		50.8	µg/L	1	50.0	<0.122	102	70 - 130	1	20
trans-1,2-Dichloroethene		50.1	µg/L	1	50.0	<0.168	100	70 - 130	1	20
1,1-Dichloroethane		52.7	µg/L	1	50.0	<0.107	105	70 - 130	1	20
cis-1,2-Dichloroethene		49.1	µg/L	1	50.0	<0.151	98	70 - 130	0	20
2,2-Dichloropropane		49.4	µg/L	1	50.0	<0.167	99	70 - 130	0	20
1,2-Dichloroethane (EDC)		50.6	µg/L	1	50.0	<0.0890	101	70 - 130	0	20
Chloroform		48.7	µg/L	1	50.0	<0.121	97	70 - 130	1	20
1,1,1-Trichloroethane		53.4	µg/L	1	50.0	<0.170	107	70 - 130	1	20
1,1-Dichloropropene		51.7	µg/L	1	50.0	<0.156	103	70 - 130	0	20
Benzene		51.5	µg/L	1	50.0	<0.113	103	70 - 130	1	20
Carbon Tetrachloride		54.2	µg/L	1	50.0	<0.0930	108	70 - 130	1	20
1,2-Dichloropropane		51.1	µg/L	1	50.0	<0.129	102	70 - 130	2	20
Trichloroethene (TCE)		46.1	µg/L	1	50.0	<0.160	92	70 - 130	2	20
Dibromomethane (methylene bromide)		42.5	µg/L	1	50.0	<0.137	85	70 - 130	0	20
Bromodichloromethane		50.1	µg/L	1	50.0	<0.107	100	70 - 130	2	20
2-Chloroethyl vinyl ether		43.6	µg/L	1	50.0	<0.257	87	70 - 130	2	20
cis-1,3-Dichloropropene		51.5	µg/L	1	50.0	<0.109	103	70 - 130	1	20
trans-1,3-Dichloropropene		49.2	µg/L	1	50.0	<0.181	98	70 - 130	0	20
Toluene		48.0	µg/L	1	50.0	<0.117	96	70 - 130	1	20
1,1,2-Trichloroethane		47.5	µg/L	1	50.0	<0.143	95	70 - 130	1	20
1,3-Dichloropropane		49.0	µg/L	1	50.0	<0.191	98	70 - 130	2	20
Dibromochloromethane		49.3	µg/L	1	50.0	<0.118	99	70 - 130	1	20

continued ...

[5] Analyte recovery outside control limits. Concentration biased high. •
[6] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2-Dibromoethane (EDB)	48.0	μg/L	1	50.0	<0.131	96	70 - 130	2	20
Tetrachloroethene (PCE)	46.5	μg/L	1	50.0	<0.353	93	70 - 130	16	20
Chlorobenzene	50.1	μg/L	1	50.0	<0.135	100	70 - 130	3	20
1,1,1,2-Tetrachloroethane	46.5	μg/L	1	50.0	<0.263	93	70 - 130	2	20
Ethylbenzene	45.4	μg/L	1	50.0	<0.174	91	70 - 130	0	20
m,p-Xylene	96.6	μg/L	1	100	<0.220	97	70 - 130	3	20
Bromoform	46.1	μg/L	1	50.0	<0.385	92	70 - 130	0	20
Styrene	50.6	μg/L	1	50.0	<0.413	101	70 - 130	1	20
o-Xylene	46.6	μg/L	1	50.0	<0.115	93	70 - 130	0	20
1,1,2,2-Tetrachloroethane	44.1	μg/L	1	50.0	<0.766	88	70 - 130	1	20
2-Chlorotoluene	43.9	μg/L	1	50.0	<0.132	88	70 - 130	1	20
1,2,3-Trichloropropane	45.8	μg/L	1	50.0	<0.599	92	70 - 130	0	20
Isopropylbenzene	48.9	μg/L	1	50.0	<0.145	98	70 - 130	4	20
Bromobenzene	45.4	μg/L	1	50.0	<0.266	91	70 - 130	2	20
n-Propylbenzene	45.1	μg/L	1	50.0	<0.136	90	70 - 130	2	20
1,3,5-Trimethylbenzene	44.2	μg/L	1	50.0	<0.124	88	70 - 130	2	20
tert-Butylbenzene	45.8	μg/L	1	50.0	<0.136	92	70 - 130	2	20
1,2,4-Trimethylbenzene	42.8	μg/L	1	50.0	<0.114	86	70 - 130	7	20
1,4-Dichlorobenzene (para)	39.9	μg/L	1	50.0	<0.230	80	70 - 130	0	20
sec-Butylbenzene	44.6	μg/L	1	50.0	<0.452	89	70 - 130	1	20
1,3-Dichlorobenzene (meta)	42.7	μg/L	1	50.0	<0.214	85	70 - 130	1	20
p-Isopropyltoluene	44.0	μg/L	1	50.0	<0.126	88	70 - 130	0	20
4-Chlorotoluene	45.8	μg/L	1	50.0	<0.161	92	70 - 130	2	20
1,2-Dichlorobenzene (ortho)	43.8	μg/L	1	50.0	<0.357	88	70 - 130	0	20
n-Butylbenzene	45.0	μg/L	1	50.0	<0.125	90	70 - 130	3	20
1,2-Dibromo-3-chloropropane	39.9	μg/L	1	50.0	<0.977	80	70 - 130	0	20
1,2,3-Trichlorobenzene	38.5	μg/L	1	50.0	<0.400	77	70 - 130	1	20
1,2,4-Trichlorobenzene	42.1	μg/L	1	50.0	<0.227	84	70 - 130	1	20
Naphthalene	39.2	μg/L	1	50.0	<0.672	78	70 - 130	0	20
Hexachlorobutadiene	39.1	μg/L	1	50.0	<0.198	78	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.3	50.3	μg/L	1	50.0	103	101	70 - 130
Toluene-d8	48.6	49.2	μg/L	1	50.0	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	49.8	50.3	μg/L	1	50.0	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211362

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		48.5	µg/L	1	50.0	<0.169	97	70 - 130
Dichlorodifluoromethane		45.4	µg/L	1	50.0	<0.145	91	70 - 130
Chloromethane (methyl chloride)		55.4	µg/L	1	50.0	<0.164	111	70 - 130
Vinyl Chloride		50.1	µg/L	1	50.0	<0.110	100	70 - 130
Bromomethane (methyl bromide)	[7]	112	µg/L	1	50.0	<0.540	224	70 - 130
Chloroethane	[8]	66.2	µg/L	1	50.0	<0.232	132	70 - 130
Trichlorofluoromethane		49.4	µg/L	1	50.0	<0.149	99	70 - 130
Acetone	[9]	28.7	µg/L	1	50.0	1.06	55	70 - 130
Iodomethane (methyl iodide)		53.9	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		50.8	µg/L	1	50.0	<0.120	102	70 - 130
Acrylonitrile		46.4	µg/L	1	50.0	<0.189	93	70 - 130
2-Butanone (MEK)		34.9	µg/L	1	50.0	<0.218	70	70 - 130
4-Methyl-2-pentanone (MIBK)		48.1	µg/L	1	50.0	<0.554	96	70 - 130
2-Hexanone		42.3	µg/L	1	50.0	<0.863	85	70 - 130
trans 1,4-Dichloro-2-butene		41.0	µg/L	1	50.0	<0.607	82	70 - 130
1,1-Dichloroethene		50.2	µg/L	1	50.0	<0.102	100	70 - 130
Methylene chloride		47.3	µg/L	1	50.0	<0.270	95	70 - 130
MTBE		50.6	µg/L	1	50.0	<0.122	101	70 - 130
trans-1,2-Dichloroethene		49.4	µg/L	1	50.0	<0.168	99	70 - 130
1,1-Dichloroethane		52.4	µg/L	1	50.0	<0.107	105	70 - 130
cis-1,2-Dichloroethene		47.8	µg/L	1	50.0	<0.151	96	70 - 130
2,2-Dichloropropane		40.6	µg/L	1	50.0	<0.167	81	70 - 130
1,2-Dichloroethane (EDC)		49.8	µg/L	1	50.0	<0.0890	100	70 - 130
Chloroform		47.8	µg/L	1	50.0	<0.121	96	70 - 130
1,1,1-Trichloroethane		52.0	µg/L	1	50.0	<0.170	104	70 - 130
1,1-Dichloropropene		48.5	µg/L	1	50.0	<0.156	97	70 - 130
Benzene		50.6	µg/L	1	50.0	<0.113	101	70 - 130

continued ...

[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[8] Analyte recovery outside control limits. Concentration biased high.
[9] Analyte recovery outside control limits. Results considered estimated values.

matrix spikes continued . . .

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Carbon Tetrachloride		51.5	µg/L	1	50.0	<0.0930	103	70 - 130
1,2-Dichloropropane		50.2	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)		41.8	µg/L	1	50.0	<0.160	84	70 - 130
Dibromomethane (methylene bromide)		40.7	µg/L	1	50.0	<0.137	81	70 - 130
Bromodichloromethane		48.5	µg/L	1	50.0	<0.107	97	70 - 130
2-Chloroethyl vinyl ether	[10]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130
cis-1,3-Dichloropropene		49.3	µg/L	1	50.0	<0.109	99	70 - 130
trans-1,3-Dichloropropene		46.9	µg/L	1	50.0	<0.181	94	70 - 130
Toluene		48.2	µg/L	1	50.0	<0.117	96	70 - 130
1,1,2-Trichloroethane		47.3	µg/L	1	50.0	<0.143	95	70 - 130
1,3-Dichloropropane		48.3	µg/L	1	50.0	<0.191	97	70 - 130
Dibromochloromethane		48.8	µg/L	1	50.0	0.247	97	70 - 130
1,2-Dibromoethane (EDB)		48.0	µg/L	1	50.0	<0.131	96	70 - 130
Tetrachloroethene (PCE)	[11]	28.7	µg/L	1	50.0	<0.353	57	70 - 130
Chlorobenzene		48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane		46.7	µg/L	1	50.0	<0.263	93	70 - 130
Ethylbenzene		45.3	µg/L	1	50.0	<0.174	91	70 - 130
m,p-Xylene		94.6	µg/L	1	100	<0.220	95	70 - 130
Bromoform		45.6	µg/L	1	50.0	0.928	89	70 - 130
Styrene	[12]	<0.413	µg/L	1	50.0	<0.413	0	70 - 130
o-Xylene		50.4	µg/L	1	50.0	<0.115	101	70 - 130
1,1,2,2-Tetrachloroethane		44.3	µg/L	1	50.0	<0.766	89	70 - 130
2-Chlorotoluene		45.1	µg/L	1	50.0	<0.132	90	70 - 130
1,2,3-Trichloropropane		43.8	µg/L	1	50.0	<0.599	88	70 - 130
Isopropylbenzene		47.4	µg/L	1	50.0	<0.145	95	70 - 130
Bromobenzene		46.1	µg/L	1	50.0	<0.266	92	70 - 130
n-Propylbenzene		45.0	µg/L	1	50.0	<0.136	90	70 - 130
1,3,5-Trimethylbenzene		42.6	µg/L	1	50.0	<0.124	85	70 - 130
tert-Butylbenzene		44.6	µg/L	1	50.0	<0.136	89	70 - 130
1,2,4-Trimethylbenzene		35.9	µg/L	1	50.0	<0.114	72	70 - 130
1,4-Dichlorobenzene (para)		39.6	µg/L	1	50.0	<0.230	79	70 - 130
sec-Butylbenzene		43.8	µg/L	1	50.0	<0.452	88	70 - 130
1,3-Dichlorobenzene (meta)		43.3	µg/L	1	50.0	<0.214	87	70 - 130
p-Isopropyltoluene		43.6	µg/L	1	50.0	<0.126	87	70 - 130
4-Chlorotoluene		46.3	µg/L	1	50.0	<0.161	93	70 - 130
1,2-Dichlorobenzene (ortho)		43.1	µg/L	1	50.0	<0.357	86	70 - 130
n-Butylbenzene		43.5	µg/L	1	50.0	<0.125	87	70 - 130
1,2-Dibromo-3-chloropropane		39.4	µg/L	1	50.0	<0.977	79	70 - 130
1,2,3-Trichlorobenzene		35.1	µg/L	1	50.0	<0.400	70	70 - 130
1,2,4-Trichlorobenzene		39.9	µg/L	1	50.0	<0.227	80	70 - 130
Naphthalene		37.1	µg/L	1	50.0	<0.672	74	70 - 130
Hexachlorobutadiene	[13]	34.1	µg/L	1	50.0	<0.198	68	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		47.3	µg/L	1	50.0	<0.169	95	70 - 130	2	20
Dichlorodifluoromethane		42.6	µg/L	1	50.0	<0.145	85	70 - 130	6	20
Chloromethane (methyl chloride)		55.3	µg/L	1	50.0	<0.164	111	70 - 130	0	20
Vinyl Chloride		48.9	µg/L	1	50.0	<0.110	98	70 - 130	2	20
Bromomethane (methyl bromide)	[14]	93.5	µg/L	1	50.0	<0.540	187	70 - 130	18	20
Chloroethane		63.6	µg/L	1	50.0	<0.232	127	70 - 130	4	20
Trichlorofluoromethane		46.2	µg/L	1	50.0	<0.149	92	70 - 130	7	20
Acetone	[15]	27.6	µg/L	1	50.0	1.06	53	70 - 130	4	20
Iodomethane (methyl iodide)		52.9	µg/L	1	50.0	<0.104	106	70 - 130	2	20
Carbon Disulfide		47.8	µg/L	1	50.0	<0.120	96	70 - 130	6	20
Acrylonitrile		45.4	µg/L	1	50.0	<0.189	91	70 - 130	2	20
2-Butanone (MEK)	[16]	34.1	µg/L	1	50.0	<0.218	68	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)		46.9	µg/L	1	50.0	<0.554	94	70 - 130	2	20
2-Hexanone		42.6	µg/L	1	50.0	<0.863	85	70 - 130	1	20
trans 1,4-Dichloro-2-butene		40.5	µg/L	1	50.0	<0.607	81	70 - 130	1	20
1,1-Dichloroethene		47.1	µg/L	1	50.0	<0.102	94	70 - 130	6	20
Methylene chloride		47.4	µg/L	1	50.0	<0.270	95	70 - 130	0	20
MTBE		50.0	µg/L	1	50.0	<0.122	100	70 - 130	1	20
trans-1,2-Dichloroethene		47.6	µg/L	1	50.0	<0.168	95	70 - 130	4	20
1,1-Dichloroethane		50.9	µg/L	1	50.0	<0.107	102	70 - 130	3	20
cis-1,2-Dichloroethene		46.6	µg/L	1	50.0	<0.151	93	70 - 130	2	20
2,2-Dichloropropane		38.9	µg/L	1	50.0	<0.167	78	70 - 130	4	20
1,2-Dichloroethane (EDC)		48.9	µg/L	1	50.0	<0.0890	98	70 - 130	2	20
Chloroform		46.6	µg/L	1	50.0	<0.121	93	70 - 130	2	20
1,1,1-Trichloroethane		49.5	µg/L	1	50.0	<0.170	99	70 - 130	5	20
1,1-Dichloropropene		43.8	µg/L	1	50.0	<0.156	88	70 - 130	10	20
Benzene		48.6	µg/L	1	50.0	<0.113	97	70 - 130	4	20
Carbon Tetrachloride		47.8	µg/L	1	50.0	<0.0930	96	70 - 130	7	20
1,2-Dichloropropane		48.6	µg/L	1	50.0	<0.129	97	70 - 130	3	20
Trichloroethene (TCE)		40.3	µg/L	1	50.0	<0.160	81	70 - 130	4	20
Dibromomethane (methylene bromide)		39.9	µg/L	1	50.0	<0.137	80	70 - 130	2	20
Bromodichloromethane		47.9	µg/L	1	50.0	<0.107	96	70 - 130	1	20
2-Chloroethyl vinyl ether	[17]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130	0	20
cis-1,3-Dichloropropene		47.8	µg/L	1	50.0	<0.109	96	70 - 130	3	20
trans-1,3-Dichloropropene		45.5	µg/L	1	50.0	<0.181	91	70 - 130	3	20
Toluene		45.1	µg/L	1	50.0	<0.117	90	70 - 130	7	20
1,1,2-Trichloroethane		46.8	µg/L	1	50.0	<0.143	94	70 - 130	1	20
1,3-Dichloropropane		47.8	µg/L	1	50.0	<0.191	96	70 - 130	1	20
Dibromochloromethane		47.4	µg/L	1	50.0	0.247	94	70 - 130	3	20
1,2-Dibromoethane (EDB)		46.8	µg/L	1	50.0	<0.131	94	70 - 130	2	20
Tetrachloroethene (PCE)	[18]	26.0	µg/L	1	50.0	<0.353	52	70 - 130	10	20
Chlorobenzene		46.7	µg/L	1	50.0	<0.135	93	70 - 130	4	20
1,1,1,2-Tetrachloroethane		45.0	µg/L	1	50.0	<0.263	90	70 - 130	4	20

continued ...

[14] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[15] Analyte recovery outside control limits. Results considered estimated values.
[16] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[17] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[18] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		40.7	μg/L	1	50.0	<0.174	81	70 - 130	11	20
m,p-Xylene		88.7	μg/L	1	100	<0.220	89	70 - 130	6	20
Bromoform		44.4	μg/L	1	50.0	0.928	87	70 - 130	3	20
Styrene	[19]	<0.413	μg/L	1	50.0	<0.413	0	70 - 130	0	20
o-Xylene		48.4	μg/L	1	50.0	<0.115	97	70 - 130	4	20
1,1,2,2-Tetrachloroethane		43.4	μg/L	1	50.0	<0.766	87	70 - 130	2	20
2-Chlorotoluene		40.8	μg/L	1	50.0	<0.132	82	70 - 130	10	20
1,2,3-Trichloropropane		43.6	μg/L	1	50.0	<0.599	87	70 - 130	0	20
Isopropylbenzene		43.8	μg/L	1	50.0	<0.145	88	70 - 130	8	20
Bromobenzene		43.3	μg/L	1	50.0	<0.266	87	70 - 130	6	20
n-Propylbenzene		40.5	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,3,5-Trimethylbenzene		38.2	μg/L	1	50.0	<0.124	76	70 - 130	11	20
tert-Butylbenzene		40.4	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,2,4-Trimethylbenzene	[20]	33.1	μg/L	1	50.0	<0.114	66	70 - 130	8	20
1,4-Dichlorobenzene (para)		37.1	μg/L	1	50.0	<0.230	74	70 - 130	6	20
sec-Butylbenzene		39.5	μg/L	1	50.0	<0.452	79	70 - 130	10	20
1,3-Dichlorobenzene (meta)		39.7	μg/L	1	50.0	<0.214	79	70 - 130	9	20
p-Isopropyltoluene		39.6	μg/L	1	50.0	<0.126	79	70 - 130	10	20
4-Chlorotoluene		42.5	μg/L	1	50.0	<0.161	85	70 - 130	9	20
1,2-Dichlorobenzene (ortho)		40.7	μg/L	1	50.0	<0.357	81	70 - 130	6	20
n-Butylbenzene		38.7	μg/L	1	50.0	<0.125	77	70 - 130	12	20
1,2-Dibromo-3-chloropropane		37.7	μg/L	1	50.0	<0.977	75	70 - 130	4	20
1,2,3-Trichlorobenzene	[21]	34.2	μg/L	1	50.0	<0.400	68	70 - 130	3	20
1,2,4-Trichlorobenzene		37.3	μg/L	1	50.0	<0.227	75	70 - 130	7	20
Naphthalene		36.2	μg/L	1	50.0	<0.672	72	70 - 130	2	20
Hexachlorobutadiene	[22]	30.8	μg/L	1	50.0	<0.198	62	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	49.9	50.2	μg/L	1	50	100	100	70 - 130
Toluene-d8	49.8	49.0	μg/L	1	50	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	48.9	50.0	μg/L	1	50	98	100	70 - 130

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

[19] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[20] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[21] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[22] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	48.9	98	80 - 120	2009-10-02
Dichlorodifluoromethane		µg/L	50.0	49.3	99	80 - 120	2009-10-02
Chloromethane (methyl chloride)		µg/L	50.0	55.7	111	80 - 120	2009-10-02
Vinyl Chloride		µg/L	50.0	49.6	99	80 - 120	2009-10-02
Bromomethane (methyl bromide)		µg/L	50.0	60.2	120	80 - 120	2009-10-02
Chloroethane	[23]	µg/L	50.0	61.1	122	80 - 120	2009-10-02
Trichlorofluoromethane		µg/L	50.0	51.2	102	80 - 120	2009-10-02
Acetone	[24]	µg/L	50.0	172	344	80 - 120	2009-10-02
Iodomethane (methyl iodide)		µg/L	50.0	54.3	109	80 - 120	2009-10-02
Carbon Disulfide		µg/L	50.0	51.4	103	80 - 120	2009-10-02
Acrylonitrile		µg/L	50.0	48.4	97	80 - 120	2009-10-02
2-Butanone (MEK)		µg/L	50.0	40.8	82	80 - 120	2009-10-02
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	47.8	96	80 - 120	2009-10-02
2-Hexanone		µg/L	50.0	42.3	85	80 - 120	2009-10-02
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.2	92	80 - 120	2009-10-02
1,1-Dichloroethene		µg/L	50.0	50.7	101	80 - 120	2009-10-02
Methylene chloride		µg/L	50.0	48.0	96	80 - 120	2009-10-02
MTBE		µg/L	50.0	50.6	101	80 - 120	2009-10-02
trans-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-10-02
1,1-Dichloroethane		µg/L	50.0	52.1	104	80 - 120	2009-10-02
cis-1,2-Dichloroethene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
2,2-Dichloropropane		µg/L	50.0	52.7	105	80 - 120	2009-10-02
1,2-Dichloroethane (EDC)		µg/L	50.0	49.1	98	80 - 120	2009-10-02
Chloroform		µg/L	50.0	48.1	96	80 - 120	2009-10-02
1,1,1-Trichloroethane		µg/L	50.0	53.6	107	80 - 120	2009-10-02
1,1-Dichloropropene		µg/L	50.0	46.8	94	80 - 120	2009-10-02
Benzene		µg/L	50.0	50.5	101	80 - 120	2009-10-02
Carbon Tetrachloride		µg/L	50.0	53.1	106	80 - 120	2009-10-02
1,2-Dichloropropane		µg/L	50.0	50.4	101	80 - 120	2009-10-02
Trichloroethene (TCE)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
Dibromomethane (methylene bromide)		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Bromodichloromethane		µg/L	50.0	49.0	98	80 - 120	2009-10-02

continued ...

[23] Analyte recovery outside CCV control limits. Concentration biased high. •
[24] Analyte recovery outside CCV control limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Chloroethyl vinyl ether		µg/L	50.0	40.7	81	80 - 120	2009-10-02
cis-1,3-Dichloropropene		µg/L	50.0	51.4	103	80 - 120	2009-10-02
trans-1,3-Dichloropropene		µg/L	50.0	47.6	95	80 - 120	2009-10-02
Toluene		µg/L	50.0	46.6	93	80 - 120	2009-10-02
1,1,2-Trichloroethane		µg/L	50.0	46.4	93	80 - 120	2009-10-02
1,3-Dichloropropane		µg/L	50.0	46.2	92	80 - 120	2009-10-02
Dibromochloromethane		µg/L	50.0	47.4	95	80 - 120	2009-10-02
1,2-Dibromoethane (EDB)		µg/L	50.0	46.4	93	80 - 120	2009-10-02
Tetrachloroethene (PCE)	[25]	µg/L	50.0	29.4	59	80 - 120	2009-10-02
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
1,1,1,2-Tetrachloroethane		µg/L	50.0	45.6	91	80 - 120	2009-10-02
Ethylbenzene		µg/L	50.0	44.6	89	80 - 120	2009-10-02
m,p-Xylene		µg/L	100	93.1	93	80 - 120	2009-10-02
Bromoform		µg/L	50.0	45.0	90	80 - 120	2009-10-02
Styrene		µg/L	50.0	48.4	97	80 - 120	2009-10-02
o-Xylene		µg/L	50.0	45.6	91	80 - 120	2009-10-02
1,1,2,2-Tetrachloroethane		µg/L	50.0	44.3	89	80 - 120	2009-10-02
2-Chlorotoluene		µg/L	50.0	44.8	90	80 - 120	2009-10-02
1,2,3-Trichloropropane		µg/L	50.0	43.0	86	80 - 120	2009-10-02
Isopropylbenzene		µg/L	50.0	47.0	94	80 - 120	2009-10-02
Bromobenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
n-Propylbenzene		µg/L	50.0	44.9	90	80 - 120	2009-10-02
1,3,5-Trimethylbenzene		µg/L	50.0	44.4	89	80 - 120	2009-10-02
tert-Butylbenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
1,2,4-Trimethylbenzene	[26]	µg/L	50.0	37.8	76	80 - 120	2009-10-02
1,4-Dichlorobenzene (para)		µg/L	50.0	40.9	82	80 - 120	2009-10-02
sec-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,3-Dichlorobenzene (meta)		µg/L	50.0	43.6	87	80 - 120	2009-10-02
p-Isopropyltoluene		µg/L	50.0	44.5	89	80 - 120	2009-10-02
4-Chlorotoluene		µg/L	50.0	45.1	90	80 - 120	2009-10-02
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
n-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,2-Dibromo-3-chloropropane		µg/L	50.0	40.0	80	80 - 120	2009-10-02
1,2,3-Trichlorobenzene	[27]	µg/L	50.0	37.7	75	80 - 120	2009-10-02
1,2,4-Trichlorobenzene		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Naphthalene	[28]	µg/L	50.0	38.1	76	80 - 120	2009-10-02
Hexachlorobutadiene	[29]	µg/L	50.0	38.8	78	80 - 120	2009-10-02

[25] Analyte recovery outside CCV control limits. Concentration biased low. •
[26] Analyte recovery outside CCV control limits. Concentration biased low. •
[27] Analyte recovery outside CCV control limits. Concentration biased low. •
[28] Analyte recovery outside CCV control limits. Concentration biased low. •
[29] Analyte recovery outside CCV control limits. Concentration biased low. •

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575-532-1529 p
575-532-1537 f

CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELOTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO								REMARKS
9-24-09	1005	HTSA-0197 HYDU 005-0909	Water	211152	6	X	X								

ANALYSIS REQUESTED

PROJECT INFORMATION

PROJECT MANAGER: Brad Davis

SHIPPING ID NO.:

VIA: Lab Courier

SAMPLES RECEIVED: intact

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS:

GOOD CONDITION/CHILLED: 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY: (SIGNATURE)
(PRINTED NAME): GABRIEL GALLEGOS
RECEIVED BY: (SIGNATURE)
(TIME/DATE):

2. RELINQUISHED BY: (SIGNATURE)
(PRINTED NAME):
RECEIVED BY: (SIGNATURE)
(TIME/DATE):

3. RECEIVED BY LAB: (SIGNATURE): Carol Fox
(PRINTED NAME): Carol Fox
(COMPANY): Trace
(TIME/DATE): 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS

FED LS 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 5, 2009

Work Order: 9093016

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211155	HTSA-0197-HVW-006-0909	water	2009-09-28	11:30	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093016. Samples for work order 9093016 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093016 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211155 - HTSA-0197-HVW-006-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	J	**0.182**	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.101	mg/L	1	0.100	101	80 - 109

Sample: 211155 - HTSA-0197-HVW-006-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Benzene		**3.06**	**3.06**	<0.240	μg/L	1	0.240	1	0.24
Toluene		**3.99**	**3.99**	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	J	**0.520**	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene		**10.0**	**10.0**	<0.540	μg/L	1	0.540	1	0.54
o-Xylene		**4.98**	**4.98**	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene		**2.18**	**2.18**	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene		**2.93**	**2.93**	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene		**6.51**	**6.51**	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	J	**0.610**	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.8	μg/L	1	50.0	104	92.3 - 115
Toluene-d8		50.3	μg/L	1	50.0	101	89.8 - 109
4-Bromofluorobenzene (4-BFB)		51.1	μg/L	1	50.0	102	89.5 - 112

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	µg/L	0.37
Dichlorodifluoromethane		<0.450	µg/L	0.45
Chloromethane (methyl chloride)		<0.590	µg/L	0.59
Vinyl Chloride		<0.690	µg/L	0.69
Bromomethane (methyl bromide)		<0.750	µg/L	0.75
Chloroethane		<0.570	µg/L	0.57
Trichlorofluoromethane		<0.470	µg/L	0.47
Acetone		2.20	µg/L	1.75
Iodomethane (methyl iodide)		<0.320	µg/L	0.32
Carbon Disulfide		<0.250	µg/L	0.25
Acrylonitrile		<0.320	µg/L	0.32
2-Butanone (MEK)		<0.810	µg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	µg/L	0.79
2-Hexanone		<0.510	µg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	µg/L	0.49
1,1-Dichloroethene		<0.400	µg/L	0.4
Methylene chloride		<0.450	µg/L	0.45
MTBE		<0.400	µg/L	0.4
trans-1,2-Dichloroethene		<0.330	µg/L	0.33
1,1-Dichloroethane		<0.290	µg/L	0.29
cis-1,2-Dichloroethene		<0.200	µg/L	0.2
2,2-Dichloropropane		<0.420	µg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	µg/L	0.35
Chloroform		<0.270	µg/L	0.27
1,1,1-Trichloroethane		<0.230	µg/L	0.23
1,1-Dichloropropene		<0.340	µg/L	0.34
Benzene		<0.240	µg/L	0.24
Carbon Tetrachloride		<0.300	µg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane	47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane	37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)	37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride	41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)	38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane	38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane	39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone [1]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)	50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide	48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile	45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)	37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)	43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone	38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene	45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene	48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride	48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE	48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene	50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane	49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[1] Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	µg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	µg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	µg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	µg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	µg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	µg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	µg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	µg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	µg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [2]	99.6	µg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	µg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	µg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	µg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	µg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	µg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	µg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	µg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	µg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	µg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	µg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	µg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	µg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	µg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	µg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	µg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	µg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	µg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	µg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	µg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	µg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	µg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	µg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	µg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	µg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	µg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	µg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	µg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	µg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	µg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	µg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	µg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	µg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[2] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	QC Preparation:	2009-10-01	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[3]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[4]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[5]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[3] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [6]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [7]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued ...

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[8]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[9]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[10]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[11]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued ...

[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[10] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	μg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	μg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	μg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	μg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	μg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	μg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	μg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	μg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	μg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	μg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	μg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	μg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	μg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	μg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	μg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [12]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [13]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[14]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[15]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[16]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[17]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[18]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[14] Analyte recovery outside CCV limits. Concentration biased low. •
[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased high. •
[17] Analyte recovery outside CCV limits. Concentration biased low. •
[18] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[19]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[19] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[20]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[20] Analyte recovery outside CCV limits. Concentration biased high. •

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9093016

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.: 13

PROJECT NAME: HEI STF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO								REMARKS
9-28-09	1130	HTSA-0197 HVOU-006-0909	Water	211155	6	X	X								

ANALYSIS REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:	intact	(PRINTED NAME): Gabriel Garcia	(PRINTED NAME):	(PRINTED NAME): Carol Fox
SHIPPING ID NO:	CHAIN OF CUSTODY SEALS:		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY): Trace
	GOOD CONDITION/CHILLED:	IR 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE): 9-30-09 8:30 AM
VIA: Lab Courier	CONFORMS TO RECORD:		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		Fed Ex 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 5, 2009

Work Order: 9093014

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211153	HTSA-0197-HVW-008-0909	water	2009-09-24	11:00	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093014. Samples for work order 9093014 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093014 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211153 - HTSA-0197-HVW-008-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**123**	**123**	<15.2	mg/L	100	15.2	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.74	mg/L	100	10.0	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		9.81	mg/L	100	10.0	98	80 - 109

Sample: 211153 - HTSA-0197-HVW-008-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**1240**	**1240**	<80.0	μg/L	200	80.0	1	0.4
Benzene		**11600**	**11600**	<48.0	μg/L	200	48.0	1	0.24
Toluene	[1]	**42100**	**42100**	<54.0	μg/L	200	54.0	1	0.27
Ethylbenzene		**9800**	**9800**	<52.0	μg/L	200	52.0	1	0.26
m,p-Xylene		**22800**	**22800**	<108	μg/L	200	108	1	0.54
o-Xylene		**9790**	**9790**	<52.0	μg/L	200	52.0	1	0.26
n-Propylbenzene		**2180**	**2180**	<62.0	μg/L	200	62.0	1	0.31
1,3,5-Trimethylbenzene		**2690**	**2690**	<54.0	μg/L	200	54.0	1	0.27
1,2,4-Trimethylbenzene		**10400**	**10400**	<58.0	μg/L	200	58.0	1	0.29
Naphthalene		**1300**	**1300**	<56.0	μg/L	200	56.0	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		9860	μg/L	200	10000	99	92.3 - 115
Toluene-d8		10000	μg/L	200	10000	100	89.8 - 109
4-Bromofluorobenzene (4-BFB)		10200	μg/L	200	10000	102	89.5 - 112

[1] Estimated concentration value greater than standard range.

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45
Chloromethane (methyl chloride)		<0.590	μg/L	0.59
Vinyl Chloride		<0.690	μg/L	0.69
Bromomethane (methyl bromide)		<0.750	μg/L	0.75
Chloroethane		<0.570	μg/L	0.57
Trichlorofluoromethane		<0.470	μg/L	0.47
Acetone		2.20	μg/L	1.75
Iodomethane (methyl iodide)		<0.320	μg/L	0.32
Carbon Disulfide		<0.250	μg/L	0.25
Acrylonitrile		<0.320	μg/L	0.32
2-Butanone (MEK)		<0.810	μg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	μg/L	0.79
2-Hexanone		<0.510	μg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	μg/L	0.49
1,1-Dichloroethene		<0.400	μg/L	0.4
Methylene chloride		<0.450	μg/L	0.45
MTBE		<0.400	μg/L	0.4
trans-1,2-Dichloroethene		<0.330	μg/L	0.33
1,1-Dichloroethane		<0.290	μg/L	0.29
cis-1,2-Dichloroethene		<0.200	μg/L	0.2
2,2-Dichloropropane		<0.420	μg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	μg/L	0.35
Chloroform		<0.270	μg/L	0.27
1,1,1-Trichloroethane		<0.230	μg/L	0.23
1,1-Dichloropropene		<0.340	μg/L	0.34
Benzene		<0.240	μg/L	0.24
Carbon Tetrachloride		<0.300	μg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[2]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[2]Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	µg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	µg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	µg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	µg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	µg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	µg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	µg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	µg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	µg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [3]	99.6	µg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	µg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	µg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	µg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	µg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	µg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	µg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	µg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	µg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	µg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	µg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	µg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	µg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	µg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	µg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	µg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	µg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	µg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	µg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	µg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	µg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	µg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	µg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	µg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	µg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	µg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	µg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	µg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	µg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	µg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	µg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	µg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	µg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[3] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	QC Preparation:	2009-10-01	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[4]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[5]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[6]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [7]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [8]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued ...

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	μg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[9]	188	μg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	μg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	μg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	μg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	μg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	μg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	μg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	μg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	μg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	μg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[10]	70.6	μg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[11]	66.4	μg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	μg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	μg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	μg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	μg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	μg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	μg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	μg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[12]	20.4	μg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	μg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	μg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	μg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	μg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	μg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	μg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	μg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	μg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	μg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	μg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	μg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	μg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	μg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	μg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	μg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	μg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	μg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	μg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	μg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	μg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued ...

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[11] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	µg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	µg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	µg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	µg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	µg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	µg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	µg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	µg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	µg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	µg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	µg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	µg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	µg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	µg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	µg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	µg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	µg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	µg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	µg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	µg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	µg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	µg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	µg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [13]	72.0	µg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	µg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [14]	73.2	µg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	µg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	µg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	µg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	µg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[14] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[15]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[16]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[17]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[18]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[19]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased low. •
[17] Analyte recovery outside CCV limits. Concentration biased high. •
[18] Analyte recovery outside CCV limits. Concentration biased low. •
[19] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[20]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[20] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[21]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[21] Analyte recovery outside CCV limits. Concentration biased high. •

9093014

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO								REMARKS
9-24-09	1100	HTSA 0197-HVM-001-0909	Water	211153	6	X	X								

ANALYSES REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY (SIGNATURE)	2. RELINQUISHED BY (SIGNATURE)	3. RECEIVED BY LAB (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GALLEGOS	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	(COMPANY) Trace
	GOOD CONDITION/COOLED	intact 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 9-30-09 8:30 AM
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		FedEx 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

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Report Date: October 5, 2009

Work Order: 9093017

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211156	HTSA-0197-HVW-010-0909	water	2009-09-24	11:35	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093017. Samples for work order 9093017 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54719	2009-10-01 at 14:13	64081	2009-10-01 at 14:13
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093017 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211156 - HTSA-0197-HVW-010-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**254**	**254**	<7.60	mg/L	50	7.60	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	[1]	6.00	mg/L	50	5.00	120	70.8 - 112
4-Bromofluorobenzene (4-BFB)	[2]	5.90	mg/L	50	5.00	118	80 - 109

Sample: 211156 - HTSA-0197-HVW-010-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	J	**89.1**	<200	<80.0	μg/L	200	80.0	1	0.4
Benzene		**26500**	**26500**	<48.0	μg/L	200	48.0	1	0.24
Toluene	[3]	**66000**	**66000**	<54.0	μg/L	200	54.0	1	0.27
Ethylbenzene		**9380**	**9380**	<52.0	μg/L	200	52.0	1	0.26
m,p-Xylene		**19600**	**19600**	<108	μg/L	200	108	1	0.54
o-Xylene		**8750**	**8750**	<52.0	μg/L	200	52.0	1	0.26
n-Propylbenzene		**1300**	**1300**	<62.0	μg/L	200	62.0	1	0.31
1,3,5-Trimethylbenzene		**1580**	**1580**	<54.0	μg/L	200	54.0	1	0.27
1,2,4-Trimethylbenzene		**6370**	**6370**	<58.0	μg/L	200	58.0	1	0.29
Naphthalene	J	**952**	<1000	<56.0	μg/L	200	56.0	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		9750	μg/L	200	10000	98	92.3 - 115
Toluene-d8		9790	μg/L	200	10000	98	89.8 - 109
4-Bromofluorobenzene (4-BFB)		9980	μg/L	200	10000	100	89.5 - 112

[1] High surrogate recovery due to peak interference.
[2] High surrogate recovery due to peak interference.
[3] Estimated concentration value greater than standard range.

Method Blank (1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	µg/L	0.37
Dichlorodifluoromethane		<0.450	µg/L	0.45
Chloromethane (methyl chloride)		<0.590	µg/L	0.59
Vinyl Chloride		<0.690	µg/L	0.69
Bromomethane (methyl bromide)		<0.750	µg/L	0.75
Chloroethane		<0.570	µg/L	0.57
Trichlorofluoromethane		<0.470	µg/L	0.47
Acetone		2.20	µg/L	1.75
Iodomethane (methyl iodide)		<0.320	µg/L	0.32
Carbon Disulfide		<0.250	µg/L	0.25
Acrylonitrile		<0.320	µg/L	0.32
2-Butanone (MEK)		<0.810	µg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	µg/L	0.79
2-Hexanone		<0.510	µg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	µg/L	0.49
1,1-Dichloroethene		<0.400	µg/L	0.4
Methylene chloride		<0.450	µg/L	0.45
MTBE		<0.400	µg/L	0.4
trans-1,2-Dichloroethene		<0.330	µg/L	0.33
1,1-Dichloroethane		<0.290	µg/L	0.29
cis-1,2-Dichloroethene		<0.200	µg/L	0.2
2,2-Dichloropropane		<0.420	µg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	µg/L	0.35
Chloroform		<0.270	µg/L	0.27
1,1,1-Trichloroethane		<0.230	µg/L	0.23
1,1-Dichloropropene		<0.340	µg/L	0.34
Benzene		<0.240	µg/L	0.24
Carbon Tetrachloride		<0.300	µg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER
Prep Batch: 54719 QC Preparation: 2009-10-01 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.12	mg/L	1	1.00	<0.152	112	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.07	mg/L	1	1.00	<0.152	107	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.106	0.103	mg/L	1	0.100	106	103	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.118	0.0996	mg/L	1	0.100	118	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[4]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[4]Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	μg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	μg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	μg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	μg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	μg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	μg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	μg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	μg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	μg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [5]	99.6	μg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	μg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	μg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	μg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	μg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	μg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	μg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	μg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	μg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	μg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	μg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	μg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	μg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	μg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	μg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	μg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	μg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	μg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	μg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	μg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	μg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	μg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	μg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	μg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	μg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	μg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	μg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	μg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	μg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	μg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	μg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	μg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	μg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[5] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211134

QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	QC Preparation:	2009-10-01	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	105	mg/L	50	50.0	53.4	103	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	104	mg/L	50	50.0	53.4	101	48.4 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	5.20	5.36	mg/L	50	5	104	107	70.3 - 129
4-Bromofluorobenzene (4-BFB)	5.10	5.24	mg/L	50	5	102	105	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	μg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	μg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[6]	390	μg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	μg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	μg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	μg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	μg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	μg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	μg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	μg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	μg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	μg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[7]	68.4	μg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	μg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	μg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	μg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	μg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	μg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	μg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	μg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	μg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[8]	20.6	μg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	μg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	μg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	μg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	μg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	μg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	μg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	μg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [9]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [10]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued ...

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[11]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[12]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[13]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[14]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued ...

[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[13] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[14] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	μg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	μg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	μg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	μg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	μg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	μg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	μg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	μg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	μg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	μg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	μg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	μg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	μg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	μg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	μg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [15]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [16]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

[15] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[16] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.09	109	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64081 Date Analyzed: 2009-10-01 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.03	103	80 - 120	2009-10-01

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[17]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[18]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[19]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[20]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[21]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[17] Analyte recovery outside CCV limits. Concentration biased low. •
[18] Analyte recovery outside CCV limits. Concentration biased low. •
[19] Analyte recovery outside CCV limits. Concentration biased high. •
[20] Analyte recovery outside CCV limits. Concentration biased low. •
[21] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[22]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[22] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[23]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[23] Analyte recovery outside CCV limits. Concentration biased high. •

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CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO									REMARKS
9-24-09	1135	HTSA-0197-HMW 010-0909	Water	211156	6	X	X									

ANALYSIS REQUESTED

PROJECT INFORMATION	SAMPLES RECEIVED	intact	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GALLTA	(PRINTED NAME)	(PRINTED NAME) Carol FOX
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace
	GOOD CONDITION/CHILLED	1.0 / 14	(TIME/ DATE)	(TIME/ DATE)	(TIME/ DATE) 9-30-09 8:30 AM
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS LS 7979 7307 2490		

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 5, 2009

Work Order: 9093010

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211136	HTSA-0197-HMW-052-0909	water	2009-09-23	11:00	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093010. Samples for work order 9093010 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54693	2009-09-30 at 14:19	64046	2009-09-30 at 14:19
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093010 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	Sample Preparation:	2009-09-30	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.104	mg/L	1	0.100	104	80 - 109

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**9.40**	**9.40**	<0.400	μg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.9	μg/L	1	50.0	102	92.3 - 115
Toluene-d8		50.3	μg/L	1	50.0	101	89.8 - 109
4-Bromofluorobenzene (4-BFB)		47.6	μg/L	1	50.0	95	89.5 - 112

Method Blank (1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0981	mg/L	1	0.100	98	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	µg/L	0.37
Dichlorodifluoromethane		<0.450	µg/L	0.45
Chloromethane (methyl chloride)		<0.590	µg/L	0.59
Vinyl Chloride		<0.690	µg/L	0.69
Bromomethane (methyl bromide)		<0.750	µg/L	0.75
Chloroethane		<0.570	µg/L	0.57
Trichlorofluoromethane		<0.470	µg/L	0.47
Acetone		2.20	µg/L	1.75
Iodomethane (methyl iodide)		<0.320	µg/L	0.32
Carbon Disulfide		<0.250	µg/L	0.25
Acrylonitrile		<0.320	µg/L	0.32
2-Butanone (MEK)		<0.810	µg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	µg/L	0.79
2-Hexanone		<0.510	µg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	µg/L	0.49
1,1-Dichloroethene		<0.400	µg/L	0.4
Methylene chloride		<0.450	µg/L	0.45
MTBE		<0.400	µg/L	0.4
trans-1,2-Dichloroethene		<0.330	µg/L	0.33
1,1-Dichloroethane		<0.290	µg/L	0.29
cis-1,2-Dichloroethene		<0.200	µg/L	0.2
2,2-Dichloropropane		<0.420	µg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	µg/L	0.35
Chloroform		<0.270	µg/L	0.27
1,1,1-Trichloroethane		<0.230	µg/L	0.23
1,1-Dichloropropene		<0.340	µg/L	0.34
Benzene		<0.240	µg/L	0.24
Carbon Tetrachloride		<0.300	µg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.03	mg/L	1	1.00	<0.152	103	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.101	mg/L	1	0.100	105	101	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.103	0.100	mg/L	1	0.100	103	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[1]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[1] Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	μg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	μg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	μg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	μg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	μg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	μg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	μg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	μg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	μg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [2]	99.6	μg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	μg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	μg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	μg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	μg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	μg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	μg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	μg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	μg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	μg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	μg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	μg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	μg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	μg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	μg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	μg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	μg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	μg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	μg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	μg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	μg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	μg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	μg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	μg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	μg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	μg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	μg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	μg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	μg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	μg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	μg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	μg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	μg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[2] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	QC Preparation:	2009-09-30	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.05	mg/L	1	1.00	<0.152	105	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	0.931	mg/L	1	1.00	<0.152	93	48.4 - 136	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0890	0.0826	mg/L	1	0.1	89	83	70.3 - 129
4-Bromofluorobenzene (4-BFB)	0.0892	0.0849	mg/L	1	0.1	89	85	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[3]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[4]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[5]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[3] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [6]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [7]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[8]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[9]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[10]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[11]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued . . .

[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[10] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	μg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	μg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	μg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	μg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	μg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	μg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	μg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	μg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	μg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	μg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	μg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	μg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	μg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	μg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	μg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [12]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [13]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-2)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[14]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[15]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[16]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[17]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[18]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[14] Analyte recovery outside CCV limits. Concentration biased low. •
[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased high. •
[17] Analyte recovery outside CCV limits. Concentration biased low. •
[18] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[19]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[19] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[20]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[20] Analyte recovery outside CCV limits. Concentration biased high. •

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CHAIN OF CUSTODY RECORD

PROJECT NO: 13

PROJECT NAME: HEUSTF TSA Groundwater Monitoring

SAMPLERS SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO. OF CONTAINERS	VOC	SVOC									REMARKS
9-23-09	1100	HTSA 0197-HMW 062 0909	Water	211136	6	X	X									

ANALYSIS REQUESTED

PROJECT INFORMATION

PROJECT MANAGER: Brad Davis

SHIPPING ID NO:

VIA: Lab Courier

SAMPLES RECEIVED: intact

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS:

GOOD CONDITION/COLD: IR 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME): GABRIEL CANITZ

RECEIVED BY: (SIGNATURE)

(TIME/DATE)

2. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME)

RECEIVED BY: (SIGNATURE)

(TIME/DATE)

3. RECEIVED BY LABORATORY: (SIGNATURE) Carol Fox

(PRINTED NAME) Carol Fox

(COMPANY) Trace

(TIME/DATE) 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS

Fed 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILE; YELLOW - LAB; PINK - FIELD RECORD

9093010

zia engineering & environmental consultants, llc
754 S. Telshor Blvd. Ste. E-211
Las Cruces, NM 88011
575-532-1525 p
575-532-1547 f

170

CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO OF CONTAINERS	CO3	BO3									REMARKS
9-28-09	1100	H-TSA-0197 HVOU 052-0909-mydmsd	Water	211136	6	X	X									

PROJECT INFORMATION	SAMPLES RECEIVED: intact	1. RELINQUISHED BY (SIGNATURE)	2. RELINQUISHED BY (SIGNATURE)	3. RECEIVED BY LAB (SIGNATURE) Carol Fox
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:	(PRINTED NAME) GABRIEL GALLEGOS	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO:	CHAIN OF CUSTODY SEALS:	RELINQUISHED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	COMPANY: Trace
	GOOD CONDITION/CHILLED: JR 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 9-30-09 8:30 Am
VIA: Lab Courier	CONFORMS TO RECORD:	SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Fed 7979 7307 2490	

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TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 5, 2009

Work Order: 9093010

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211136	HTSA-0197-HMW-052-0909	water	2009-09-23	11:00	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093010. Samples for work order 9093010 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54693	2009-09-30 at 14:19	64046	2009-09-30 at 14:19
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093010 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	Sample Preparation:	2009-09-30	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.104	mg/L	1	0.100	104	80 - 109

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**9.40**	**9.40**	<0.400	μg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.9	μg/L	1	50.0	102	92.3 - 115
Toluene-d8		50.3	μg/L	1	50.0	101	89.8 - 109
4-Bromofluorobenzene (4-BFB)		47.6	μg/L	1	50.0	95	89.5 - 112

Method Blank (1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0981	mg/L	1	0.100	98	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	µg/L	0.37
Dichlorodifluoromethane		<0.450	µg/L	0.45
Chloromethane (methyl chloride)		<0.590	µg/L	0.59
Vinyl Chloride		<0.690	µg/L	0.69
Bromomethane (methyl bromide)		<0.750	µg/L	0.75
Chloroethane		<0.570	µg/L	0.57
Trichlorofluoromethane		<0.470	µg/L	0.47
Acetone		2.20	µg/L	1.75
Iodomethane (methyl iodide)		<0.320	µg/L	0.32
Carbon Disulfide		<0.250	µg/L	0.25
Acrylonitrile		<0.320	µg/L	0.32
2-Butanone (MEK)		<0.810	µg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	µg/L	0.79
2-Hexanone		<0.510	µg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	µg/L	0.49
1,1-Dichloroethene		<0.400	µg/L	0.4
Methylene chloride		<0.450	µg/L	0.45
MTBE		<0.400	µg/L	0.4
trans-1,2-Dichloroethene		<0.330	µg/L	0.33
1,1-Dichloroethane		<0.290	µg/L	0.29
cis-1,2-Dichloroethene		<0.200	µg/L	0.2
2,2-Dichloropropane		<0.420	µg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	µg/L	0.35
Chloroform		<0.270	µg/L	0.27
1,1,1-Trichloroethane		<0.230	µg/L	0.23
1,1-Dichloropropene		<0.340	µg/L	0.34
Benzene		<0.240	µg/L	0.24
Carbon Tetrachloride		<0.300	µg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.03	mg/L	1	1.00	<0.152	103	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.101	mg/L	1	0.100	105	101	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.103	0.100	mg/L	1	0.100	103	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[1]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[1] Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	μg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	μg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	μg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	μg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	μg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	μg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	μg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	μg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	μg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [2]	99.6	μg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	μg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	μg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	μg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	μg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	μg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	μg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	μg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	μg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	μg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	μg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	μg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	μg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	μg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	μg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	μg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	μg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	μg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	μg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	μg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	μg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	μg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	μg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	μg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	μg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	μg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	μg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	μg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	μg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	μg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	μg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	μg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	μg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[2] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	QC Preparation:	2009-09-30	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.05	mg/L	1	1.00	<0.152	105	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	0.931	mg/L	1	1.00	<0.152	93	48.4 - 136	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0890	0.0826	mg/L	1	0.1	89	83	70.3 - 129
4-Bromofluorobenzene (4-BFB)	0.0892	0.0849	mg/L	1	0.1	89	85	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[3]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[4]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[5]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[3] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [6]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [7]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[8]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[9]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[10]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[11]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued . . .

[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[10] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	μg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	μg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	μg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	μg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	μg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	μg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	μg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	μg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	μg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	μg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	μg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	μg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	μg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	μg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	μg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [12]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [13]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-2)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[14]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[15]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[16]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[17]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[18]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[14] Analyte recovery outside CCV limits. Concentration biased low. •
[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased high. •
[17] Analyte recovery outside CCV limits. Concentration biased low. •
[18] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[19]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[19] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[20]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[20] Analyte recovery outside CCV limits. Concentration biased high. •

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Las Cruces, NM 88011
575-532-1526 u
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CHAIN OF CUSTODY RECORD

PROJECT NO: 13

PROJECT NAME: HEUSTF TSA Groundwater Monitoring

SAMPLERS SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO. OF CONTAINERS	VOC	SVOC									REMARKS
9-23-09	1100	HTSA 0197-HMW 062 0909	Water	211136	6	X	X									

ANALYSIS REQUESTED

PROJECT INFORMATION

PROJECT MANAGER: Brad Davis

SHIPPING ID NO:

VIA: Lab Courier

SAMPLES RECEIVED: intact

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS:

GOOD CONDITION/COLD: IR 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME): GABRIEL CANITZ

RECEIVED BY: (SIGNATURE)

(TIME/DATE)

2. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME)

RECEIVED BY: (SIGNATURE)

(TIME/DATE)

3. RECEIVED BY LABORATORY: (SIGNATURE) Carol Fox

(PRINTED NAME) Carol Fox

(COMPANY) Trace

(TIME/DATE) 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS

Fed 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILE; YELLOW - LAB; PINK - FIELD RECORD

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754 S. Telshor Blvd. Ste. E-211
Las Cruces, NM 88011
575-532-1525 p
575-532-1547 f

170

CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO OF CONTAINERS	CO3	BO3									REMARKS
9-28-09	1100	H-TSA-0197 HVOU 052-0909-mydmsd	Water	211136	6	X	X									

PROJECT INFORMATION	SAMPLES RECEIVED: intact	1. RELINQUISHED BY (SIGNATURE)	2. RELINQUISHED BY (SIGNATURE)	3. RECEIVED BY LAB (SIGNATURE) Carol Fox
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:	(PRINTED NAME) GABRIEL GALLEGOS	(PRINTED NAME)	(PRINTED NAME) Carol Fox
SHIPPING ID NO:	CHAIN OF CUSTODY SEALS:	RELINQUISHED BY (SIGNATURE)	RELINQUISHED BY (SIGNATURE)	COMPANY: Trace
	GOOD CONDITION/CHILLED: JR 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 9-30-09 8:30 Am
VIA: Lab Courier	CONFORMS TO RECORD:	SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Fed 7979 7307 2490	

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TRACEANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 5, 2009

Work Order: 9093019

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211158	HTSA-0197-HMW-152-0909	water	2009-09-23	11:00	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 17 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093019. Samples for work order 9093019 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54693	2009-09-30 at 14:19	64046	2009-09-30 at 14:19
Volatiles	S 8260B	54745	2009-10-01 at 12:00	64104	2009-10-01 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093019 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211158 - HTSA-0197-HMW-152-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	Sample Preparation:	2009-09-30	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0972	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.102	mg/L	1	0.100	102	80 - 109

Sample: 211158 - HTSA-0197-HMW-152-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**9.15**	**9.15**	<0.400	μg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	μg/L	1	50.0	101	92.3 - 115
Toluene-d8		50.8	μg/L	1	50.0	102	89.8 - 109
4-Bromofluorobenzene (4-BFB)		48.4	μg/L	1	50.0	97	89.5 - 112

Method Blank (1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0981	mg/L	1	0.100	98	80 - 109

Method Blank (1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	µg/L	0.37
Dichlorodifluoromethane		<0.450	µg/L	0.45
Chloromethane (methyl chloride)		<0.590	µg/L	0.59
Vinyl Chloride		<0.690	µg/L	0.69
Bromomethane (methyl bromide)		<0.750	µg/L	0.75
Chloroethane		<0.570	µg/L	0.57
Trichlorofluoromethane		<0.470	µg/L	0.47
Acetone		2.20	µg/L	1.75
Iodomethane (methyl iodide)		<0.320	µg/L	0.32
Carbon Disulfide		<0.250	µg/L	0.25
Acrylonitrile		<0.320	µg/L	0.32
2-Butanone (MEK)		<0.810	µg/L	0.81
4-Methyl-2-pentanone (MIBK)		<0.790	µg/L	0.79
2-Hexanone		<0.510	µg/L	0.51
trans 1,4-Dichloro-2-butene		<0.490	µg/L	0.49
1,1-Dichloroethene		<0.400	µg/L	0.4
Methylene chloride		<0.450	µg/L	0.45
MTBE		<0.400	µg/L	0.4
trans-1,2-Dichloroethene		<0.330	µg/L	0.33
1,1-Dichloroethane		<0.290	µg/L	0.29
cis-1,2-Dichloroethene		<0.200	µg/L	0.2
2,2-Dichloropropane		<0.420	µg/L	0.42
1,2-Dichloroethane (EDC)		<0.350	µg/L	0.35
Chloroform		<0.270	µg/L	0.27
1,1,1-Trichloroethane		<0.230	µg/L	0.23
1,1-Dichloropropene		<0.340	µg/L	0.34
Benzene		<0.240	µg/L	0.24
Carbon Tetrachloride		<0.300	µg/L	0.3

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.360	μg/L	0.36
Trichloroethene (TCE)		<0.300	μg/L	0.3
Dibromomethane (methylene bromide)		<0.470	μg/L	0.47
Bromodichloromethane		<0.280	μg/L	0.28
2-Chloroethyl vinyl ether		<0.330	μg/L	0.33
cis-1,3-Dichloropropene		<0.330	μg/L	0.33
trans-1,3-Dichloropropene		<0.380	μg/L	0.38
Toluene		<0.270	μg/L	0.27
1,1,2-Trichloroethane		<0.280	μg/L	0.28
1,3-Dichloropropane		<0.270	μg/L	0.27
Dibromochloromethane		<0.320	μg/L	0.32
1,2-Dibromoethane (EDB)		<0.340	μg/L	0.34
Tetrachloroethene (PCE)		<0.280	μg/L	0.28
Chlorobenzene		<0.260	μg/L	0.26
1,1,1,2-Tetrachloroethane		<0.220	μg/L	0.22
Ethylbenzene		<0.260	μg/L	0.26
m,p-Xylene		<0.540	μg/L	0.54
Bromoform		<0.230	μg/L	0.23
Styrene		<0.210	μg/L	0.21
o-Xylene		<0.260	μg/L	0.26
1,1,2,2-Tetrachloroethane		<0.420	μg/L	0.42
2-Chlorotoluene		<0.240	μg/L	0.24
1,2,3-Trichloropropane		<0.430	μg/L	0.43
Isopropylbenzene		<0.260	μg/L	0.26
Bromobenzene		<0.260	μg/L	0.26
n-Propylbenzene		<0.310	μg/L	0.31
1,3,5-Trimethylbenzene		<0.270	μg/L	0.27
tert-Butylbenzene		<0.300	μg/L	0.3
1,2,4-Trimethylbenzene		<0.290	μg/L	0.29
1,4-Dichlorobenzene (para)		<0.240	μg/L	0.24
sec-Butylbenzene		<0.280	μg/L	0.28
1,3-Dichlorobenzene (meta)		<0.310	μg/L	0.31
p-Isopropyltoluene		<0.330	μg/L	0.33
4-Chlorotoluene		<0.290	μg/L	0.29
1,2-Dichlorobenzene (ortho)		<0.270	μg/L	0.27
n-Butylbenzene		<0.300	μg/L	0.3
1,2-Dibromo-3-chloropropane		<0.680	μg/L	0.68
1,2,3-Trichlorobenzene		<0.330	μg/L	0.33
1,2,4-Trichlorobenzene		<0.340	μg/L	0.34
Naphthalene		<0.280	μg/L	0.28
Hexachlorobutadiene		<0.540	μg/L	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.6	μg/L	1	50.0	99	92.3 - 115
Toluene-d8		49.7	μg/L	1	50.0	99	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.6	μg/L	1	50.0	99	89.5 - 112

Laboratory Control Spike (LCS-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.03	mg/L	1	1.00	<0.152	103	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.101	mg/L	1	0.100	105	101	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.103	0.100	mg/L	1	0.100	103	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		47.8	µg/L	1	50.0	<0.370	96	78.5 - 118
Dichlorodifluoromethane		37.2	µg/L	1	50.0	<0.450	74	50.2 - 131
Chloromethane (methyl chloride)		37.7	µg/L	1	50.0	<0.590	75	55.8 - 139
Vinyl Chloride		41.6	µg/L	1	50.0	<0.690	83	64.7 - 132
Bromomethane (methyl bromide)		38.6	µg/L	1	50.0	<0.750	77	46.7 - 145
Chloroethane		38.6	µg/L	1	50.0	<0.570	77	43.7 - 143
Trichlorofluoromethane		39.0	µg/L	1	50.0	<0.470	78	55.9 - 162
Acetone	[1]	95.0	µg/L	1	50.0	2.2	190	31.2 - 170
Iodomethane (methyl iodide)		50.0	µg/L	1	50.0	<0.320	100	65.3 - 130
Carbon Disulfide		48.7	µg/L	1	50.0	<0.250	97	65 - 137
Acrylonitrile		45.7	µg/L	1	50.0	<0.320	91	69.9 - 129
2-Butanone (MEK)		37.9	µg/L	1	50.0	<0.810	76	47.6 - 141
4-Methyl-2-pentanone (MIBK)		43.3	µg/L	1	50.0	<0.790	87	65.8 - 130
2-Hexanone		38.1	µg/L	1	50.0	<0.510	76	62.9 - 129
trans 1,4-Dichloro-2-butene		45.6	µg/L	1	50.0	<0.490	91	30.7 - 163
1,1-Dichloroethene		48.8	µg/L	1	50.0	<0.400	98	76.9 - 123
Methylene chloride		48.6	µg/L	1	50.0	<0.450	97	72.1 - 121
MTBE		48.2	µg/L	1	50.0	<0.400	96	78.9 - 121
trans-1,2-Dichloroethene		50.3	µg/L	1	50.0	<0.330	101	73.9 - 120
1,1-Dichloroethane		49.6	µg/L	1	50.0	<0.290	99	79.3 - 121

continued ...

[1] Spike recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.5	μg/L	1	50.0	<0.200	99	77.8 - 119
2,2-Dichloropropane	54.2	μg/L	1	50.0	<0.420	108	65.7 - 139
1,2-Dichloroethane (EDC)	48.7	μg/L	1	50.0	<0.350	97	67.4 - 138
Chloroform	48.6	μg/L	1	50.0	<0.270	97	78.1 - 122
1,1,1-Trichloroethane	49.8	μg/L	1	50.0	<0.230	100	74.7 - 131
1,1-Dichloropropene	50.1	μg/L	1	50.0	<0.340	100	83.8 - 119
Benzene	50.4	μg/L	1	50.0	<0.240	101	79.5 - 119
Carbon Tetrachloride	51.9	μg/L	1	50.0	<0.300	104	56.9 - 160
1,2-Dichloropropane	50.2	μg/L	1	50.0	<0.360	100	81.9 - 118
Trichloroethene (TCE)	49.5	μg/L	1	50.0	<0.300	99	75.3 - 122
Dibromomethane (methylene bromide)	48.6	μg/L	1	50.0	<0.470	97	79.8 - 120
Bromodichloromethane	49.6	μg/L	1	50.0	<0.280	99	77.1 - 134
2-Chloroethyl vinyl ether	37.5	μg/L	1	50.0	<0.330	75	35.4 - 138
cis-1,3-Dichloropropene	50.4	μg/L	1	50.0	<0.330	101	65 - 144
trans-1,3-Dichloropropene	48.8	μg/L	1	50.0	<0.380	98	82.1 - 131
Toluene	49.8	μg/L	1	50.0	<0.270	100	81.4 - 118
1,1,2-Trichloroethane	46.5	μg/L	1	50.0	<0.280	93	75.7 - 121
1,3-Dichloropropane	48.5	μg/L	1	50.0	<0.270	97	79.1 - 119
Dibromochloromethane	49.2	μg/L	1	50.0	<0.320	98	72.2 - 141
1,2-Dibromoethane (EDB)	47.4	μg/L	1	50.0	<0.340	95	77.1 - 124
Tetrachloroethene (PCE)	35.7	μg/L	1	50.0	<0.280	71	12.1 - 181
Chlorobenzene	49.2	μg/L	1	50.0	<0.260	98	78.2 - 117
1,1,1,2-Tetrachloroethane	50.1	μg/L	1	50.0	<0.220	100	75.6 - 132
Ethylbenzene	50.0	μg/L	1	50.0	<0.260	100	79.9 - 118
m,p-Xylene	101	μg/L	1	100	<0.540	101	76.3 - 127
Bromoform	48.1	μg/L	1	50.0	<0.230	96	61.5 - 136
Styrene	50.3	μg/L	1	50.0	<0.210	101	82.2 - 123
o-Xylene	50.8	μg/L	1	50.0	<0.260	102	81.5 - 122
1,1,2,2-Tetrachloroethane	45.9	μg/L	1	50.0	<0.420	92	58.4 - 138
2-Chlorotoluene	47.8	μg/L	1	50.0	<0.240	96	78.5 - 120
1,2,3-Trichloropropane	46.0	μg/L	1	50.0	<0.430	92	66.5 - 140
Isopropylbenzene	51.1	μg/L	1	50.0	<0.260	102	75 - 125
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123
n-Propylbenzene	49.5	μg/L	1	50.0	<0.310	99	78.4 - 120
1,3,5-Trimethylbenzene	50.1	μg/L	1	50.0	<0.270	100	79.6 - 121
tert-Butylbenzene	49.9	μg/L	1	50.0	<0.300	100	76.5 - 124
1,2,4-Trimethylbenzene	49.6	μg/L	1	50.0	<0.290	99	79.4 - 122
1,4-Dichlorobenzene (para)	47.8	μg/L	1	50.0	<0.240	96	75 - 115
sec-Butylbenzene	50.0	μg/L	1	50.0	<0.280	100	78.8 - 123
1,3-Dichlorobenzene (meta)	48.9	μg/L	1	50.0	<0.310	98	78.6 - 116
p-Isopropyltoluene	50.3	μg/L	1	50.0	<0.330	101	76.8 - 124
4-Chlorotoluene	49.3	μg/L	1	50.0	<0.290	99	78.4 - 120
1,2-Dichlorobenzene (ortho)	48.1	μg/L	1	50.0	<0.270	96	78 - 117
n-Butylbenzene	49.4	μg/L	1	50.0	<0.300	99	77.4 - 126
1,2-Dibromo-3-chloropropane	42.0	μg/L	1	50.0	<0.680	84	49.1 - 152
1,2,3-Trichlorobenzene	43.8	μg/L	1	50.0	<0.330	88	78 - 119
1,2,4-Trichlorobenzene	45.7	μg/L	1	50.0	<0.340	91	80.5 - 120

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	41.4	µg/L	1	50.0	<0.280	83	69.1 - 126
Hexachlorobutadiene	51.2	µg/L	1	50.0	<0.540	102	73.4 - 132

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	51.7	µg/L	1	50.0	<0.370	103	78.5 - 118	8	20
Dichlorodifluoromethane	40.2	µg/L	1	50.0	<0.450	80	50.2 - 131	8	20
Chloromethane (methyl chloride)	42.4	µg/L	1	50.0	<0.590	85	55.8 - 139	12	20
Vinyl Chloride	44.7	µg/L	1	50.0	<0.690	89	64.7 - 132	7	20
Bromomethane (methyl bromide)	43.1	µg/L	1	50.0	<0.750	86	46.7 - 145	11	20
Chloroethane	43.6	µg/L	1	50.0	<0.570	87	43.7 - 143	12	20
Trichlorofluoromethane	44.0	µg/L	1	50.0	<0.470	88	55.9 - 162	12	20
Acetone [2]	99.6	µg/L	1	50.0	2.2	199	31.2 - 170	5	20
Iodomethane (methyl iodide)	54.2	µg/L	1	50.0	<0.320	108	65.3 - 130	8	20
Carbon Disulfide	52.6	µg/L	1	50.0	<0.250	105	65 - 137	8	20
Acrylonitrile	49.0	µg/L	1	50.0	<0.320	98	69.9 - 129	7	20
2-Butanone (MEK)	40.0	µg/L	1	50.0	<0.810	80	47.6 - 141	5	20
4-Methyl-2-pentanone (MIBK)	48.3	µg/L	1	50.0	<0.790	97	65.8 - 130	11	20
2-Hexanone	41.2	µg/L	1	50.0	<0.510	82	62.9 - 129	8	20
trans 1,4-Dichloro-2-butene	50.4	µg/L	1	50.0	<0.490	101	30.7 - 163	10	20
1,1-Dichloroethene	52.6	µg/L	1	50.0	<0.400	105	76.9 - 123	8	20
Methylene chloride	52.0	µg/L	1	50.0	<0.450	104	72.1 - 121	7	20
MTBE	52.3	µg/L	1	50.0	<0.400	105	78.9 - 121	8	20
trans-1,2-Dichloroethene	53.8	µg/L	1	50.0	<0.330	108	73.9 - 120	7	20
1,1-Dichloroethane	53.1	µg/L	1	50.0	<0.290	106	79.3 - 121	7	20
cis-1,2-Dichloroethene	54.7	µg/L	1	50.0	<0.200	109	77.8 - 119	10	20
2,2-Dichloropropane	58.4	µg/L	1	50.0	<0.420	117	65.7 - 139	8	20
1,2-Dichloroethane (EDC)	51.7	µg/L	1	50.0	<0.350	103	67.4 - 138	6	20
Chloroform	52.0	µg/L	1	50.0	<0.270	104	78.1 - 122	7	20
1,1,1-Trichloroethane	53.3	µg/L	1	50.0	<0.230	107	74.7 - 131	7	20
1,1-Dichloropropene	52.8	µg/L	1	50.0	<0.340	106	83.8 - 119	5	20
Benzene	53.4	µg/L	1	50.0	<0.240	107	79.5 - 119	6	20
Carbon Tetrachloride	54.9	µg/L	1	50.0	<0.300	110	56.9 - 160	6	20
1,2-Dichloropropane	52.3	µg/L	1	50.0	<0.360	105	81.9 - 118	4	20
Trichloroethene (TCE)	51.8	µg/L	1	50.0	<0.300	104	75.3 - 122	4	20
Dibromomethane (methylene bromide)	50.8	µg/L	1	50.0	<0.470	102	79.8 - 120	4	20
Bromodichloromethane	52.2	µg/L	1	50.0	<0.280	104	77.1 - 134	5	20
2-Chloroethyl vinyl ether	41.7	µg/L	1	50.0	<0.330	83	35.4 - 138	11	20
cis-1,3-Dichloropropene	53.2	µg/L	1	50.0	<0.330	106	65 - 144	5	20
trans-1,3-Dichloropropene	52.0	µg/L	1	50.0	<0.380	104	82.1 - 131	6	20
Toluene	53.3	µg/L	1	50.0	<0.270	107	81.4 - 118	7	20
1,1,2-Trichloroethane	49.9	µg/L	1	50.0	<0.280	100	75.7 - 121	7	20
1,3-Dichloropropane	50.4	µg/L	1	50.0	<0.270	101	79.1 - 119	4	20
Dibromochloromethane	52.0	µg/L	1	50.0	<0.320	104	72.2 - 141	6	20
1,2-Dibromoethane (EDB)	50.4	µg/L	1	50.0	<0.340	101	77.1 - 124	6	20

continued ...

[2] Spike recovery outside control limits. Concentration biased high. RPD within RPD limits. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Tetrachloroethene (PCE)	38.2	μg/L	1	50.0	<0.280	76	12.1 - 181	7	20
Chlorobenzene	52.2	μg/L	1	50.0	<0.260	104	78.2 - 117	6	20
1,1,1,2-Tetrachloroethane	51.2	μg/L	1	50.0	<0.220	102	75.6 - 132	2	20
Ethylbenzene	53.2	μg/L	1	50.0	<0.260	106	79.9 - 118	6	20
m,p-Xylene	107	μg/L	1	100	<0.540	107	76.3 - 127	6	20
Bromoform	50.8	μg/L	1	50.0	<0.230	102	61.5 - 136	6	20
Styrene	54.3	μg/L	1	50.0	<0.210	109	82.2 - 123	8	20
o-Xylene	53.9	μg/L	1	50.0	<0.260	108	81.5 - 122	6	20
1,1,2,2-Tetrachloroethane	48.7	μg/L	1	50.0	<0.420	97	58.4 - 138	6	20
2-Chlorotoluene	49.9	μg/L	1	50.0	<0.240	100	78.5 - 120	4	20
1,2,3-Trichloropropane	46.4	μg/L	1	50.0	<0.430	93	66.5 - 140	1	20
Isopropylbenzene	53.2	μg/L	1	50.0	<0.260	106	75 - 125	4	20
Bromobenzene	50.4	μg/L	1	50.0	<0.260	101	73.8 - 123	0	20
n-Propylbenzene	51.6	μg/L	1	50.0	<0.310	103	78.4 - 120	4	20
1,3,5-Trimethylbenzene	52.4	μg/L	1	50.0	<0.270	105	79.6 - 121	4	20
tert-Butylbenzene	53.2	μg/L	1	50.0	<0.300	106	76.5 - 124	6	20
1,2,4-Trimethylbenzene	52.0	μg/L	1	50.0	<0.290	104	79.4 - 122	5	20
1,4-Dichlorobenzene (para)	50.6	μg/L	1	50.0	<0.240	101	75 - 115	6	20
sec-Butylbenzene	52.4	μg/L	1	50.0	<0.280	105	78.8 - 123	5	20
1,3-Dichlorobenzene (meta)	51.1	μg/L	1	50.0	<0.310	102	78.6 - 116	4	20
p-Isopropyltoluene	52.8	μg/L	1	50.0	<0.330	106	76.8 - 124	5	20
4-Chlorotoluene	52.0	μg/L	1	50.0	<0.290	104	78.4 - 120	5	20
1,2-Dichlorobenzene (ortho)	50.7	μg/L	1	50.0	<0.270	101	78 - 117	5	20
n-Butylbenzene	52.3	μg/L	1	50.0	<0.300	105	77.4 - 126	6	20
1,2-Dibromo-3-chloropropane	44.3	μg/L	1	50.0	<0.680	89	49.1 - 152	5	20
1,2,3-Trichlorobenzene	46.6	μg/L	1	50.0	<0.330	93	78 - 119	6	20
1,2,4-Trichlorobenzene	49.4	μg/L	1	50.0	<0.340	99	80.5 - 120	8	20
Naphthalene	44.9	μg/L	1	50.0	<0.280	90	69.1 - 126	8	20
Hexachlorobutadiene	55.2	μg/L	1	50.0	<0.540	110	73.4 - 132	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	48.2	49.0	μg/L	1	50.0	96	98	91.4 - 114
Toluene-d8	48.9	48.9	μg/L	1	50.0	98	98	89.8 - 108
4-Bromofluorobenzene (4-BFB)	50.7	51.0	μg/L	1	50.0	101	102	90.2 - 116

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	QC Preparation:	2009-09-30	Prepared By:	ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.05	mg/L	1	1.00	<0.152	105	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	0.931	mg/L	1	1.00	<0.152	93	48.4 - 136	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0890	0.0826	mg/L	1	0.1	89	83	70.3 - 129
4-Bromofluorobenzene (4-BFB)	0.0892	0.0849	mg/L	1	0.1	89	85	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB
Prep Batch: 54745 QC Preparation: 2009-10-01 Prepared By: KB

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		52.0	µg/L	1	50.0	<0.370	104	84.8 - 119
Dichlorodifluoromethane		39.5	µg/L	1	50.0	<0.450	79	14.2 - 155
Chloromethane (methyl chloride)	[3]	390	µg/L	1	50.0	<0.590	780	32.6 - 168
Vinyl Chloride		42.0	µg/L	1	50.0	<0.690	84	34.4 - 149
Bromomethane (methyl bromide)		47.6	µg/L	1	50.0	<0.750	95	30 - 155
Chloroethane		46.3	µg/L	1	50.0	<0.570	93	29.6 - 160
Trichlorofluoromethane		40.1	µg/L	1	50.0	<0.470	80	33.5 - 178
Acetone		40.7	µg/L	1	50.0	<1.75	81	12.6 - 128
Iodomethane (methyl iodide)		51.1	µg/L	1	50.0	<0.320	102	61 - 128
Carbon Disulfide		50.8	µg/L	1	50.0	<0.250	102	67.1 - 143
Acrylonitrile		55.1	µg/L	1	50.0	<0.320	110	77 - 127
2-Butanone (MEK)		49.3	µg/L	1	50.0	<0.810	99	36.1 - 113
4-Methyl-2-pentanone (MIBK)	[4]	68.4	µg/L	1	50.0	<0.790	137	71.2 - 125
2-Hexanone		63.9	µg/L	1	50.0	<0.510	128	49.8 - 128
trans 1,4-Dichloro-2-butene		43.1	µg/L	1	50.0	<0.490	86	10 - 171
1,1-Dichloroethene		50.5	µg/L	1	50.0	<0.400	101	66 - 134
Methylene chloride		52.4	µg/L	1	50.0	<0.450	105	77.2 - 116
MTBE		65.1	µg/L	1	50.0	9.4	111	81.4 - 125
trans-1,2-Dichloroethene		52.2	µg/L	1	50.0	<0.330	104	78.5 - 120
1,1-Dichloroethane		52.5	µg/L	1	50.0	<0.290	105	82.2 - 129
cis-1,2-Dichloroethene		52.8	µg/L	1	50.0	<0.200	106	84.5 - 119
2,2-Dichloropropane	[5]	20.6	µg/L	1	50.0	<0.420	41	44.8 - 128
1,2-Dichloroethane (EDC)		52.1	µg/L	1	50.0	<0.350	104	71.6 - 151
Chloroform		51.2	µg/L	1	50.0	<0.270	102	81.7 - 129
1,1,1-Trichloroethane		52.1	µg/L	1	50.0	<0.230	104	77.8 - 140
1,1-Dichloropropene		51.6	µg/L	1	50.0	<0.340	103	79.3 - 128
Benzene		53.7	µg/L	1	50.0	<0.240	107	81.5 - 124
Carbon Tetrachloride		52.9	µg/L	1	50.0	<0.300	106	62.1 - 163
1,2-Dichloropropane		53.8	µg/L	1	50.0	<0.360	108	83.9 - 123

continued ...

[3] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[4] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[5] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Trichloroethene (TCE)	50.8	µg/L	1	50.0	<0.300	102	80.5 - 113
Dibromomethane (methylene bromide)	53.9	µg/L	1	50.0	<0.470	108	85.2 - 123
Bromodichloromethane	52.4	µg/L	1	50.0	<0.280	105	82.8 - 139
2-Chloroethyl vinyl ether	<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7
cis-1,3-Dichloropropene	46.7	µg/L	1	50.0	<0.330	93	73.1 - 132
trans-1,3-Dichloropropene	45.6	µg/L	1	50.0	<0.380	91	73.4 - 135
Toluene	52.5	µg/L	1	50.0	<0.270	105	81.6 - 122
1,1,2-Trichloroethane	52.9	µg/L	1	50.0	<0.280	106	80.8 - 121
1,3-Dichloropropane	54.5	µg/L	1	50.0	<0.270	109	82.8 - 120
Dibromochloromethane	53.2	µg/L	1	50.0	<0.320	106	82.9 - 137
1,2-Dibromoethane (EDB)	55.2	µg/L	1	50.0	<0.340	110	84 - 120
Tetrachloroethene (PCE)	35.5	µg/L	1	50.0	<0.280	71	20.9 - 114
Chlorobenzene	52.0	µg/L	1	50.0	<0.260	104	82.2 - 116
1,1,1,2-Tetrachloroethane	52.1	µg/L	1	50.0	<0.220	104	83.7 - 132
Ethylbenzene	50.5	µg/L	1	50.0	<0.260	101	80.9 - 124
m,p-Xylene	102	µg/L	1	100	<0.540	102	79.8 - 127
Bromoform	54.8	µg/L	1	50.0	<0.230	110	72.2 - 128
Styrene	40.0	µg/L	1	50.0	<0.210	80	10 - 202
o-Xylene	51.7	µg/L	1	50.0	<0.260	103	82.9 - 130
1,1,2,2-Tetrachloroethane	58.3	µg/L	1	50.0	<0.420	117	72.7 - 143
2-Chlorotoluene	50.2	µg/L	1	50.0	<0.240	100	76.5 - 121
1,2,3-Trichloropropane	59.7	µg/L	1	50.0	<0.430	119	68.6 - 147
Isopropylbenzene	53.0	µg/L	1	50.0	<0.260	106	74.1 - 123
Bromobenzene	55.8	µg/L	1	50.0	<0.260	112	73.2 - 126
n-Propylbenzene	49.9	µg/L	1	50.0	<0.310	100	74.4 - 119
1,3,5-Trimethylbenzene	51.1	µg/L	1	50.0	<0.270	102	77 - 118
tert-Butylbenzene	52.1	µg/L	1	50.0	<0.300	104	75.9 - 121
1,2,4-Trimethylbenzene	50.7	µg/L	1	50.0	<0.290	101	73.4 - 124
1,4-Dichlorobenzene (para)	50.6	µg/L	1	50.0	<0.240	101	77.6 - 111
sec-Butylbenzene	51.5	µg/L	1	50.0	<0.280	103	72.5 - 121
1,3-Dichlorobenzene (meta)	51.5	µg/L	1	50.0	<0.310	103	76.5 - 114
p-Isopropyltoluene	50.8	µg/L	1	50.0	<0.330	102	72.7 - 121
4-Chlorotoluene	51.8	µg/L	1	50.0	<0.290	104	77.2 - 120
1,2-Dichlorobenzene (ortho)	52.2	µg/L	1	50.0	<0.270	104	79.2 - 115
n-Butylbenzene	48.0	µg/L	1	50.0	<0.300	96	68.7 - 124
1,2-Dibromo-3-chloropropane	63.2	µg/L	1	50.0	<0.680	126	62 - 154
1,2,3-Trichlorobenzene [6]	62.2	µg/L	1	50.0	<0.330	124	71.7 - 115
1,2,4-Trichlorobenzene	53.1	µg/L	1	50.0	<0.340	106	78 - 115
Naphthalene [7]	67.8	µg/L	1	50.0	<0.280	136	78.3 - 115
Hexachlorobutadiene	49.2	µg/L	1	50.0	<0.540	98	58.7 - 124

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane	52.6	µg/L	1	50.0	<0.370	105	84.8 - 119	1	20

continued . . .

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Dichlorodifluoromethane		38.4	µg/L	1	50.0	<0.450	77	14.2 - 155	3	20
Chloromethane (methyl chloride)	[8]	188	µg/L	1	50.0	<0.590	376	32.6 - 168	70	20
Vinyl Chloride		44.2	µg/L	1	50.0	<0.690	88	34.4 - 149	5	20
Bromomethane (methyl bromide)		44.8	µg/L	1	50.0	<0.750	90	30 - 155	6	20
Chloroethane		47.8	µg/L	1	50.0	<0.570	96	29.6 - 160	3	20
Trichlorofluoromethane		40.8	µg/L	1	50.0	<0.470	82	33.5 - 178	2	20
Acetone		43.0	µg/L	1	50.0	<1.75	86	12.6 - 128	6	20
Iodomethane (methyl iodide)		50.9	µg/L	1	50.0	<0.320	102	61 - 128	0	20
Carbon Disulfide		52.0	µg/L	1	50.0	<0.250	104	67.1 - 143	2	20
Acrylonitrile		57.6	µg/L	1	50.0	<0.320	115	77 - 127	4	20
2-Butanone (MEK)		47.5	µg/L	1	50.0	<0.810	95	36.1 - 113	4	20
4-Methyl-2-pentanone (MIBK)	[9]	70.6	µg/L	1	50.0	<0.790	141	71.2 - 125	3	20
2-Hexanone	[10]	66.4	µg/L	1	50.0	<0.510	133	49.8 - 128	4	20
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.490	89	10 - 171	3	20
1,1-Dichloroethene		52.8	µg/L	1	50.0	<0.400	106	66 - 134	4	20
Methylene chloride		53.0	µg/L	1	50.0	<0.450	106	77.2 - 116	1	20
MTBE		67.7	µg/L	1	50.0	9.4	117	81.4 - 125	4	20
trans-1,2-Dichloroethene		54.0	µg/L	1	50.0	<0.330	108	78.5 - 120	3	20
1,1-Dichloroethane		53.6	µg/L	1	50.0	<0.290	107	82.2 - 129	2	20
cis-1,2-Dichloroethene		54.5	µg/L	1	50.0	<0.200	109	84.5 - 119	3	20
2,2-Dichloropropane	[11]	20.4	µg/L	1	50.0	<0.420	41	44.8 - 128	1	20
1,2-Dichloroethane (EDC)		54.3	µg/L	1	50.0	<0.350	109	71.6 - 151	4	20
Chloroform		52.5	µg/L	1	50.0	<0.270	105	81.7 - 129	2	20
1,1,1-Trichloroethane		53.1	µg/L	1	50.0	<0.230	106	77.8 - 140	2	20
1,1-Dichloropropene		52.4	µg/L	1	50.0	<0.340	105	79.3 - 128	2	20
Benzene		54.2	µg/L	1	50.0	<0.240	108	81.5 - 124	1	20
Carbon Tetrachloride		54.5	µg/L	1	50.0	<0.300	109	62.1 - 163	3	20
1,2-Dichloropropane		54.5	µg/L	1	50.0	<0.360	109	83.9 - 123	1	20
Trichloroethene (TCE)		52.5	µg/L	1	50.0	<0.300	105	80.5 - 113	3	20
Dibromomethane (methylene bromide)		55.3	µg/L	1	50.0	<0.470	111	85.2 - 123	3	20
Bromodichloromethane		54.4	µg/L	1	50.0	<0.280	109	82.8 - 139	4	20
2-Chloroethyl vinyl ether		<0.330	µg/L	1	50.0	<0.330	0	0 - 24.7	0	20
cis-1,3-Dichloropropene		47.9	µg/L	1	50.0	<0.330	96	73.1 - 132	2	20
trans-1,3-Dichloropropene		47.5	µg/L	1	50.0	<0.380	95	73.4 - 135	4	20
Toluene		53.8	µg/L	1	50.0	<0.270	108	81.6 - 122	2	20
1,1,2-Trichloroethane		56.2	µg/L	1	50.0	<0.280	112	80.8 - 121	6	20
1,3-Dichloropropane		56.5	µg/L	1	50.0	<0.270	113	82.8 - 120	4	20
Dibromochloromethane		56.9	µg/L	1	50.0	<0.320	114	82.9 - 137	7	20
1,2-Dibromoethane (EDB)		57.6	µg/L	1	50.0	<0.340	115	84 - 120	4	20
Tetrachloroethene (PCE)		36.9	µg/L	1	50.0	<0.280	74	20.9 - 114	4	20
Chlorobenzene		52.8	µg/L	1	50.0	<0.260	106	82.2 - 116	2	20

continued . . .

[8] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD outside RPD limits.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[10] MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

matrix spikes continued . . .

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	54.3	μg/L	1	50.0	<0.220	109	83.7 - 132	4	20
Ethylbenzene	52.4	μg/L	1	50.0	<0.260	105	80.9 - 124	4	20
m,p-Xylene	105	μg/L	1	100	<0.540	105	79.8 - 127	3	20
Bromoform	57.0	μg/L	1	50.0	<0.230	114	72.2 - 128	4	20
Styrene	36.4	μg/L	1	50.0	<0.210	73	10 - 202	9	20
o-Xylene	52.9	μg/L	1	50.0	<0.260	106	82.9 - 130	2	20
1,1,2,2-Tetrachloroethane	60.2	μg/L	1	50.0	<0.420	120	72.7 - 143	3	20
2-Chlorotoluene	51.7	μg/L	1	50.0	<0.240	103	76.5 - 121	3	20
1,2,3-Trichloropropane	64.0	μg/L	1	50.0	<0.430	128	68.6 - 147	7	20
Isopropylbenzene	54.7	μg/L	1	50.0	<0.260	109	74.1 - 123	3	20
Bromobenzene	55.5	μg/L	1	50.0	<0.260	111	73.2 - 126	0	20
n-Propylbenzene	51.9	μg/L	1	50.0	<0.310	104	74.4 - 119	4	20
1,3,5-Trimethylbenzene	53.4	μg/L	1	50.0	<0.270	107	77 - 118	4	20
tert-Butylbenzene	53.9	μg/L	1	50.0	<0.300	108	75.9 - 121	3	20
1,2,4-Trimethylbenzene	52.2	μg/L	1	50.0	<0.290	104	73.4 - 124	3	20
1,4-Dichlorobenzene (para)	52.4	μg/L	1	50.0	<0.240	105	77.6 - 111	4	20
sec-Butylbenzene	53.5	μg/L	1	50.0	<0.280	107	72.5 - 121	4	20
1,3-Dichlorobenzene (meta)	52.7	μg/L	1	50.0	<0.310	105	76.5 - 114	2	20
p-Isopropyltoluene	52.3	μg/L	1	50.0	<0.330	105	72.7 - 121	3	20
4-Chlorotoluene	53.5	μg/L	1	50.0	<0.290	107	77.2 - 120	3	20
1,2-Dichlorobenzene (ortho)	53.8	μg/L	1	50.0	<0.270	108	79.2 - 115	3	20
n-Butylbenzene	50.2	μg/L	1	50.0	<0.300	100	68.7 - 124	4	20
1,2-Dibromo-3-chloropropane	66.4	μg/L	1	50.0	<0.680	133	62 - 154	5	20
1,2,3-Trichlorobenzene [12]	72.0	μg/L	1	50.0	<0.330	144	71.7 - 115	15	20
1,2,4-Trichlorobenzene	57.2	μg/L	1	50.0	<0.340	114	78 - 115	7	20
Naphthalene [13]	73.2	μg/L	1	50.0	<0.280	146	78.3 - 115	8	20
Hexachlorobutadiene	53.4	μg/L	1	50.0	<0.540	107	58.7 - 124	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	48.0	48.8	μg/L	1	50	96	98	84.3 - 127
Toluene-d8	49.4	50.1	μg/L	1	50	99	100	90.5 - 107
4-Bromofluorobenzene (4-BFB)	48.7	49.3	μg/L	1	50	97	99	88.7 - 120

Standard (CCV-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control. RPD within RPD limits.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-2)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-1)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dichlorodifluoromethane	[14]	µg/L	50.0	38.4	77	80 - 120	2009-10-01
Chloromethane (methyl chloride)		µg/L	50.0	40.7	81	80 - 120	2009-10-01
Vinyl Chloride		µg/L	50.0	42.6	85	80 - 120	2009-10-01
Bromomethane (methyl bromide)		µg/L	50.0	42.2	84	80 - 120	2009-10-01
Chloroethane		µg/L	50.0	41.8	84	80 - 120	2009-10-01
Trichlorofluoromethane	[15]	µg/L	50.0	39.7	79	80 - 120	2009-10-01
Acetone	[16]	µg/L	50.0	99.0	198	80 - 120	2009-10-01
Iodomethane (methyl iodide)		µg/L	50.0	57.0	114	80 - 120	2009-10-01
Carbon Disulfide		µg/L	50.0	57.9	116	80 - 120	2009-10-01
Acrylonitrile		µg/L	50.0	50.8	102	80 - 120	2009-10-01
2-Butanone (MEK)	[17]	µg/L	50.0	39.6	79	80 - 120	2009-10-01
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	48.5	97	80 - 120	2009-10-01
2-Hexanone		µg/L	50.0	43.2	86	80 - 120	2009-10-01
trans 1,4-Dichloro-2-butene		µg/L	50.0	53.4	107	80 - 120	2009-10-01
1,1-Dichloroethene		µg/L	50.0	55.9	112	80 - 120	2009-10-01
Methylene chloride		µg/L	50.0	55.5	111	80 - 120	2009-10-01
MTBE		µg/L	50.0	55.2	110	80 - 120	2009-10-01
trans-1,2-Dichloroethene		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloroethane		µg/L	50.0	57.0	114	80 - 120	2009-10-01
cis-1,2-Dichloroethene		µg/L	50.0	57.4	115	80 - 120	2009-10-01
2,2-Dichloropropane	[18]	µg/L	50.0	61.5	123	80 - 120	2009-10-01
1,2-Dichloroethane (EDC)		µg/L	50.0	56.5	113	80 - 120	2009-10-01

continued ...

[14] Analyte recovery outside CCV limits. Concentration biased low. •
[15] Analyte recovery outside CCV limits. Concentration biased low. •
[16] Analyte recovery outside CCV limits. Concentration biased high. •
[17] Analyte recovery outside CCV limits. Concentration biased low. •
[18] Analyte recovery outside CCV limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloroform		µg/L	50.0	56.0	112	80 - 120	2009-10-01
1,1,1-Trichloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
1,1-Dichloropropene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Benzene		µg/L	50.0	58.4	117	80 - 120	2009-10-01
Carbon Tetrachloride		µg/L	50.0	59.5	119	80 - 120	2009-10-01
1,2-Dichloropropane		µg/L	50.0	58.6	117	80 - 120	2009-10-01
Trichloroethene (TCE)		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Dibromomethane (methylene bromide)		µg/L	50.0	56.6	113	80 - 120	2009-10-01
Bromodichloromethane		µg/L	50.0	58.8	118	80 - 120	2009-10-01
2-Chloroethyl vinyl ether	[19]	µg/L	50.0	39.4	79	80 - 120	2009-10-01
cis-1,3-Dichloropropene		µg/L	50.0	59.6	119	80 - 120	2009-10-01
trans-1,3-Dichloropropene		µg/L	50.0	57.1	114	80 - 120	2009-10-01
Toluene		µg/L	50.0	58.6	117	80 - 120	2009-10-01
1,1,2-Trichloroethane		µg/L	50.0	54.5	109	80 - 120	2009-10-01
1,3-Dichloropropane		µg/L	50.0	55.5	111	80 - 120	2009-10-01
Dibromochloromethane		µg/L	50.0	57.2	114	80 - 120	2009-10-01
1,2-Dibromoethane (EDB)		µg/L	50.0	55.0	110	80 - 120	2009-10-01
Tetrachloroethene (PCE)		µg/L	50.0	42.8	86	80 - 120	2009-10-01
Chlorobenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,1,1,2-Tetrachloroethane		µg/L	50.0	57.6	115	80 - 120	2009-10-01
Ethylbenzene		µg/L	50.0	58.1	116	80 - 120	2009-10-01
m,p-Xylene		µg/L	100	117	117	80 - 120	2009-10-01
Bromoform		µg/L	50.0	55.4	111	80 - 120	2009-10-01
Styrene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
o-Xylene		µg/L	50.0	58.5	117	80 - 120	2009-10-01
1,1,2,2-Tetrachloroethane		µg/L	50.0	52.7	105	80 - 120	2009-10-01
2-Chlorotoluene		µg/L	50.0	55.2	110	80 - 120	2009-10-01
1,2,3-Trichloropropane		µg/L	50.0	50.2	100	80 - 120	2009-10-01
Isopropylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
Bromobenzene		µg/L	50.0	54.5	109	80 - 120	2009-10-01
n-Propylbenzene		µg/L	50.0	57.0	114	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		µg/L	50.0	58.3	117	80 - 120	2009-10-01
tert-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		µg/L	50.0	57.3	115	80 - 120	2009-10-01
1,4-Dichlorobenzene (para)		µg/L	50.0	55.6	111	80 - 120	2009-10-01
sec-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,3-Dichlorobenzene (meta)		µg/L	50.0	56.8	114	80 - 120	2009-10-01
p-Isopropyltoluene		µg/L	50.0	59.1	118	80 - 120	2009-10-01
4-Chlorotoluene		µg/L	50.0	56.7	113	80 - 120	2009-10-01
1,2-Dichlorobenzene (ortho)		µg/L	50.0	55.4	111	80 - 120	2009-10-01
n-Butylbenzene		µg/L	50.0	58.7	117	80 - 120	2009-10-01
1,2-Dibromo-3-chloropropane		µg/L	50.0	46.6	93	80 - 120	2009-10-01
1,2,3-Trichlorobenzene		µg/L	50.0	50.6	101	80 - 120	2009-10-01
1,2,4-Trichlorobenzene		µg/L	50.0	53.8	108	80 - 120	2009-10-01
Naphthalene		µg/L	50.0	48.2	96	80 - 120	2009-10-01

continued ...

[19] Analyte recovery outside CCV limits. Concentration biased low. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexachlorobutadiene	[20]	μg/L	50.0	61.9	124	80 - 120	2009-10-01

Standard (CCV-2)

QC Batch: 64104 Date Analyzed: 2009-10-01 Analyzed By: KB

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		μg/L	50.0	51.9	104	80 - 120	2009-10-01
Benzene		μg/L	50.0	54.0	108	80 - 120	2009-10-01
Toluene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
Ethylbenzene		μg/L	50.0	53.4	107	80 - 120	2009-10-01
m,p-Xylene		μg/L	100	107	107	80 - 120	2009-10-01
o-Xylene		μg/L	50.0	53.6	107	80 - 120	2009-10-01
n-Propylbenzene		μg/L	50.0	52.0	104	80 - 120	2009-10-01
1,3,5-Trimethylbenzene		μg/L	50.0	53.1	106	80 - 120	2009-10-01
1,2,4-Trimethylbenzene		μg/L	50.0	52.8	106	80 - 120	2009-10-01
Naphthalene		μg/L	50.0	50.2	100	80 - 120	2009-10-01

[20] Analyte recovery outside CCV limits. Concentration biased high. •

9093019

zia engineering & environmental consultants, llc

7400 Jefferson NE, Ste. F-201
Las Cruces, NM 88011
575-532-4526 p
575-532-4527 f

CHAIN OF CUSTODY RECORD

PROJECT NO.: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO									REMARKS
9-23-09	1100	HTSA-0197-HW01-152-0909	Water	211158	6	X	X									

ANALYSIS REQUESTED

PROJECT INFORMATION

PROJECT MANAGER: Brad Davis

SHIPPING ID NO.:

VIA: Lab Courier

SAMPLES RECEIVED: intact

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS:

GOOD CONDITION/COLD: TR 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME): GABRIEL GALLITA

RECEIVED BY: (SIGNATURE)

(TIME/DATE):

2. RELINQUISHED BY: (SIGNATURE)

(PRINTED NAME):

RECEIVED BY: (SIGNATURE)

(TIME/DATE):

3. RECEIVED BY LAB: (SIGNATURE) Carol Fox

(PRINTED NAME): Carol Fox

(COMPANY): Trace

(TIME/DATE): 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS

Fed Ex 7979 7307 2490

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - RETURN WITH SAMPLES; YELLOW - LAB; PINK - SITE COPY

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: October 6, 2009

Work Order: 9093022

Project Name: HELSTF TSA Groundwater Monitoring

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211160	HTSA-0197-RB-001-0909	water	2009-09-29	10:00	2009-09-30

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:

For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

Case Narrative

Samples for project HELSTF TSA Groundwater Monitoring were received by TraceAnalysis, Inc. on 2009-09-30 and assigned to work order 9093022. Samples for work order 9093022 were received intact without headspace and at a temperature of 1.4 deg. C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH GRO	S 8015B	54693	2009-09-30 at 14:19	64046	2009-09-30 at 14:19
Volatiles	S 8260B	54774	2009-10-02 at 12:00	64142	2009-10-02 at 12:00

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9093022 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 211160 - HTSA-0197-RB-001-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	Sample Preparation:	2009-09-30	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.103	mg/L	1	0.100	103	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.108	mg/L	1	0.100	108	80 - 109

Sample: 211160 - HTSA-0197-RB-001-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64142	Date Analyzed:	2009-10-02	Analyzed By:	JG
Prep Batch:	54774	Sample Preparation:	2009-10-02	Prepared By:	JG

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.122	<1.00	<0.122	μg/L	1	0.122	1	0.122
Benzene	U	<0.113	<1.00	<0.113	μg/L	1	0.113	1	0.113
Toluene	J	**0.413**	<1.00	<0.117	μg/L	1	0.117	1	0.117
Ethylbenzene	U	<0.174	<1.00	<0.174	μg/L	1	0.174	1	0.174
m,p-Xylene	J	**0.341**	<1.00	<0.220	μg/L	1	0.220	1	0.22
o-Xylene	J	**0.152**	<1.00	<0.115	μg/L	1	0.115	1	0.115
n-Propylbenzene	U	<0.136	<1.00	<0.136	μg/L	1	0.136	1	0.136
1,3,5-Trimethylbenzene	U	<0.124	<1.00	<0.124	μg/L	1	0.124	1	0.124
1,2,4-Trimethylbenzene	[1] J	**0.142**	<1.00	<0.114	μg/L	1	0.114	1	0.114
Naphthalene	[2] U	<0.672	<5.00	<0.672	μg/L	1	0.672	5	0.672

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.3	μg/L	1	50.0	101	70 - 130
Toluene-d8		48.9	μg/L	1	50.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)		48.8	μg/L	1	50.0	98	70 - 130

[1] Concentration biased low.
[2] Concentration biased low.

Method Blank (1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0991	mg/L	1	0.100	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0981	mg/L	1	0.100	98	80 - 109

Method Blank (1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.169	μg/L	0.169
Dichlorodifluoromethane		<0.145	μg/L	0.145
Chloromethane (methyl chloride)		<0.164	μg/L	0.164
Vinyl Chloride		<0.110	μg/L	0.11
Bromomethane (methyl bromide)		<0.540	μg/L	0.54
Chloroethane		<0.232	μg/L	0.232
Trichlorofluoromethane		<0.149	μg/L	0.149
Acetone		<0.893	μg/L	0.893
Iodomethane (methyl iodide)		<0.104	μg/L	0.104
Carbon Disulfide		<0.120	μg/L	0.12
Acrylonitrile		<0.189	μg/L	0.189
2-Butanone (MEK)		2.44	μg/L	0.218
4-Methyl-2-pentanone (MIBK)		<0.554	μg/L	0.554
2-Hexanone		<0.863	μg/L	0.863
trans 1,4-Dichloro-2-butene		<0.607	μg/L	0.607
1,1-Dichloroethene		<0.102	μg/L	0.102
Methylene chloride		<0.270	μg/L	0.27
MTBE		<0.122	μg/L	0.122
trans-1,2-Dichloroethene		<0.168	μg/L	0.168
1,1-Dichloroethane		<0.107	μg/L	0.107
cis-1,2-Dichloroethene		<0.151	μg/L	0.151
2,2-Dichloropropane		<0.167	μg/L	0.167
1,2-Dichloroethane (EDC)		<0.0890	μg/L	0.089
Chloroform		<0.121	μg/L	0.121
1,1,1-Trichloroethane		<0.170	μg/L	0.17
1,1-Dichloropropene		<0.156	μg/L	0.156
Benzene		<0.113	μg/L	0.113
Carbon Tetrachloride		<0.0930	μg/L	0.093

continued ...

method blank continued . . .

Parameter	Flag	Result	Units	Reporting Limits
1,2-Dichloropropane		<0.129	μg/L	0.129
Trichloroethene (TCE)		<0.160	μg/L	0.16
Dibromomethane (methylene bromide)		<0.137	μg/L	0.137
Bromodichloromethane		<0.107	μg/L	0.107
2-Chloroethyl vinyl ether		<0.257	μg/L	0.257
cis-1,3-Dichloropropene		<0.109	μg/L	0.109
trans-1,3-Dichloropropene		<0.181	μg/L	0.181
Toluene		<0.117	μg/L	0.117
1,1,2-Trichloroethane		<0.143	μg/L	0.143
1,3-Dichloropropane		<0.191	μg/L	0.191
Dibromochloromethane		<0.118	μg/L	0.118
1,2-Dibromoethane (EDB)		<0.131	μg/L	0.131
Tetrachloroethene (PCE)		<0.353	μg/L	0.353
Chlorobenzene		<0.135	μg/L	0.135
1,1,1,2-Tetrachloroethane		<0.263	μg/L	0.263
Ethylbenzene		<0.174	μg/L	0.174
m,p-Xylene		<0.220	μg/L	0.22
Bromoform		<0.385	μg/L	0.385
Styrene		<0.413	μg/L	0.413
o-Xylene		<0.115	μg/L	0.115
1,1,2,2-Tetrachloroethane		<0.766	μg/L	0.766
2-Chlorotoluene		<0.132	μg/L	0.132
1,2,3-Trichloropropane		<0.599	μg/L	0.599
Isopropylbenzene		<0.145	μg/L	0.145
Bromobenzene		<0.266	μg/L	0.266
n-Propylbenzene		<0.136	μg/L	0.136
1,3,5-Trimethylbenzene		<0.124	μg/L	0.124
tert-Butylbenzene		<0.136	μg/L	0.136
1,2,4-Trimethylbenzene		<0.114	μg/L	0.114
1,4-Dichlorobenzene (para)		<0.230	μg/L	0.23
sec-Butylbenzene		<0.452	μg/L	0.452
1,3-Dichlorobenzene (meta)		<0.214	μg/L	0.214
p-Isopropyltoluene		<0.126	μg/L	0.126
4-Chlorotoluene		<0.161	μg/L	0.161
1,2-Dichlorobenzene (ortho)		<0.357	μg/L	0.357
n-Butylbenzene		<0.125	μg/L	0.125
1,2-Dibromo-3-chloropropane		<0.977	μg/L	0.977
1,2,3-Trichlorobenzene		<0.400	μg/L	0.4
1,2,4-Trichlorobenzene		<0.227	μg/L	0.227
Naphthalene		<0.672	μg/L	0.672
Hexachlorobutadiene		<0.198	μg/L	0.198

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	μg/L	1	50.0	100	70 - 130
Toluene-d8		48.4	μg/L	1	50.0	97	70 - 130
4-Bromofluorobenzene (4-BFB)		50.2	μg/L	1	50.0	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.08	mg/L	1	1.00	<0.152	108	75.5 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	1.03	mg/L	1	1.00	<0.152	103	75.5 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.105	0.101	mg/L	1	0.100	105	101	78.2 - 121
4-Bromofluorobenzene (4-BFB)	0.103	0.100	mg/L	1	0.100	103	100	82.2 - 118

Laboratory Control Spike (LCS-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		49.7	µg/L	1	50.0	<0.169	99	70 - 130
Dichlorodifluoromethane		53.9	µg/L	1	50.0	<0.145	108	70 - 130
Chloromethane (methyl chloride)		56.9	µg/L	1	50.0	<0.164	114	70 - 130
Vinyl Chloride		51.3	µg/L	1	50.0	<0.110	103	70 - 130
Bromomethane (methyl bromide)		65.2	µg/L	1	50.0	<0.540	130	70 - 130
Chloroethane		64.4	µg/L	1	50.0	<0.232	129	70 - 130
Trichlorofluoromethane		52.2	µg/L	1	50.0	<0.149	104	70 - 130
Acetone	[3]	186	µg/L	1	50.0	<0.893	372	70 - 130
Iodomethane (methyl iodide)		54.2	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		52.7	µg/L	1	50.0	<0.120	105	70 - 130
Acrylonitrile		48.5	µg/L	1	50.0	<0.189	97	70 - 130
2-Butanone (MEK)		42.5	µg/L	1	50.0	2.44	85	70 - 130
4-Methyl-2-pentanone (MIBK)		50.4	µg/L	1	50.0	<0.554	101	70 - 130
2-Hexanone		45.0	µg/L	1	50.0	<0.863	90	70 - 130
trans 1,4-Dichloro-2-butene		44.6	µg/L	1	50.0	<0.607	89	70 - 130
1,1-Dichloroethene		51.4	µg/L	1	50.0	<0.102	103	70 - 130
Methylene chloride		48.9	µg/L	1	50.0	<0.270	98	70 - 130
MTBE		51.2	µg/L	1	50.0	<0.122	102	70 - 130
trans-1,2-Dichloroethene		50.6	µg/L	1	50.0	<0.168	101	70 - 130
1,1-Dichloroethane		53.3	µg/L	1	50.0	<0.107	107	70 - 130

continued ...

[3] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
cis-1,2-Dichloroethene	49.2	µg/L	1	50.0	<0.151	98	70 - 130
2,2-Dichloropropane	49.6	µg/L	1	50.0	<0.167	99	70 - 130
1,2-Dichloroethane (EDC)	50.4	µg/L	1	50.0	<0.0890	101	70 - 130
Chloroform	49.3	µg/L	1	50.0	<0.121	99	70 - 130
1,1,1-Trichloroethane	53.1	µg/L	1	50.0	<0.170	106	70 - 130
1,1-Dichloropropene	51.7	µg/L	1	50.0	<0.156	103	70 - 130
Benzene	50.9	µg/L	1	50.0	<0.113	102	70 - 130
Carbon Tetrachloride	53.7	µg/L	1	50.0	<0.0930	107	70 - 130
1,2-Dichloropropane	50.0	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)	45.4	µg/L	1	50.0	<0.160	91	70 - 130
Dibromomethane (methylene bromide)	42.6	µg/L	1	50.0	<0.137	85	70 - 130
Bromodichloromethane	49.3	µg/L	1	50.0	<0.107	99	70 - 130
2-Chloroethyl vinyl ether	42.9	µg/L	1	50.0	<0.257	86	70 - 130
cis-1,3-Dichloropropene	51.0	µg/L	1	50.0	<0.109	102	70 - 130
trans-1,3-Dichloropropene	49.4	µg/L	1	50.0	<0.181	99	70 - 130
Toluene	47.5	µg/L	1	50.0	<0.117	95	70 - 130
1,1,2-Trichloroethane	48.1	µg/L	1	50.0	<0.143	96	70 - 130
1,3-Dichloropropane	48.2	µg/L	1	50.0	<0.191	96	70 - 130
Dibromochloromethane	48.7	µg/L	1	50.0	<0.118	97	70 - 130
1,2-Dibromoethane (EDB)	47.0	µg/L	1	50.0	<0.131	94	70 - 130
Tetrachloroethene (PCE)	39.6	µg/L	1	50.0	<0.353	79	70 - 130
Chlorobenzene	48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane	45.4	µg/L	1	50.0	<0.263	91	70 - 130
Ethylbenzene	45.2	µg/L	1	50.0	<0.174	90	70 - 130
m,p-Xylene	93.6	µg/L	1	100	<0.220	94	70 - 130
Bromoform	46.3	µg/L	1	50.0	<0.385	93	70 - 130
Styrene	50.3	µg/L	1	50.0	<0.413	101	70 - 130
o-Xylene	46.5	µg/L	1	50.0	<0.115	93	70 - 130
1,1,2,2-Tetrachloroethane	43.7	µg/L	1	50.0	<0.766	87	70 - 130
2-Chlorotoluene	43.6	µg/L	1	50.0	<0.132	87	70 - 130
1,2,3-Trichloropropane	45.6	µg/L	1	50.0	<0.599	91	70 - 130
Isopropylbenzene	47.2	µg/L	1	50.0	<0.145	94	70 - 130
Bromobenzene	44.4	µg/L	1	50.0	<0.266	89	70 - 130
n-Propylbenzene	44.4	µg/L	1	50.0	<0.136	89	70 - 130
1,3,5-Trimethylbenzene	43.3	µg/L	1	50.0	<0.124	87	70 - 130
tert-Butylbenzene	44.9	µg/L	1	50.0	<0.136	90	70 - 130
1,2,4-Trimethylbenzene	39.8	µg/L	1	50.0	<0.114	80	70 - 130
1,4-Dichlorobenzene (para)	40.0	µg/L	1	50.0	<0.230	80	70 - 130
sec-Butylbenzene	44.3	µg/L	1	50.0	<0.452	89	70 - 130
1,3-Dichlorobenzene (meta)	42.2	µg/L	1	50.0	<0.214	84	70 - 130
p-Isopropyltoluene	44.2	µg/L	1	50.0	<0.126	88	70 - 130
4-Chlorotoluene	44.9	µg/L	1	50.0	<0.161	90	70 - 130
1,2-Dichlorobenzene (ortho)	44.0	µg/L	1	50.0	<0.357	88	70 - 130
n-Butylbenzene	43.8	µg/L	1	50.0	<0.125	88	70 - 130
1,2-Dibromo-3-chloropropane	40.1	µg/L	1	50.0	<0.977	80	70 - 130
1,2,3-Trichlorobenzene	38.2	µg/L	1	50.0	<0.400	76	70 - 130
1,2,4-Trichlorobenzene	41.5	µg/L	1	50.0	<0.227	83	70 - 130

continued ...

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Naphthalene	39.3	μg/L	1	50.0	<0.672	79	70 - 130
Hexachlorobutadiene	38.6	μg/L	1	50.0	<0.198	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		49.2	μg/L	1	50.0	<0.169	98	70 - 130	1	20
Dichlorodifluoromethane		54.6	μg/L	1	50.0	<0.145	109	70 - 130	1	20
Chloromethane (methyl chloride)		58.1	μg/L	1	50.0	<0.164	116	70 - 130	2	20
Vinyl Chloride		51.8	μg/L	1	50.0	<0.110	104	70 - 130	1	20
Bromomethane (methyl bromide)		62.4	μg/L	1	50.0	<0.540	125	70 - 130	4	20
Chloroethane	[4]	65.9	μg/L	1	50.0	<0.232	132	70 - 130	2	20
Trichlorofluoromethane		53.0	μg/L	1	50.0	<0.149	106	70 - 130	2	20
Acetone	[5]	193	μg/L	1	50.0	<0.893	386	70 - 130	4	20
Iodomethane (methyl iodide)		53.7	μg/L	1	50.0	<0.104	107	70 - 130	1	20
Carbon Disulfide		52.3	μg/L	1	50.0	<0.120	105	70 - 130	1	20
Acrylonitrile		48.5	μg/L	1	50.0	<0.189	97	70 - 130	0	20
2-Butanone (MEK)		44.0	μg/L	1	50.0	2.44	88	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)		50.1	μg/L	1	50.0	<0.554	100	70 - 130	1	20
2-Hexanone		46.6	μg/L	1	50.0	<0.863	93	70 - 130	4	20
trans 1,4-Dichloro-2-butene		46.8	μg/L	1	50.0	<0.607	94	70 - 130	5	20
1,1-Dichloroethene		51.5	μg/L	1	50.0	<0.102	103	70 - 130	0	20
Methylene chloride		48.2	μg/L	1	50.0	<0.270	96	70 - 130	1	20
MTBE		50.8	μg/L	1	50.0	<0.122	102	70 - 130	1	20
trans-1,2-Dichloroethene		50.1	μg/L	1	50.0	<0.168	100	70 - 130	1	20
1,1-Dichloroethane		52.7	μg/L	1	50.0	<0.107	105	70 - 130	1	20
cis-1,2-Dichloroethene		49.1	μg/L	1	50.0	<0.151	98	70 - 130	0	20
2,2-Dichloropropane		49.4	μg/L	1	50.0	<0.167	99	70 - 130	0	20
1,2-Dichloroethane (EDC)		50.6	μg/L	1	50.0	<0.0890	101	70 - 130	0	20
Chloroform		48.7	μg/L	1	50.0	<0.121	97	70 - 130	1	20
1,1,1-Trichloroethane		53.4	μg/L	1	50.0	<0.170	107	70 - 130	1	20
1,1-Dichloropropene		51.7	μg/L	1	50.0	<0.156	103	70 - 130	0	20
Benzene		51.5	μg/L	1	50.0	<0.113	103	70 - 130	1	20
Carbon Tetrachloride		54.2	μg/L	1	50.0	<0.0930	108	70 - 130	1	20
1,2-Dichloropropane		51.1	μg/L	1	50.0	<0.129	102	70 - 130	2	20
Trichloroethene (TCE)		46.1	μg/L	1	50.0	<0.160	92	70 - 130	2	20
Dibromomethane (methylene bromide)		42.5	μg/L	1	50.0	<0.137	85	70 - 130	0	20
Bromodichloromethane		50.1	μg/L	1	50.0	<0.107	100	70 - 130	2	20
2-Chloroethyl vinyl ether		43.6	μg/L	1	50.0	<0.257	87	70 - 130	2	20
cis-1,3-Dichloropropene		51.5	μg/L	1	50.0	<0.109	103	70 - 130	1	20
trans-1,3-Dichloropropene		49.2	μg/L	1	50.0	<0.181	98	70 - 130	0	20
Toluene		48.0	μg/L	1	50.0	<0.117	96	70 - 130	1	20
1,1,2-Trichloroethane		47.5	μg/L	1	50.0	<0.143	95	70 - 130	1	20
1,3-Dichloropropane		49.0	μg/L	1	50.0	<0.191	98	70 - 130	2	20
Dibromochloromethane		49.3	μg/L	1	50.0	<0.118	99	70 - 130	1	20

continued ...

[4] Analyte recovery outside control limits. Concentration biased high. •
[5] Analyte recovery outside control limits. Concentration biased high. •

control spikes continued ...

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,2-Dibromoethane (EDB)	48.0	μg/L	1	50.0	<0.131	96	70 - 130	2	20
Tetrachloroethene (PCE)	46.5	μg/L	1	50.0	<0.353	93	70 - 130	16	20
Chlorobenzene	50.1	μg/L	1	50.0	<0.135	100	70 - 130	3	20
1,1,1,2-Tetrachloroethane	46.5	μg/L	1	50.0	<0.263	93	70 - 130	2	20
Ethylbenzene	45.4	μg/L	1	50.0	<0.174	91	70 - 130	0	20
m,p-Xylene	96.6	μg/L	1	100	<0.220	97	70 - 130	3	20
Bromoform	46.1	μg/L	1	50.0	<0.385	92	70 - 130	0	20
Styrene	50.6	μg/L	1	50.0	<0.413	101	70 - 130	1	20
o-Xylene	46.6	μg/L	1	50.0	<0.115	93	70 - 130	0	20
1,1,2,2-Tetrachloroethane	44.1	μg/L	1	50.0	<0.766	88	70 - 130	1	20
2-Chlorotoluene	43.9	μg/L	1	50.0	<0.132	88	70 - 130	1	20
1,2,3-Trichloropropane	45.8	μg/L	1	50.0	<0.599	92	70 - 130	0	20
Isopropylbenzene	48.9	μg/L	1	50.0	<0.145	98	70 - 130	4	20
Bromobenzene	45.4	μg/L	1	50.0	<0.266	91	70 - 130	2	20
n-Propylbenzene	45.1	μg/L	1	50.0	<0.136	90	70 - 130	2	20
1,3,5-Trimethylbenzene	44.2	μg/L	1	50.0	<0.124	88	70 - 130	2	20
tert-Butylbenzene	45.8	μg/L	1	50.0	<0.136	92	70 - 130	2	20
1,2,4-Trimethylbenzene	42.8	μg/L	1	50.0	<0.114	86	70 - 130	7	20
1,4-Dichlorobenzene (para)	39.9	μg/L	1	50.0	<0.230	80	70 - 130	0	20
sec-Butylbenzene	44.6	μg/L	1	50.0	<0.452	89	70 - 130	1	20
1,3-Dichlorobenzene (meta)	42.7	μg/L	1	50.0	<0.214	85	70 - 130	1	20
p-Isopropyltoluene	44.0	μg/L	1	50.0	<0.126	88	70 - 130	0	20
4-Chlorotoluene	45.8	μg/L	1	50.0	<0.161	92	70 - 130	2	20
1,2-Dichlorobenzene (ortho)	43.8	μg/L	1	50.0	<0.357	88	70 - 130	0	20
n-Butylbenzene	45.0	μg/L	1	50.0	<0.125	90	70 - 130	3	20
1,2-Dibromo-3-chloropropane	39.9	μg/L	1	50.0	<0.977	80	70 - 130	0	20
1,2,3-Trichlorobenzene	38.5	μg/L	1	50.0	<0.400	77	70 - 130	1	20
1,2,4-Trichlorobenzene	42.1	μg/L	1	50.0	<0.227	84	70 - 130	1	20
Naphthalene	39.2	μg/L	1	50.0	<0.672	78	70 - 130	0	20
Hexachlorobutadiene	39.1	μg/L	1	50.0	<0.198	78	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.3	50.3	μg/L	1	50.0	103	101	70 - 130
Toluene-d8	48.6	49.2	μg/L	1	50.0	97	98	70 - 130
4-Bromofluorobenzene (4-BFB)	49.8	50.3	μg/L	1	50.0	100	101	70 - 130

Matrix Spike (MS-1) Spiked Sample: 211136

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER
Prep Batch: 54693 QC Preparation: 2009-09-30 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	1.05	mg/L	1	1.00	<0.152	105	48.4 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	0.931	mg/L	1	1.00	<0.152	93	48.4 - 136	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	0.0890	0.0826	mg/L	1	0.1	89	83	70.3 - 129
4-Bromofluorobenzene (4-BFB)	0.0892	0.0849	mg/L	1	0.1	89	85	82.5 - 118

Matrix Spike (MS-1) Spiked Sample: 211362

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG
Prep Batch: 54774 QC Preparation: 2009-10-02 Prepared By: JG

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Bromochloromethane		48.5	µg/L	1	50.0	<0.169	97	70 - 130
Dichlorodifluoromethane		45.4	µg/L	1	50.0	<0.145	91	70 - 130
Chloromethane (methyl chloride)		55.4	µg/L	1	50.0	<0.164	111	70 - 130
Vinyl Chloride		50.1	µg/L	1	50.0	<0.110	100	70 - 130
Bromomethane (methyl bromide)	[6]	112	µg/L	1	50.0	<0.540	224	70 - 130
Chloroethane	[7]	66.2	µg/L	1	50.0	<0.232	132	70 - 130
Trichlorofluoromethane		49.4	µg/L	1	50.0	<0.149	99	70 - 130
Acetone	[8]	28.7	µg/L	1	50.0	1.06	55	70 - 130
Iodomethane (methyl iodide)		53.9	µg/L	1	50.0	<0.104	108	70 - 130
Carbon Disulfide		50.8	µg/L	1	50.0	<0.120	102	70 - 130
Acrylonitrile		46.4	µg/L	1	50.0	<0.189	93	70 - 130
2-Butanone (MEK)		34.9	µg/L	1	50.0	<0.218	70	70 - 130
4-Methyl-2-pentanone (MIBK)		48.1	µg/L	1	50.0	<0.554	96	70 - 130
2-Hexanone		42.3	µg/L	1	50.0	<0.863	85	70 - 130
trans 1,4-Dichloro-2-butene		41.0	µg/L	1	50.0	<0.607	82	70 - 130
1,1-Dichloroethene		50.2	µg/L	1	50.0	<0.102	100	70 - 130
Methylene chloride		47.3	µg/L	1	50.0	<0.270	95	70 - 130
MTBE		50.6	µg/L	1	50.0	<0.122	101	70 - 130
trans-1,2-Dichloroethene		49.4	µg/L	1	50.0	<0.168	99	70 - 130
1,1-Dichloroethane		52.4	µg/L	1	50.0	<0.107	105	70 - 130
cis-1,2-Dichloroethene		47.8	µg/L	1	50.0	<0.151	96	70 - 130
2,2-Dichloropropane		40.6	µg/L	1	50.0	<0.167	81	70 - 130
1,2-Dichloroethane (EDC)		49.8	µg/L	1	50.0	<0.0890	100	70 - 130
Chloroform		47.8	µg/L	1	50.0	<0.121	96	70 - 130
1,1,1-Trichloroethane		52.0	µg/L	1	50.0	<0.170	104	70 - 130
1,1-Dichloropropene		48.5	µg/L	1	50.0	<0.156	97	70 - 130
Benzene		50.6	µg/L	1	50.0	<0.113	101	70 - 130

continued ...

[6] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[7] Analyte recovery outside control limits. Concentration biased high.
[8] Analyte recovery outside control limits. Results considered estimated values.

matrix spikes continued . . .

Param		MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Carbon Tetrachloride		51.5	µg/L	1	50.0	<0.0930	103	70 - 130
1,2-Dichloropropane		50.2	µg/L	1	50.0	<0.129	100	70 - 130
Trichloroethene (TCE)		41.8	µg/L	1	50.0	<0.160	84	70 - 130
Dibromomethane (methylene bromide)		40.7	µg/L	1	50.0	<0.137	81	70 - 130
Bromodichloromethane		48.5	µg/L	1	50.0	<0.107	97	70 - 130
2-Chloroethyl vinyl ether	[9]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130
cis-1,3-Dichloropropene		49.3	µg/L	1	50.0	<0.109	99	70 - 130
trans-1,3-Dichloropropene		46.9	µg/L	1	50.0	<0.181	94	70 - 130
Toluene		48.2	µg/L	1	50.0	<0.117	96	70 - 130
1,1,2-Trichloroethane		47.3	µg/L	1	50.0	<0.143	95	70 - 130
1,3-Dichloropropane		48.3	µg/L	1	50.0	<0.191	97	70 - 130
Dibromochloromethane		48.8	µg/L	1	50.0	0.247	97	70 - 130
1,2-Dibromoethane (EDB)		48.0	µg/L	1	50.0	<0.131	96	70 - 130
Tetrachloroethene (PCE)	[10]	28.7	µg/L	1	50.0	<0.353	57	70 - 130
Chlorobenzene		48.8	µg/L	1	50.0	<0.135	98	70 - 130
1,1,1,2-Tetrachloroethane		46.7	µg/L	1	50.0	<0.263	93	70 - 130
Ethylbenzene		45.3	µg/L	1	50.0	<0.174	91	70 - 130
m,p-Xylene		94.6	µg/L	1	100	<0.220	95	70 - 130
Bromoform		45.6	µg/L	1	50.0	0.928	89	70 - 130
Styrene	[11]	<0.413	µg/L	1	50.0	<0.413	0	70 - 130
o-Xylene		50.4	µg/L	1	50.0	<0.115	101	70 - 130
1,1,2,2-Tetrachloroethane		44.3	µg/L	1	50.0	<0.766	89	70 - 130
2-Chlorotoluene		45.1	µg/L	1	50.0	<0.132	90	70 - 130
1,2,3-Trichloropropane		43.8	µg/L	1	50.0	<0.599	88	70 - 130
Isopropylbenzene		47.4	µg/L	1	50.0	<0.145	95	70 - 130
Bromobenzene		46.1	µg/L	1	50.0	<0.266	92	70 - 130
n-Propylbenzene		45.0	µg/L	1	50.0	<0.136	90	70 - 130
1,3,5-Trimethylbenzene		42.6	µg/L	1	50.0	<0.124	85	70 - 130
tert-Butylbenzene		44.6	µg/L	1	50.0	<0.136	89	70 - 130
1,2,4-Trimethylbenzene		35.9	µg/L	1	50.0	<0.114	72	70 - 130
1,4-Dichlorobenzene (para)		39.6	µg/L	1	50.0	<0.230	79	70 - 130
sec-Butylbenzene		43.8	µg/L	1	50.0	<0.452	88	70 - 130
1,3-Dichlorobenzene (meta)		43.3	µg/L	1	50.0	<0.214	87	70 - 130
p-Isopropyltoluene		43.6	µg/L	1	50.0	<0.126	87	70 - 130
4-Chlorotoluene		46.3	µg/L	1	50.0	<0.161	93	70 - 130
1,2-Dichlorobenzene (ortho)		43.1	µg/L	1	50.0	<0.357	86	70 - 130
n-Butylbenzene		43.5	µg/L	1	50.0	<0.125	87	70 - 130
1,2-Dibromo-3-chloropropane		39.4	µg/L	1	50.0	<0.977	79	70 - 130
1,2,3-Trichlorobenzene		35.1	µg/L	1	50.0	<0.400	70	70 - 130
1,2,4-Trichlorobenzene		39.9	µg/L	1	50.0	<0.227	80	70 - 130
Naphthalene		37.1	µg/L	1	50.0	<0.672	74	70 - 130
Hexachlorobutadiene	[12]	34.1	µg/L	1	50.0	<0.198	68	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

[9] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[10] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[11] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[12] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Bromochloromethane		47.3	µg/L	1	50.0	<0.169	95	70 - 130	2	20
Dichlorodifluoromethane		42.6	µg/L	1	50.0	<0.145	85	70 - 130	6	20
Chloromethane (methyl chloride)		55.3	µg/L	1	50.0	<0.164	111	70 - 130	0	20
Vinyl Chloride		48.9	µg/L	1	50.0	<0.110	98	70 - 130	2	20
Bromomethane (methyl bromide)	[13]	93.5	µg/L	1	50.0	<0.540	187	70 - 130	18	20
Chloroethane		63.6	µg/L	1	50.0	<0.232	127	70 - 130	4	20
Trichlorofluoromethane		46.2	µg/L	1	50.0	<0.149	92	70 - 130	7	20
Acetone	[14]	27.6	µg/L	1	50.0	1.06	53	70 - 130	4	20
Iodomethane (methyl iodide)		52.9	µg/L	1	50.0	<0.104	106	70 - 130	2	20
Carbon Disulfide		47.8	µg/L	1	50.0	<0.120	96	70 - 130	6	20
Acrylonitrile		45.4	µg/L	1	50.0	<0.189	91	70 - 130	2	20
2-Butanone (MEK)	[15]	34.1	µg/L	1	50.0	<0.218	68	70 - 130	2	20
4-Methyl-2-pentanone (MIBK)		46.9	µg/L	1	50.0	<0.554	94	70 - 130	2	20
2-Hexanone		42.6	µg/L	1	50.0	<0.863	85	70 - 130	1	20
trans 1,4-Dichloro-2-butene		40.5	µg/L	1	50.0	<0.607	81	70 - 130	1	20
1,1-Dichloroethene		47.1	µg/L	1	50.0	<0.102	94	70 - 130	6	20
Methylene chloride		47.4	µg/L	1	50.0	<0.270	95	70 - 130	0	20
MTBE		50.0	µg/L	1	50.0	<0.122	100	70 - 130	1	20
trans-1,2-Dichloroethene		47.6	µg/L	1	50.0	<0.168	95	70 - 130	4	20
1,1-Dichloroethane		50.9	µg/L	1	50.0	<0.107	102	70 - 130	3	20
cis-1,2-Dichloroethene		46.6	µg/L	1	50.0	<0.151	93	70 - 130	2	20
2,2-Dichloropropane		38.9	µg/L	1	50.0	<0.167	78	70 - 130	4	20
1,2-Dichloroethane (EDC)		48.9	µg/L	1	50.0	<0.0890	98	70 - 130	2	20
Chloroform		46.6	µg/L	1	50.0	<0.121	93	70 - 130	2	20
1,1,1-Trichloroethane		49.5	µg/L	1	50.0	<0.170	99	70 - 130	5	20
1,1-Dichloropropene		43.8	µg/L	1	50.0	<0.156	88	70 - 130	10	20
Benzene		48.6	µg/L	1	50.0	<0.113	97	70 - 130	4	20
Carbon Tetrachloride		47.8	µg/L	1	50.0	<0.0930	96	70 - 130	7	20
1,2-Dichloropropane		48.6	µg/L	1	50.0	<0.129	97	70 - 130	3	20
Trichloroethene (TCE)		40.3	µg/L	1	50.0	<0.160	81	70 - 130	4	20
Dibromomethane (methylene bromide)		39.9	µg/L	1	50.0	<0.137	80	70 - 130	2	20
Bromodichloromethane		47.9	µg/L	1	50.0	<0.107	96	70 - 130	1	20
2-Chloroethyl vinyl ether	[16]	<0.257	µg/L	1	50.0	<0.257	0	70 - 130	0	20
cis-1,3-Dichloropropene		47.8	µg/L	1	50.0	<0.109	96	70 - 130	3	20
trans-1,3-Dichloropropene		45.5	µg/L	1	50.0	<0.181	91	70 - 130	3	20
Toluene		45.1	µg/L	1	50.0	<0.117	90	70 - 130	7	20
1,1,2-Trichloroethane		46.8	µg/L	1	50.0	<0.143	94	70 - 130	1	20
1,3-Dichloropropane		47.8	µg/L	1	50.0	<0.191	96	70 - 130	1	20
Dibromochloromethane		47.4	µg/L	1	50.0	0.247	94	70 - 130	3	20
1,2-Dibromoethane (EDB)		46.8	µg/L	1	50.0	<0.131	94	70 - 130	2	20
Tetrachloroethene (PCE)	[17]	26.0	µg/L	1	50.0	<0.353	52	70 - 130	10	20
Chlorobenzene		46.7	µg/L	1	50.0	<0.135	93	70 - 130	4	20
1,1,1,2-Tetrachloroethane		45.0	µg/L	1	50.0	<0.263	90	70 - 130	4	20

continued ...

[13] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[14] Analyte recovery outside control limits. Results considered estimated values.
[15] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[16] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[17] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

matrix spikes continued . . .

Param		MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Ethylbenzene		40.7	μg/L	1	50.0	<0.174	81	70 - 130	11	20
m,p-Xylene		88.7	μg/L	1	100	<0.220	89	70 - 130	6	20
Bromoform		44.4	μg/L	1	50.0	0.928	87	70 - 130	3	20
Styrene	[18]	<0.413	μg/L	1	50.0	<0.413	0	70 - 130	0	20
o-Xylene		48.4	μg/L	1	50.0	<0.115	97	70 - 130	4	20
1,1,2,2-Tetrachloroethane		43.4	μg/L	1	50.0	<0.766	87	70 - 130	2	20
2-Chlorotoluene		40.8	μg/L	1	50.0	<0.132	82	70 - 130	10	20
1,2,3-Trichloropropane		43.6	μg/L	1	50.0	<0.599	87	70 - 130	0	20
Isopropylbenzene		43.8	μg/L	1	50.0	<0.145	88	70 - 130	8	20
Bromobenzene		43.3	μg/L	1	50.0	<0.266	87	70 - 130	6	20
n-Propylbenzene		40.5	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,3,5-Trimethylbenzene		38.2	μg/L	1	50.0	<0.124	76	70 - 130	11	20
tert-Butylbenzene		40.4	μg/L	1	50.0	<0.136	81	70 - 130	10	20
1,2,4-Trimethylbenzene	[19]	33.1	μg/L	1	50.0	<0.114	66	70 - 130	8	20
1,4-Dichlorobenzene (para)		37.1	μg/L	1	50.0	<0.230	74	70 - 130	6	20
sec-Butylbenzene		39.5	μg/L	1	50.0	<0.452	79	70 - 130	10	20
1,3-Dichlorobenzene (meta)		39.7	μg/L	1	50.0	<0.214	79	70 - 130	9	20
p-Isopropyltoluene		39.6	μg/L	1	50.0	<0.126	79	70 - 130	10	20
4-Chlorotoluene		42.5	μg/L	1	50.0	<0.161	85	70 - 130	9	20
1,2-Dichlorobenzene (ortho)		40.7	μg/L	1	50.0	<0.357	81	70 - 130	6	20
n-Butylbenzene		38.7	μg/L	1	50.0	<0.125	77	70 - 130	12	20
1,2-Dibromo-3-chloropropane		37.7	μg/L	1	50.0	<0.977	75	70 - 130	4	20
1,2,3-Trichlorobenzene	[20]	34.2	μg/L	1	50.0	<0.400	68	70 - 130	3	20
1,2,4-Trichlorobenzene		37.3	μg/L	1	50.0	<0.227	75	70 - 130	7	20
Naphthalene		36.2	μg/L	1	50.0	<0.672	72	70 - 130	2	20
Hexachlorobutadiene	[21]	30.8	μg/L	1	50.0	<0.198	62	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Dibromofluoromethane	49.9	50.2	μg/L	1	50	100	100	70 - 130
Toluene-d8	49.8	49.0	μg/L	1	50	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	48.9	50.0	μg/L	1	50	98	100	70 - 130

Standard (CCV-1)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

[18] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[19] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[20] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.
[21] Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Standard (CCV-2)

QC Batch: 64046 Date Analyzed: 2009-09-30 Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1.00	1.06	106	80 - 120	2009-09-30

Standard (CCV-1)

QC Batch: 64142 Date Analyzed: 2009-10-02 Analyzed By: JG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Bromochloromethane		µg/L	50.0	48.9	98	80 - 120	2009-10-02
Dichlorodifluoromethane		µg/L	50.0	49.3	99	80 - 120	2009-10-02
Chloromethane (methyl chloride)		µg/L	50.0	55.7	111	80 - 120	2009-10-02
Vinyl Chloride		µg/L	50.0	49.6	99	80 - 120	2009-10-02
Bromomethane (methyl bromide)		µg/L	50.0	60.2	120	80 - 120	2009-10-02
Chloroethane	[22]	µg/L	50.0	61.1	122	80 - 120	2009-10-02
Trichlorofluoromethane		µg/L	50.0	51.2	102	80 - 120	2009-10-02
Acetone	[23]	µg/L	50.0	172	344	80 - 120	2009-10-02
Iodomethane (methyl iodide)		µg/L	50.0	54.3	109	80 - 120	2009-10-02
Carbon Disulfide		µg/L	50.0	51.4	103	80 - 120	2009-10-02
Acrylonitrile		µg/L	50.0	48.4	97	80 - 120	2009-10-02
2-Butanone (MEK)		µg/L	50.0	40.8	82	80 - 120	2009-10-02
4-Methyl-2-pentanone (MIBK)		µg/L	50.0	47.8	96	80 - 120	2009-10-02
2-Hexanone		µg/L	50.0	42.3	85	80 - 120	2009-10-02
trans 1,4-Dichloro-2-butene		µg/L	50.0	46.2	92	80 - 120	2009-10-02
1,1-Dichloroethene		µg/L	50.0	50.7	101	80 - 120	2009-10-02
Methylene chloride		µg/L	50.0	48.0	96	80 - 120	2009-10-02
MTBE		µg/L	50.0	50.6	101	80 - 120	2009-10-02
trans-1,2-Dichloroethene		µg/L	50.0	49.0	98	80 - 120	2009-10-02
1,1-Dichloroethane		µg/L	50.0	52.1	104	80 - 120	2009-10-02
cis-1,2-Dichloroethene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
2,2-Dichloropropane		µg/L	50.0	52.7	105	80 - 120	2009-10-02
1,2-Dichloroethane (EDC)		µg/L	50.0	49.1	98	80 - 120	2009-10-02
Chloroform		µg/L	50.0	48.1	96	80 - 120	2009-10-02
1,1,1-Trichloroethane		µg/L	50.0	53.6	107	80 - 120	2009-10-02
1,1-Dichloropropene		µg/L	50.0	46.8	94	80 - 120	2009-10-02
Benzene		µg/L	50.0	50.5	101	80 - 120	2009-10-02
Carbon Tetrachloride		µg/L	50.0	53.1	106	80 - 120	2009-10-02
1,2-Dichloropropane		µg/L	50.0	50.4	101	80 - 120	2009-10-02
Trichloroethene (TCE)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
Dibromomethane (methylene bromide)		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Bromodichloromethane		µg/L	50.0	49.0	98	80 - 120	2009-10-02

continued ...

[22] Analyte recovery outside CCV control limits. Concentration biased high. •
[23] Analyte recovery outside CCV control limits. Concentration biased high. •

standard continued ...

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Chloroethyl vinyl ether		µg/L	50.0	40.7	81	80 - 120	2009-10-02
cis-1,3-Dichloropropene		µg/L	50.0	51.4	103	80 - 120	2009-10-02
trans-1,3-Dichloropropene		µg/L	50.0	47.6	95	80 - 120	2009-10-02
Toluene		µg/L	50.0	46.6	93	80 - 120	2009-10-02
1,1,2-Trichloroethane		µg/L	50.0	46.4	93	80 - 120	2009-10-02
1,3-Dichloropropane		µg/L	50.0	46.2	92	80 - 120	2009-10-02
Dibromochloromethane		µg/L	50.0	47.4	95	80 - 120	2009-10-02
1,2-Dibromoethane (EDB)		µg/L	50.0	46.4	93	80 - 120	2009-10-02
Tetrachloroethene (PCE)	[24]	µg/L	50.0	29.4	59	80 - 120	2009-10-02
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2009-10-02
1,1,1,2-Tetrachloroethane		µg/L	50.0	45.6	91	80 - 120	2009-10-02
Ethylbenzene		µg/L	50.0	44.6	89	80 - 120	2009-10-02
m,p-Xylene		µg/L	100	93.1	93	80 - 120	2009-10-02
Bromoform		µg/L	50.0	45.0	90	80 - 120	2009-10-02
Styrene		µg/L	50.0	48.4	97	80 - 120	2009-10-02
o-Xylene		µg/L	50.0	45.6	91	80 - 120	2009-10-02
1,1,2,2-Tetrachloroethane		µg/L	50.0	44.3	89	80 - 120	2009-10-02
2-Chlorotoluene		µg/L	50.0	44.8	90	80 - 120	2009-10-02
1,2,3-Trichloropropane		µg/L	50.0	43.0	86	80 - 120	2009-10-02
Isopropylbenzene		µg/L	50.0	47.0	94	80 - 120	2009-10-02
Bromobenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
n-Propylbenzene		µg/L	50.0	44.9	90	80 - 120	2009-10-02
1,3,5-Trimethylbenzene		µg/L	50.0	44.4	89	80 - 120	2009-10-02
tert-Butylbenzene		µg/L	50.0	45.5	91	80 - 120	2009-10-02
1,2,4-Trimethylbenzene	[25]	µg/L	50.0	37.8	76	80 - 120	2009-10-02
1,4-Dichlorobenzene (para)		µg/L	50.0	40.9	82	80 - 120	2009-10-02
sec-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,3-Dichlorobenzene (meta)		µg/L	50.0	43.6	87	80 - 120	2009-10-02
p-Isopropyltoluene		µg/L	50.0	44.5	89	80 - 120	2009-10-02
4-Chlorotoluene		µg/L	50.0	45.1	90	80 - 120	2009-10-02
1,2-Dichlorobenzene (ortho)		µg/L	50.0	44.5	89	80 - 120	2009-10-02
n-Butylbenzene		µg/L	50.0	45.0	90	80 - 120	2009-10-02
1,2-Dibromo-3-chloropropane		µg/L	50.0	40.0	80	80 - 120	2009-10-02
1,2,3-Trichlorobenzene	[26]	µg/L	50.0	37.7	75	80 - 120	2009-10-02
1,2,4-Trichlorobenzene		µg/L	50.0	42.7	85	80 - 120	2009-10-02
Naphthalene	[27]	µg/L	50.0	38.1	76	80 - 120	2009-10-02
Hexachlorobutadiene	[28]	µg/L	50.0	38.8	78	80 - 120	2009-10-02

[24] Analyte recovery outside CCV control limits. Concentration biased low. •
[25] Analyte recovery outside CCV control limits. Concentration biased low. •
[26] Analyte recovery outside CCV control limits. Concentration biased low. •
[27] Analyte recovery outside CCV control limits. Concentration biased low. •
[28] Analyte recovery outside CCV control limits. Concentration biased low. •

9093022

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CHAIN OF CUSTODY RECORD

PROJECT NO: 13

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	90	80								REMARKS
9-29-09	1000	HTSA-0197-RB-001-0909	Water	211160	6	X	X								

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME)	(PRINTED NAME) Carol FOX
SHIPPING ID NO:	CHAIN OF CUSTODY SEALS:	intact	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace
	GOOD CONDITION/CHILLED:	IR 1.0 1.4	(TIME/DATE)	(TIME/DATE)	(TIME/DATE) 9-30-09 8:30 AM
VIA: Lsh Courier	CONFORMS TO RECORD:		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		LS Fed 7979 7307 2490

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March 25, 2010

Brad Davis
Zia Engineering & Environmental
755 S Telshor Blvd Ste F-201
Las Cruces, NM 88011

TEL: (575) 678-3397
FAX: (575) 532-1587

Order No: 1003121

RE: HELSTF TSA Groundwater

Dear Brad Davis:

DHL Analytical received 8 sample(s) on 3/16/2010 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of DoD QSM Ver 4.1 and NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. This report shall not be reproduced except in full without the written approval of DHL Analytical, Inc. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-09-1

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#1003121

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.

PROJECT NAME: HELSTF TSA GROUNDWATER

SAMPLER'S SIGNATURE

	DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE										REMARKS
01	3-11-10	1040	HTSA-0197-HMW-050-0310	WATER		3	X										

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME)	(PRINTED NAME) Fed ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fed ex	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: Fed EX	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp 0.8° Therm #57 custody seals intact	

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224# 1003121

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.

PROJECT NAME: HELSTF TSA GROUNDWATER

SAMPLER'S SIGNATURE

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE	REMARKS
		049 per Brad 3/11/10					
3-11-10	1212	HTSA-0197-HMW-049-0310-ms/msd	WATER		3	X	

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME) Fed Ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fed Ex	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/12/10 9:55	(TIME/DATE)
VIA: Fed Ex	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp: 0.8° Therm #57 custody seals intact	

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.

PROJECT NAME: HELSTF TSA GROUNDWATER

SAMPLER'S SIGNATURE

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE									REMARKS
02 3-11-10	1212	HTSA-0197-HMW-049-0310	WATER		3	X									

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GRETTEL GANTT	(PRINTED NAME) Fed ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fed ex	RECEIVED BY: (SIGNATURE) J Baca	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: FedEX	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp 0.8° Therm #57 Custody seals intact	

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.

PROJECT NAME: HELSTF TSA GROUNDWATER

SAMPLER'S SIGNATURE

	DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE										REMARKS
03	3-15-10	1110	HTSA-0197-HMW-048-0310	WATER		3	X										

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME)	(PRINTED NAME)	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED	(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: FED EX	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp 0.8° Therm #57 ~~custody seals intact~~	

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.	PROJECT NAME: HELSTF TSA GROUNDWATER
SAMPLER'S SIGNATURE	

	DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE										REMARKS
04	3-15-10	1255	HTSA-0197-HM00-052-0310	WATER		3	X										
05	3-15-10	1255	HTSA-0197-TB-207-0310	WATER		2	X										
06	3-15-10	1255	HTSA-0197-FB-001-0310	WATER		3	X										

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE) Fed ex	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL SANCHEZ	(PRINTED NAME) Fed ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fed ex	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: FED EX	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS Receiving temp 0.8° Item #57 Custody seals intact		

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

zia engineering & environmental consultants, llc
755 S. Telshor Blvd. Ste. F-201
Las Cruces, NM 88011
575-532-1526 u
575-532-1587 f

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1003121

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.

PROJECT NAME: HELSTF TSA GROUNDWATER

SAMPLER'S SIGNATURE

	DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE										REMARKS
67	3-16-10	1214	HTSA-0197-RB-001-0310	WATER		3	X										

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME) Fed Ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fedex	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: FED EX	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp 0.8° Cooler #57 Custody Seals intact	

PLEASE USE BALL POINT PEN

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4 1003121

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.	PROJECT NAME: HELSTF TSA GROUNDWATER
SAMPLER'S SIGNATURE	

	DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	BTEX/MTBE										REMARKS
04	3-15-10	1255	HTSA-0197-HMW-152-0310	WATER		3	X										

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE) Fed ex	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) Gabriel Garcia	(PRINTED NAME) Fed ex	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE) Fed ex	RECEIVED BY: (SIGNATURE) O Parker	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/DATE)	(TIME/DATE) 3/16/10 9:55	(TIME/DATE)
VIA: FED EX	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS	Receiving temp 0.80 Therm #57 custody seals intact	

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

From: Origin ID: LRUA (575) 532-1526
Tara Parra
Zia EEC
755 S. Telshor Blvd.

Las Cruces, NM 88011

FedEx Express

J101010022230224

Ship Date: 15MAR10
ActWgt: 40.0 LB
CAD: 100557518/INET3010

Delivery Address Bar Code

Ref # LCS-09-015
Invoice #
PO # BG 0020
Dept #

SHIP TO: (512) 388-8222 BILL SENDER

John Dupont
DHL Analytical
2300 DOUBLE CREEK DR

ROUND ROCK, TX 78664

TRK# 0201 7933 5473 9703

TUE - 16 MAR A1
PRIORITY OVERNIGHT

78664
TX-US
AUS

XH BSMA

5950/1/853/GFE9

CUSTODY SEAL
DATE 3-15-10
SIGNATURE

EEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical

Sample Receipt Checklist

Client Name **Zia Engineering & Environmental** Date Received: **3/16/2010**

Work Order Number **1003121** Received by **JB**

Checklist completed by: J Baker (Signature) 3/16/10 (Date) Reviewed by (Initials) 3/16/10 (Date)

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☐	No ☑	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	0.8 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Adjusted? _____ Checked by _____

Any No response must be detailed in the comments section below.

Client contacted Zia Date contacted: 3-16-10 Person contacted Brad Davis

Contacted by: J Baker Regarding: HTSA-0197-HMW-049-0310

Comments: Per Brad, sample was labeled wrong on vial + COC, client would like us to correct the COC and vials.

Corrective Action Corrected COC and vials per client's request. Logged in for requested analysis.

Page 1 of 1

Laboratory Data Package Signature Page

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5.13
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Scott Schroeder – Project Manager
John DuPont – General / QA Manager

Signature

03/25/10
Date

DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: HELSTF TSA Groundwater	Date: 3/25/2010
Reviewer Name: Angie O'Donnell	Laboratory Work Order: 1003121
Prep Batch Number(s): See Prep Dates Report	Run Batch: See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				R1-01
		2) Were all departures from standard conditions described in an exception report?	X				
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	X				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		3) Were calculations checked by a peer or supervisor?	X				
		4) Were all analyte identifications checked by a peer or supervisor?	X				
		5) Were sample quantitation limits reported for all analytes not detected?	X				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			X		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			X		
		8) If required for the project, TICs reported?			X		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?	X				
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	X				
		2) Were blanks analyzed at the appropriate frequency?	X				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		4) Were blank concentrations < MQL?	X				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	X				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	X				
		6) Was the LCSD RPD within QC limits (if applicable)?			X		
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	X				
		2) Were MS/MSD analyzed at the appropriate frequency?	X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
		4) Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?			X		
		2) Were analytical duplicates analyzed at the appropriate frequency?			X		
		3) Were RPDs or relative standard deviations within the laboratory QC limits?			X		
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	X				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		3) Are unadjusted MQLs included in the laboratory data package?	X				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		2) Were all necessary corrective actions performed for the reported data?	X				
		3) Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: HELSTF TSA Groundwater	Date: 3/25/2010
Reviewer Name: Angie O'Donnell	Laboratory Work Order: 1003121

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC section 1 appendix A glossary, and section 5.12)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				S5-02
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?			X		
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chap 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Manual Integrations Tracking Form - DoD QSM 4.1 Requirement

Instrument ID: GCMS5

ICAL Folder: GCMS5_100310W.CAL

Sample ID ICAL, ICV, and CCV QC and Field Samples	Analyte #1 Identification & Reason	Analyte #2 Identification & Reason	Analyte #3 Identification & Reason	Analyte #4 Identification & Reason
	1,4-Dichlorobenzene	Chloroethane		
ICAL 2 (0.928 PPB)	1,4-Dichlorobenzene peak misidentified as 1,3-Dichlorobenzene.			

Analyst 3-11-10 Date

03/18/10

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Lab Order: 1003121

CASE NARRATIVE

This case narrative describes abnormalities and deviations that may affect the results and summarizes all known issues that need to be highlighted for the data user to assess the results. This case narrative and the report contents are compliant with DoD QSM Ver 4.1 and NELAC.

Samples were analyzed using the methods outlined in the following references:

Method SW8260B - Volatile Organics

Exception Report R1-01

Samples were received on and log-in performed on 3/16/2010. A total of 8 samples were received and all were analyzed. DHL corrected Sample ID (-02) on the COC and sample labels to reflect HTSA-0197-HMW-049-0310, per request of client on 3/16/2010. The remaining samples arrived in good condition and were properly packaged.

Exception Report S5-02

For Volatiles Analysis, some samples and/or standards were manually integrated. Please refer to the table on page 15 of this report for the full list of samples, standards, and the compounds that were manually integrated.

A summary of project communication follows:

DHL Analytical received the Project RFQ from the client on 12/29/09. Completed RFQ returned to client via email on 1/07/2010. Purchase Order/Terms and Conditions received and signed and approved by both parties on 01/25/2010.

Brad Davis of ZIA Requested a bottle kit from Jennifer Barker of DHL: via email on 3/2/10.

Kit sent on 3/4/10 via Lonestar Overnight, arrive on 3/8/10.

This sample delivery group arrived at DHL Analytical 3/16/10. Sample summary sent via email from Log-in to client on 3/16/10.

DHL Project Manager/QA staff discussed with client the following issues:
RFQ questions answered vial email on 1/4/2010.
DHL Insurance Certification sent 1/26/2010.
Sample ID correction made 3/16/2010.

All hardcopies for the sample kit request, bill of lading for sample kit sent and login summary are kept in the project folder (see WO # 1003088).

DHL Analytical

Date: 03/25/10

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Lab Order: 1003121

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
1003121-01	HTSA-0197-HMW-050-0310		03/11/10 10:40 AM	03/16/10
1003121-02	HTSA-0197-HMW-049-0310		03/11/10 12:12 PM	03/16/10
1003121-03	HTSA-0197-HMW-048-0310		03/15/10 11:10 AM	03/16/10
1003121-04	HTSA-0197-HMW-052-0310		03/15/10 12:55 PM	03/16/10
1003121-05	HTSA-0197-TB-227-0310		03/15/10 12:55 PM	03/16/10
1003121-06	HTSA-0197-FB-001-0310		03/15/10 12:55 PM	03/16/10
1003121-07	HTSA-0197-RB-001-0310		03/15/10 12:14 PM	03/16/10
1003121-08	HTSA-0197-HMW-152-0310		03/15/10 12:55 PM	03/16/10

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Lab Order: 1003121

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1003121-01A	HTSA-0197-HMW-050-0310	03/11/10 10:40 AM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-02A	HTSA-0197-HMW-049-0310	03/11/10 12:12 PM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-03A	HTSA-0197-HMW-048-0310	03/15/10 11:10 AM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-04A	HTSA-0197-HMW-052-0310	03/15/10 12:55 PM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-05A	HTSA-0197-TB-227-0310	03/15/10 12:55 PM	Trip Blank	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-06A	HTSA-0197-FB-001-0310	03/15/10 12:55 PM	Field Blank	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-07A	HTSA-0197-RB-001-0310	03/15/10 12:14 PM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047
1003121-08A	HTSA-0197-HMW-152-0310	03/15/10 12:55 PM	Aqueous	SW5030B	Purge and Trap Water GC/MS	03/17/10 08:46 AM	40047

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Lab Order: 1003121

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1003121-01A	HTSA-0197-HMW-050-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 03:19 PM	GCMS5_100317B
1003121-02A	HTSA-0197-HMW-049-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 11:59 AM	GCMS5_100317B
1003121-03A	HTSA-0197-HMW-048-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 03:44 PM	GCMS5_100317B
1003121-04A	HTSA-0197-HMW-052-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 04:08 PM	GCMS5_100317B
1003121-05A	HTSA-0197-TB-227-0310	Trip Blank	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 02:29 PM	GCMS5_100317B
1003121-06A	HTSA-0197-FB-001-0310	Field Blank	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 02:54 PM	GCMS5_100317B
1003121-07A	HTSA-0197-RB-001-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 04:33 PM	GCMS5_100317B
1003121-08A	HTSA-0197-HMW-152-0310	Aqueous	SW8260B	8260 Water Volatiles by GC/MS	40047	1	03/17/10 04:57 PM	GCMS5_100317B

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-HMW-050-0310
Lab ID: 1003121-01
Collection Date: 03/11/10 10:40 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:19 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 03:19 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:19 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 03:19 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 03:19 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:19 PM
Surr: 1,2-Dichloroethane-d4	103	0	70 - 120		%REC	1	03/17/10 03:19 PM
Surr: 4-Bromofluorobenzene	107	0	75 - 120		%REC	1	03/17/10 03:19 PM
Surr: Dibromofluoromethane	102	0	85 - 115		%REC	1	03/17/10 03:19 PM
Surr: Toluene-d8	99.1	0	85 - 120		%REC	1	03/17/10 03:19 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 03/25/10

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-HMW-049-0310
Lab ID: 1003121-02
Collection Date: 03/11/10 12:12 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 11:59 AM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 11:59 AM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 11:59 AM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 11:59 AM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 11:59 AM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 11:59 AM
Surr: 1,2-Dichloroethane-d4	103	0	70 - 120		%REC	1	03/17/10 11:59 AM
Surr: 4-Bromofluorobenzene	107	0	75 - 120		%REC	1	03/17/10 11:59 AM
Surr: Dibromofluoromethane	102	0	85 - 115		%REC	1	03/17/10 11:59 AM
Surr: Toluene-d8	100	0	85 - 120		%REC	1	03/17/10 11:59 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-HMW-048-0310
Lab ID: 1003121-03
Collection Date: 03/15/10 11:10 AM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:44 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 03:44 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:44 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 03:44 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 03:44 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 03:44 PM
Surr: 1,2-Dichloroethane-d4	102	0	70 - 120		%REC	1	03/17/10 03:44 PM
Surr: 4-Bromofluorobenzene	103	0	75 - 120		%REC	1	03/17/10 03:44 PM
Surr: Dibromofluoromethane	101	0	85 - 115		%REC	1	03/17/10 03:44 PM
Surr: Toluene-d8	100	0	85 - 120		%REC	1	03/17/10 03:44 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 03/25/10

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-HMW-052-0310
Lab ID: 1003121-04
Collection Date: 03/15/10 12:55 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	0.00791	0.000300	0.00100		mg/L	1	03/17/10 04:08 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 04:08 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:08 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:08 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:08 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:08 PM
Surr: 1,2-Dichloroethane-d4	103	0	70 - 120		%REC	1	03/17/10 04:08 PM
Surr: 4-Bromofluorobenzene	105	0	75 - 120		%REC	1	03/17/10 04:08 PM
Surr: Dibromofluoromethane	101	0	85 - 115		%REC	1	03/17/10 04:08 PM
Surr: Toluene-d8	99.2	0	85 - 120		%REC	1	03/17/10 04:08 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-TB-227-0310
Lab ID: 1003121-05
Collection Date: 03/15/10 12:55 PM
Matrix: Trip Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:29 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 02:29 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:29 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 02:29 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 02:29 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:29 PM
Surr: 1,2-Dichloroethane-d4	102	0	70 - 120		%REC	1	03/17/10 02:29 PM
Surr: 4-Bromofluorobenzene	106	0	75 - 120		%REC	1	03/17/10 02:29 PM
Surr: Dibromofluoromethane	101	0	85 - 115		%REC	1	03/17/10 02:29 PM
Surr: Toluene-d8	98.6	0	85 - 120		%REC	1	03/17/10 02:29 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-FB-001-0310
Lab ID: 1003121-06
Collection Date: 03/15/10 12:55 PM
Matrix: Field Blank

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:54 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 02:54 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:54 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 02:54 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 02:54 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 02:54 PM
Surr: 1,2-Dichloroethane-d4	104	0	70 - 120		%REC	1	03/17/10 02:54 PM
Surr: 4-Bromofluorobenzene	105	0	75 - 120		%REC	1	03/17/10 02:54 PM
Surr: Dibromofluoromethane	102	0	85 - 115		%REC	1	03/17/10 02:54 PM
Surr: Toluene-d8	101	0	85 - 120		%REC	1	03/17/10 02:54 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-RB-001-0310
Lab ID: 1003121-07
Collection Date: 03/15/10 12:14 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:33 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 04:33 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:33 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:33 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:33 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:33 PM
Surr: 1,2-Dichloroethane-d4	101	0	70 - 120		%REC	1	03/17/10 04:33 PM
Surr: 4-Bromofluorobenzene	105	0	75 - 120		%REC	1	03/17/10 04:33 PM
Surr: Dibromofluoromethane	101	0	85 - 115		%REC	1	03/17/10 04:33 PM
Surr: Toluene-d8	102	0	85 - 120		%REC	1	03/17/10 04:33 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater
Project No:
Lab Order: 1003121

Client Sample ID: HTSA-0197-HMW-152-0310
Lab ID: 1003121-08
Collection Date: 03/15/10 12:55 PM
Matrix: Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
8260 Water Volatiles by GC/MS		**SW8260B**					**Analyst: KL**
Methyl tert-butyl ether	0.00796	0.000300	0.00100		mg/L	1	03/17/10 04:57 PM
Benzene	<0.000200	0.000200	0.00100		mg/L	1	03/17/10 04:57 PM
Ethylbenzene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:57 PM
Toluene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:57 PM
m,p-Xylene	<0.000600	0.000600	0.00200		mg/L	1	03/17/10 04:57 PM
o-Xylene	<0.000300	0.000300	0.00100		mg/L	1	03/17/10 04:57 PM
Surr: 1,2-Dichloroethane-d4	104	0	70 - 120		%REC	1	03/17/10 04:57 PM
Surr: 4-Bromofluorobenzene	104	0	75 - 120		%REC	1	03/17/10 04:57 PM
Surr: Dibromofluoromethane	100	0	85 - 115		%REC	1	03/17/10 04:57 PM
Surr: Toluene-d8	99.8	0	85 - 120		%REC	1	03/17/10 04:57 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Zia Engineering & Environmental
Work Order: 1003121
Project: HELSTF TSA Groundwater

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS5_100317B

Sample ID:	**LCS-40047**	**Batch ID:**	**40047**	**TestNo:**	**SW8260B**	**Units:**	**mg/L**
SampType:	**LCS**	**Run ID:**	**GCMS5_100317B**	**Analysis Date:**	**03/17/10 09:52 AM**	**Prep Date:**	**03/17/10**

Analyte	**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Benzene	0.0237	0.00100	0.0232	0	102	80	120			
Ethylbenzene	0.0237	0.00100	0.0232	0	102	75	125			
m,p-Xylene	0.0475	0.00200	0.0464	0	102	75	130			
Methyl tert-butyl ether	0.0252	0.00100	0.0232	0	109	65	125			
o-Xylene	0.0247	0.00100	0.0232	0	106	80	120			
Toluene	0.0241	0.00200	0.0232	0	104	75	120			
Surr: 1,2-Dichloroethane-d4	201		200.0		100	70	120			
Surr: 4-Bromofluorobenzene	194		200.0		97.2	75	120			
Surr: Dibromofluoromethane	204		200.0		102	85	115			
Surr: Toluene-d8	194		200.0		97.1	85	120			

Sample ID:	**MB-40047**	**Batch ID:**	**40047**	**TestNo:**	**SW8260B**	**Units:**	**mg/L**
SampType:	**MBLK**	**Run ID:**	**GCMS5_100317B**	**Analysis Date:**	**03/17/10 11:09 AM**	**Prep Date:**	**03/17/10**

Analyte	**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Benzene	<0.000200	0.00100								
Ethylbenzene	<0.000300	0.00100								
m,p-Xylene	<0.000600	0.00200								
Methyl tert-butyl ether	<0.000300	0.00100								
o-Xylene	<0.000300	0.00100								
Toluene	<0.000600	0.00200								
Surr: 1,2-Dichloroethane-d4	205		200.0		103	70	120			
Surr: 4-Bromofluorobenzene	211		200.0		105	75	120			
Surr: Dibromofluoromethane	203		200.0		101	85	115			
Surr: Toluene-d8	200		200.0		100	85	120			

Sample ID:	**1003121-02AMS**	**Batch ID:**	**40047**	**TestNo:**	**SW8260B**	**Units:**	**mg/L**
SampType:	**MS**	**Run ID:**	**GCMS5_100317B**	**Analysis Date:**	**03/17/10 12:48 PM**	**Prep Date:**	**03/17/10**

Analyte	**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Benzene	0.0227	0.00100	0.0232	0	97.9	80	120			
Ethylbenzene	0.0227	0.00100	0.0232	0	97.9	75	125			
m,p-Xylene	0.0467	0.00200	0.0464	0	101	75	130			
Methyl tert-butyl ether	0.0240	0.00100	0.0232	0	104	65	125			
o-Xylene	0.0240	0.00100	0.0232	0	103	80	120			
Toluene	0.0226	0.00200	0.0232	0	97.5	75	120			
Surr: 1,2-Dichloroethane-d4	208		200.0		104	70	120			
Surr: 4-Bromofluorobenzene	201		200.0		101	75	120			
Surr: Dibromofluoromethane	203		200.0		102	85	115			
Surr: Toluene-d8	194		200.0		97.0	85	120			

Sample ID:	**1003121-02AMSD**	**Batch ID:**	**40047**	**TestNo:**	**SW8260B**	**Units:**	**mg/L**
SampType:	**MSD**	**Run ID:**	**GCMS5_100317B**	**Analysis Date:**	**03/17/10 01:14 PM**	**Prep Date:**	**03/17/10**

Analyte	**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Benzene	0.0230	0.00100	0.0232	0	99.3	80	120	1.44	20	
Ethylbenzene	0.0224	0.00100	0.0232	0	96.8	75	125	1.20	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Zia Engineering & Environmental
Work Order: 1003121
Project: HELSTF TSA Groundwater

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS5_100317B

m,p-Xylene	0.0462	0.00200	0.0464	0	99.5	75	130	1.08	20
Methyl tert-butyl ether	0.0242	0.00100	0.0232	0	104	65	125	0.622	20
o-Xylene	0.0236	0.00100	0.0232	0	102	80	120	1.77	20
Toluene	0.0225	0.00200	0.0232	0	97.0	75	120	0.532	20
Surr: 1,2-Dichloroethane-d4	206		200.0		103	70	120	0	0
Surr: 4-Bromofluorobenzene	198		200.0		99.1	75	120	0	0
Surr: Dibromofluoromethane	205		200.0		103	85	115	0	0
Surr: Toluene-d8	196		200.0		97.8	85	120	0	0

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Zia Engineering & Environmental
Work Order: 1003121
Project: HELSTF TSA Groundwater

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS5_100317B

Sample ID:	**ICV-100317**	**Batch ID:**	**R48408**	**TestNo:**		**SW8260B**		**Units:**	**mg/L**
SampType:	**ICV**	**Run ID:**	**GCMS5_100317B**	**Analysis Date:**		**03/17/10 09:26 AM**		**Prep Date:**	

Analyte	**Result**	**RL**	**SPK value**	**Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**%RPD**	**RPD Limit**	**Qual**
Benzene	0.0459	0.00100	0.0464	0	99.0	80	120			
Ethylbenzene	0.0452	0.00100	0.0464	0	97.3	80	120			
m,p-Xylene	0.0911	0.00200	0.0928	0	98.1	80	120			
Methyl tert-butyl ether	0.0493	0.00100	0.0464	0	106	80	120			
o-Xylene	0.0493	0.00100	0.0464	0	106	80	120			
Toluene	0.0455	0.00200	0.0464	0	98.0	80	120			
Surr: 1,2-Dichloroethane-d4	205		200.0		103	70	120			
Surr: 4-Bromofluorobenzene	192		200.0		95.8	75	120			
Surr: Dibromofluoromethane	203		200.0		102	85	115			
Surr: Toluene-d8	196		200.0		98.0	85	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

DHL Analytical

CLIENT: Zia Engineering & Environmental
Work Order: 1003121
Project: HELSTF TSA Groundwater
Test No: SW8260B **Matrix:** W

QC SUMMARY REPORT SURROGATE RECOVERIES

Sample ID	BR4FBZ	BZMED8	DBFM	DCA12D4
1003121-01A	107	99.1	102	103
1003121-02A	107	100	102	103
1003121-02AMS	101	97.0	102	104
1003121-02AMSD	99.1	97.8	103	103
1003121-03A	103	100	101	102
1003121-04A	105	99.2	101	103
1003121-05A	106	98.6	101	102
1003121-06A	105	101	102	104
1003121-07A	105	102	101	101
1003121-08A	104	99.8	100	104
LCS-40047	97.2	97.1	102	100
MB-40047	105	100	101	103

Acronym	Surrogate	QC Limits
BR4FBZ	4-Bromofluorobenzene	75 - 120
BZMED8	Toluene-d8	85 - 120
DBFM	Dibromofluoromethane	85 - 115
DCA12D4	1,2-Dichloroethane-d4	70 - 120

*** Surrogate recovery outside aceptance limits**

DHL Analytical

Date: 03/25/10

Lab Order: 1003121
Client: Zia Engineering & Environmental
Project: HELSTF TSA Groundwater

Sequence Report

Run ID: GCMS5_100317B

Sample ID	Client Sample ID	Test Number	Batch ID	Dilution	Analysis Date	Prep Date
ICV-100317	-----	SW8260B	R48408	1	03/17/10 09:26 AM	
LCS-40047	-----	SW8260B	40047	1	03/17/10 09:52 AM	03/17/10
MB-40047	-----	SW8260B	40047	1	03/17/10 11:09 AM	03/17/10
1003121-02A	HTSA-0197-HMW-049-0310	SW8260B	40047	1	03/17/10 11:59 AM	03/17/10
1003121-02AMS	HTSA-0197-HMW-049-0310MS	SW8260B	40047	1	03/17/10 12:48 PM	03/17/10
1003121-02AMSD	HTSA-0197-HMW-049-0310MSD	SW8260B	40047	1	03/17/10 01:14 PM	03/17/10
1003121-05A	HTSA-0197-TB-227-0310	SW8260B	40047	1	03/17/10 02:29 PM	03/17/10
1003121-06A	HTSA-0197-FB-001-0310	SW8260B	40047	1	03/17/10 02:54 PM	03/17/10
1003121-01A	HTSA-0197-HMW-050-0310	SW8260B	40047	1	03/17/10 03:19 PM	03/17/10
1003121-03A	HTSA-0197-HMW-048-0310	SW8260B	40047	1	03/17/10 03:44 PM	03/17/10
1003121-04A	HTSA-0197-HMW-052-0310	SW8260B	40047	1	03/17/10 04:08 PM	03/17/10
1003121-07A	HTSA-0197-RB-001-0310	SW8260B	40047	1	03/17/10 04:33 PM	03/17/10
1003121-08A	HTSA-0197-HMW-152-0310	SW8260B	40047	1	03/17/10 04:57 PM	03/17/10

CLIENT: Zia Engineering & Environmental
Work Order: 1003121
Project: HELSTF TSA Groundwater

MQL SUMMARY REPORT

TestNo: SW8260B Analyte	MDL mg/L	MQL mg/L
Benzene	0.000200	0.00100
Ethylbenzene	0.000300	0.00100
m,p-Xylene	0.000600	0.00200
Methyl tert-butyl ether	0.000300	0.00100
o-Xylene	0.000300	0.00100
Toluene	0.000600	0.00200

Qualifiers:
MQL - Method Quantitation Limit as defined by TRRP
MDL - Method Detection Limit as defined by TRRP

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009050507-001A

Bradley Davis
Zia Engineering & Environmental Consultants LLC
Bldg 126 3rd Floor
PO Box 363
WSMR NM 88002

May 29, 2009

Sample ID:	HTSA-0197-HVW-008-0509	Sampled By:	GG	
Project Name :		Sample Of:	Liquid	
Project Number :		Sample Date:	05/11/2009	12:48
Project Location:		Sample Condition:		
Sample Point:		PO / Ref. No:		

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Surface tension @ 75°F	ASTM-D-1331-A	22.6	DYNES/CM		MES	05/29/09
API Gravity @ 60 °F	ASTM-D-4052	61.92	°		BAC	05/29/09
Specific Gravity @ 60/60 °F	ASTM-D-4052	0.7316	_		BAC	05/29/09
Density @ 60 °F	ASTM-D-4052	0.7308	g/ml		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	0.52	cSt		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	27.4	SUS		BAC	05/29/09

Comments:

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

Certificate of Analysis

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Analysis Number:	2009050507-001A		
Sample ID:	HTSA-0197-HVW-008-0509	**Date of Sample:**	05/11/09
Project:	HELSTF TSA Long Term Grd.Water	**Time Sampled:**	12:48 PM
Project Location:	WSMR, NM	**Date Sample Analyzed:**	06/01/09
Client	Zia Engineering & Environmental	**Contact(s):**	Bradley Davis
Address	P O Box 363		
Suite / Department	Bldg.126,3rd Floor		
City	WSMR	**State**	New Mexico **Zip** 88002
Phone	575-678-3397 **Ext**	**E-Mail**	bdavis@ws-tech..com
Fax			
Color:	Straw	**Odor:**	Gasoline
Specific Gravity @ 60° F.	0.7316	**API @ 60° F.**	61.92
Carbon Range	C3 - C30+	**Major Range**	C5 - C10

Paraffin	11.1017	wt%	**N-Hexane**	2.226	wt%
Isoparaffins	39.9888	wt%	**Benzene**	0.293	wt%
Naphthenics	10.7061	wt%	**Ethyl Benzene**	2.332	wt%
Aromatics	29.5950	wt%	**Toluene**	4.467	wt%
Olefins	8.5877	wt%	**Meta-Xylene**	3.875	wt%
Unknowns	N/D	wt%	**Para-Xylene**	1.569	wt%
2,2,4-Tri Methylpentane	4.031	wt%	**Ortho-Xylene**	2.028	wt%
			Xylenes	7.472	wt%
Calculated Research Octane	82.489		**EDB**	N/A	wt%
Lead / Manganese	N/A		**EDC**	N/A	wt%
Oxygnates	N/D		**Ethanol**	N/D	wt%
C_{17}	N/D	wt%	**C_{18}**	0.015	wt%
Pristane	N/D	wt%	**Phytane**	N/D	wt%
Naphthalene	0.277	wt%	**2-Methyl Naphthalene**	0.014	wt%
1-Methyl Naphthalene	0.255	wt%			

Gasoline Range:	C_4-C_{13} Indicators:	2,2,4-TMP; MTBE; Olefins, Lead
Diesel Range:	C_7-C_{20} Indicators:	Pristane, Phytane
Condensate Range:	C_2-C_{25}+ Indicators:	No Olefins, Light & Heavies
Heavy Oil:	C_{20+}	

Comments: **N/A Not Applicable N/D None Detected**

Chris Staley

Chris Staley
Hydrocarbon Laboratory Manager

Detailed Hydrocarbon Analysis Summary Report -

Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Sample: 2009050507-001A RG
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

SUMMARY REPORT

Group Type	Total(Mass%)	Total(Vol%)	Total(Mol%)
Paraffins:	11.1017	12.4436	13.6385
I-Paraffins:	39.9888	42.4929	40.8970
Olefins:	8.5877	8.9756	10.0527
Napthenes:	10.7061	10.1382	10.5684
Aromatics:	29.5950	25.9303	24.8386
Total C30+:	0.0208	0.0194	0.0048
Total Unknowns:	0.0000	0.0000	0.0000

Oxygenates:

Total:	0.0000(Mass%)	0.0000(Vol%)
Total Oxygen Content:	0.0000(Mass%)	

Multisubstituted Aromatics: 12.3537(Mass%) 10.2102(Vol%)

Average Molecular Weight: 98.4318

Relative Density: 0.7221

Vapor Pressure: 5.8525

Calculated Octane Number: 82.4892

	IBP	T10	T50	T90	FBP
Boiling Point (Deg F)	31.10	82.11	210.63	336.88	472.35

Percent Carbon: 86.9185 Percent Hydrogen: 13.0815

Bromine Number (Calc): 16.3079

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Normalized to 100.0000%

Oxygenates

Compound	Mass%	Mass% Oxygen	Vol%
No Oxy Compounds Found	0.00	0.00	0.00

Molecular Weight and Relative Density Data

Group	Avg Mw.	Avg Rel. Density
C1	0.000	0.000
C2	0.000	0.000
C3	44.097	0.500
C4	57.755	0.585
C5	71.712	0.630
C6	85.388	0.679
C7	97.821	0.731
C8	116.330	0.730
C9	122.171	0.827
C10	134.913	0.842
C11	150.261	0.835
C12	158.303	0.842
C13	158.586	0.904
C14	189.769	0.759
C15	199.085	0.784
C16	0.000	0.000
C17	205.000	1.020
C18	254.510	0.777
C19	254.510	0.777
C20	268.530	0.777
C21	0.000	0.000
C22	0.000	0.000
C23	0.000	0.000
C24	338.670	0.799
C25	0.000	0.000
C26	0.000	0.000
C27	0.000	0.000
C28	0.000	0.000

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

C29	0.000	0.000
Total Sample:	98.40	0.72

Octane Number

Research Octane Number: 82.50
(Calculated from Individual Component Values)

Contribution to Total by:

Paraffins:	5.53
Iso-Paraffins:	32.90
Aromatics:	27.10
Napthenes:	9.24
Olefins:	7.80
Oxygenates:	0.00

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Comments:

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Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

Totals by Group Type & Carbon Number (in Mass Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.00961	0.00000	0.00000	0.00000	0.00000	0.00961
C4	2.20910	0.27758	0.24385	0.00000	0.00000	2.73053
C5	3.12789	7.21929	2.36066	0.35764	0.00000	13.06548
C6	2.22639	9.05427	2.09248	2.67803	0.29297	16.34415
C7	1.66846	8.81566	3.50829	2.31523	4.46741	20.77504
C8	0.89542	8.39538	0.38241	4.63418	9.80455	24.11194
C9	0.44560	2.49754	0.00000	0.54502	9.05389	12.54205
C10	0.21663	1.35795	0.00000	0.17600	4.61785	6.36842
C11	0.08661	0.76409	0.00000	0.00000	1.00986	1.86056
C12	0.07399	0.77701	0.00000	0.00000	0.34846	1.19946
C13	0.05075	0.39711	0.00000	0.00000	0.00000	0.44786
C14	0.03246	0.04817	0.00000	0.00000	0.00000	0.08064
C15	0.02388	0.19676	0.00000	0.00000	0.00000	0.22064
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.10829	0.00000	0.00000	0.00000	0.10829
C18	0.01465	0.00000	0.00000	0.00000	0.00000	0.01465
C19	0.00000	0.06292	0.00000	0.00000	0.00000	0.06292
C20	0.00000	0.01675	0.00000	0.00000	0.00000	0.01675
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.02021	0.00000	0.00000	0.00000	0.00000	0.02021
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	11.10166	39.98877	8.58768	10.70610	29.59498	99.97921

Oxygenates 0.00000 Total C30+: 0.02079
Total Unknowns: 0.00000 Grand Total: 100.00000

Totals by Group Type & Carbon Number (in Volume Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.01387	0.00000	0.00000	0.00000	0.00000	0.01387
C4	2.75613	0.35974	0.25742	0.00000	0.00000	3.37330
C5	3.60704	8.41504	2.60848	0.34648	0.00000	14.97704
C6	2.43818	9.94858	2.17705	2.58332	0.24071	17.38785
C7	1.76223	9.27308	3.55724	2.20233	3.72091	20.51578
C8	0.92044	8.56878	0.37537	4.34353	9.63403	23.84214

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG
Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:
Normalized to 100.0000%

C9	0.44841	2.49864	0.00000	0.50344	7.50165	10.95214
C10	0.21429	1.32727	0.00000	0.15912	3.75922	5.45990
C11	0.08406	0.73465	0.00000	0.00000	0.79106	1.60977
C12	0.07095	0.67468	0.00000	0.00000	0.28276	1.02840
C13	0.04845	0.30950	0.00000	0.00000	0.00000	0.35795
C14	0.03073	0.04599	0.00000	0.00000	0.00000	0.07672
C15	0.01691	0.18626	0.00000	0.00000	0.00000	0.20317
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.07667	0.00000	0.00000	0.00000	0.07667
C18	0.01362	0.00000	0.00000	0.00000	0.00000	0.01362
C19	0.00000	0.05849	0.00000	0.00000	0.00000	0.05849
C20	0.00000	0.01556	0.00000	0.00000	0.00000	0.01556
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.01826	0.00000	0.00000	0.00000	0.00000	0.01826
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	12.44358	42.49293	8.97557	10.13821	25.93034	99.98063

Oxygenates 0.00000 Total C30+: 0.01937

Total Unknowns: 0.00000 Grand Total: 100.00000

Detailed Hydrocarbon Analysis Detail Report -

Report Date: 6/1/2009 8:46:54 AM

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Sample: 2009050507-001A RG
Processed 295 Peaks
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Comments:

Acquired: 05/29/09 11:55:41
Analyzed: 6/1/2009 8:43:19 AM

Normalized to 100.0000%

Totals by Group Type & Carbon Number (in Mol Percent)

	Paraffins	I-Paraffins	Olefins	Napthenes	Aromatics	Total
C1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C2	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C3	0.02146	0.00000	0.00000	0.00000	0.00000	0.02146
C4	3.74107	0.47008	0.44246	0.00000	0.00000	4.65361
C5	4.26722	9.84889	3.31552	0.50194	0.00000	17.93357
C6	2.54296	10.34171	2.45492	3.13210	0.36917	18.84086
C7	1.63893	8.66658	3.50603	2.32095	4.77231	20.90480
C8	0.77157	7.26794	0.33378	4.06494	7.96383	20.40206
C9	0.34198	1.92350	0.00000	0.42495	7.41454	10.10497
C10	0.14986	0.94252	0.00000	0.12350	3.43046	4.64635
C11	0.05454	0.48737	0.00000	0.00000	0.67690	1.21880
C12	0.04275	0.49169	0.00000	0.00000	0.21137	0.74582
C13	0.02710	0.25088	0.00000	0.00000	0.00000	0.27798
C14	0.01611	0.02572	0.00000	0.00000	0.00000	0.04183
C15	0.01147	0.09762	0.00000	0.00000	0.00000	0.10909
C16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C17	0.00000	0.05200	0.00000	0.00000	0.00000	0.05200
C18	0.00566	0.00000	0.00000	0.00000	0.00000	0.00566
C19	0.00000	0.02433	0.00000	0.00000	0.00000	0.02433
C20	0.00000	0.00614	0.00000	0.00000	0.00000	0.00614
C21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C24	0.00587	0.00000	0.00000	0.00000	0.00000	0.00587
C25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
C29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Total:	13.63855	40.89698	10.05271	10.56838	24.83858	99.99520

Oxygenates 0.00000 Total C14+: 0.00480

Total Unknowns: 0.00000 Grand Total: 100.00000

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments: Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 7**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
7.613	300.000	P3	propane	0.010	0.014	0.021
8.050	366.780	I4	i-butane	0.278	0.360	0.470
8.423	400.000	P4	n-butane	2.209	2.756	3.741
8.550	409.870	O4	t-butene-2	0.010	0.012	0.017
8.613	414.450	I5	2,2-dimethylpropane	0.021	0.026	0.028
8.763	424.540	O4	c-butene-2	0.010	0.011	0.017
9.370	457.240	O5	3-methylbutene-1	0.064	0.074	0.090
9.793	474.970	I5	i-pentane	7.198	8.390	9.820
10.183	488.880	O4	butyne-2	0.224	0.235	0.408
10.387	495.430	O5	2-methylbutene-1	0.415	0.461	0.583
10.537	500.000	P5	n-pentane	3.128	3.607	4.267
10.780	507.270	O5	t-pentene-2	0.630	0.702	0.884
11.067	515.230	O5	3,3-dimethylbutene-1	0.348	0.386	0.488
11.253	520.110	O5	c-pentene-2	0.838	0.923	1.175
11.347	522.460	O5	2-methylbutene-2	0.008	0.008	0.011
11.947	536.410	I6	2,2-dimethylbutane	0.897	0.998	1.025
12.803	553.540	O5	cyclopentene	0.058	0.055	0.084
12.980	556.740	O6	4-methylpentene-1	0.057	0.061	0.066
13.073	558.390	O6	3-methylpentene-1	0.083	0.090	0.097
13.430	564.470	N5	cyclopentane	0.358	0.346	0.502
13.517	565.900	I6	2,3-dimethylbutane	1.466	1.600	1.674
13.640	567.890	I6	C6-Iso-Paraffin	0.054	0.059	0.062
13.757	569.740	I6	2-methylpentane	4.108	4.542	4.692
14.710	583.740	I6	3-methylpentane	2.529	2.749	2.888
15.050	588.300	O6	2-methylpentene-1	0.256	0.270	0.299
15.123	589.260	O6	hexene-1	0.132	0.140	0.154
15.993	600.000	P6	n-hexane	2.226	2.438	2.543
16.143	602.100	O6	t-hexene-3	0.173	0.183	0.202
16.247	603.530	O6	c-hexene-3	0.067	0.071	0.078
16.370	605.210	O6	t-hexene-2	0.357	0.378	0.418
16.560	607.760	O6	2-methylpentene-2	0.383	0.401	0.448
16.760	610.390	O6	3-methyl-c-pentene-2	0.081	0.083	0.094
16.847	611.510	O6	3-methylcyclopentene	0.238	0.225	0.285
17.027	613.810	O6	O13	0.042	0.044	0.049
17.167	615.570	O6	c-hexene-2	0.196	0.204	0.229
17.713	622.210	O7	3,3-dimethylpentene-1	0.396	0.407	0.397
18.127	627.000	I7	2,2-dimethylpentane	0.144	0.155	0.142
18.333	629.330	N6	methylcyclopentane	2.678	2.583	3.132

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments: Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 8**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
18.703	633.400	I7	2,4-dimethylpentane	1.299	1.394	1.276
18.843	634.900	O7	O16	0.007	0.007	0.008
19.247	639.130	I7	2,2,3-trimethylbutane	0.048	0.050	0.047
19.887	645.570	I7	C7-Iso-Paraffin	0.008	0.008	0.008
20.020	646.870	O7	4,4-dimethyl-c-pentene-2	0.012	0.012	0.012
20.353	650.060	O6	1-methylcyclopentene	0.029	0.026	0.034
20.473	651.190	I7	C7-Iso-Paraffin	0.015	0.014	0.018
20.590	652.270	A6	benzene	0.293	0.241	0.369
20.673	653.050	O7	3-ethylpentene-1	0.137	0.141	0.137
20.827	654.450	O7	2-methyl-c-hexene-3	0.026	0.027	0.026
20.977	655.810	O7	5-methylhexene-1	0.016	0.017	0.016
21.313	658.810	I7	3,3-dimethylpentane	0.186	0.193	0.182
21.500	660.450	O7	2-methyl-t-hexene-3	0.020	0.020	0.020
21.700	662.170	O7	2-ethyl-3-methylbutene-1	1.347	1.363	1.350
21.920	664.040	O7	4-methylhexene-1	0.059	0.061	0.059
22.100	665.550	I7	C7-Iso-Paraffin	0.012	0.012	0.012
22.190	666.300	O7	4-methyl-t/c-hexene-2	0.008	0.008	0.008
22.313	667.320	I7	C7-Iso-Paraffin	0.046	0.047	0.046
22.577	669.470	I7	C7-Iso-Paraffin	0.127	0.130	0.127
22.753	670.890	I7	2-methylhexane	1.800	1.916	1.768
22.937	672.340	I7	2,3-dimethylpentane	2.703	2.808	2.655
23.273	674.970	N7	1,1-dimethylcyclopentane	0.104	0.099	0.104
23.513	676.810	O7	1,6-heptadiene	0.041	0.040	0.041
23.780	678.830	I7	3-methylhexane	1.973	2.074	1.938
24.203	681.960	I7	C7-Iso-Paraffin	0.048	0.051	0.048
24.543	684.420	N7	1c,3-dimethylcyclopentane	0.397	0.385	0.398
24.883	686.830	N7	1t,3-dimethylcyclopentane	0.362	0.349	0.363
25.040	687.930	N7	1t,2-dimethylcyclopentane	0.258	0.248	0.258
25.220	689.170	I7	3-ethylpentane	0.407	0.421	0.400
25.413	690.500	I8	2,2,4-trimethylpentane	4.031	4.207	3.473
26.160	695.490	O7	3-methyl-c-hexene-3	0.072	0.072	0.072
26.620	698.470	O7	t-heptene-3	0.251	0.258	0.252
26.860	700.000	P7	n-heptane	1.668	1.762	1.639
27.120	702.280	O7	3-methyl-c-hexene-2	0.294	0.298	0.294
27.257	703.470	O7	3-methyl-t-hexene-3	0.111	0.115	0.111
27.493	705.520	O7	3-ethylpentene-2	0.128	0.127	0.128
27.700	707.280	I8	C8-Iso-Paraffin	0.069	0.068	0.069
28.117	710.790	O7	3-methyl-t-hexene-2	0.235	0.236	0.236

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

RawFile: M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf
Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG
Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:
Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 9**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
28.577	714.580	O7	O26	0.133	0.134	0.134
29.110	718.870	O7	O27	0.017	0.017	0.017
29.207	719.640	I8	C8-Iso-Paraffin	0.009	0.009	0.009
29.357	720.820	I8	2,2-dimethylhexane	0.181	0.188	0.156
29.463	721.660	N7	methylcyclohexane	1.195	1.122	1.198
29.913	725.140	N8	1,1,3-trimethylcyclopentane	0.170	0.164	0.149
31.083	733.890	I8	C8-Iso-Paraffin	0.224	0.216	0.197
31.280	735.320	N8	1c,2t,4-trimethylcyclopentane	0.450	0.425	0.395
31.417	736.300	O7	O34	0.102	0.100	0.102
31.543	737.210	I8	3,3-dimethylhexane	0.684	0.696	0.590
32.327	742.730	N8	1t,2c,3-trimethylcyclopentane	0.173	0.162	0.152
32.533	744.160	I8	2,3,4-trimethylpentane	0.063	0.063	0.054
33.227	748.860	O7	O39	0.039	0.039	0.035
33.367	749.790	I8	I1	0.135	0.136	0.117
33.603	751.360	I8	C8-Iso-Paraffin	0.026	0.026	0.022
33.760	752.390	I8	2,3,3-trimethylpentane	1.504	1.496	1.296
34.030	754.150	O8	O41	0.065	0.064	0.057
34.253	755.600	A7	toluene	4.467	3.721	4.772
34.537	757.410	I8	C8-Iso-Paraffin	0.058	0.048	0.062
34.710	758.510	I8	2,3-dimethylhexane	0.021	0.022	0.018
34.943	759.980	O8	O44	0.039	0.039	0.034
35.370	762.640	N8	1,1,2-trimethylcyclopentane	0.626	0.585	0.549
35.560	763.810	O7	O46	0.057	0.056	0.050
35.677	764.530	O8	*2-ethylhexene-1	0.040	0.037	0.035
35.873	765.720	I8	4-methylheptane	0.072	0.074	0.062
36.300	768.300	I8	2-methylheptane	0.843	0.872	0.726
36.523	769.630	N8	1c,2c,4-trimethylcyclopentane	0.314	0.298	0.276
36.697	770.650	N8	1c,3-dimethylcyclohexane	0.074	0.070	0.065
36.780	771.150	I8	C8-Iso-Paraffin	0.083	0.078	0.072
37.137	773.230	N8	1c,2t,3-trimethylcyclopentane	0.107	0.100	0.094
37.473	775.180	N8	1t,4-dimethylcyclohexane	0.793	0.751	0.695
37.677	776.350	N8	1,1-dimethylcyclohexane	0.498	0.461	0.437
37.810	777.110	O8	1,3-octadiene	0.071	0.067	0.063
38.003	778.200	I9	2,2,5-trimethylhexane	0.165	0.169	0.127
38.927	783.350	N8	3c-ethylmethylcyclopentane	0.047	0.044	0.041
39.287	785.310	I8	C8-Iso-Paraffin	0.392	0.369	0.344
39.517	786.550	N8	3t-ethylmethylcyclopentane	0.171	0.161	0.150
39.887	788.540	N8	2t-ethylmethylcyclopentane	0.127	0.120	0.112

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Sample: 2009050507-001A RG Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments: Normalized to 100.0000%

Hold

Components Listed in Chromatographic Order **Page: 10**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
40.113	789.740	N8	1,1-methylethylcyclopentane	0.127	0.117	0.111
40.497	791.760	I9	2,2,4-trimethylhexane	0.062	0.060	0.047
40.987	794.300	N8	1t,2-dimethylcyclohexane	0.250	0.233	0.220
41.613	797.500	N8	1t,3-dimethylcyclohexane	0.159	0.148	0.140
41.873	798.810	N8	1c,2c,3-trimethylcyclopentane	0.021	0.020	0.019
42.110	800.000	P8	n-octane	0.895	0.920	0.772
42.303	801.110	N8	1c,4-dimethylcyclohexane	0.174	0.161	0.153
42.807	804.000	O8	t-octene-2	0.048	0.049	0.042
43.190	806.160	O8	O49	0.091	0.091	0.080
43.453	807.640	I9	C9-Iso-Paraffin	0.062	0.062	0.054
43.577	808.330	N8	i-propylcyclopentane	0.024	0.022	0.021
44.407	812.890	O8	c-octene-2	0.029	0.029	0.022
44.900	815.560	N8	N1	0.020	0.019	0.018
45.343	817.930	I9	2,3,4-trimethylhexane	0.070	0.069	0.054
45.710	819.860	I9	2,2,3,4-tetramethylpentane	0.060	0.059	0.046
46.067	821.730	N8	N2	0.042	0.039	0.037
46.533	824.150	I9	2,3,5-trimethylhexane	0.017	0.017	0.013
46.963	826.350	N8	1c,2-dimethylcyclohexane	0.139	0.126	0.122
48.100	832.050	I9	2,2-dimethylheptane	0.306	0.311	0.235
48.437	833.710	N8	N4	0.127	0.117	0.111
48.860	835.780	N9	1,1,4-trimethylcyclohexane	0.025	0.023	0.019
49.040	836.650	I9	2,2,3-trimethylhexane	0.030	0.030	0.023
49.350	838.150	I9	2,4-dimethylheptane	0.104	0.105	0.080
49.953	841.020	I9	4,4-dimethylheptane	0.209	0.211	0.161
52.280	851.750	A8	ethylbenzene	2.332	1.943	2.162
53.027	855.080	I9	I3	0.053	0.052	0.041
54.523	861.580	A8	m-xylene	3.875	4.099	3.021
54.800	862.760	A8	p-xylene	1.569	1.660	1.223
55.133	864.170	N9	1c,3c,5c-trimethylcyclohexane	0.118	0.109	0.092
56.337	869.190	I9	3,4 -dimethylheptane	0.040	0.039	0.030
57.073	872.200	I9	I5	0.230	0.228	0.177
57.323	873.220	I9	4-ethylheptane	0.301	0.302	0.231
58.500	877.910	I9	3-ethylheptane	0.068	0.068	0.052
58.807	879.120	I9	3-methyloctane	0.341	0.342	0.262
59.650	882.400	A8	o-xylene	2.028	1.932	1.557
60.537	885.790	I9	I6	0.072	0.071	0.055
61.030	887.660	N9	N18	0.072	0.066	0.056
61.240	888.450	N9	N19	0.130	0.121	0.102

Detailed Hydrocarbon Analysis Detail Report -

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Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:

Acquired: 05/29/09 11:55:41
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Hold

Components Listed in Chromatographic Order

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
61.687	890.110	N9	N20	0.064	0.059	0.050
61.850	890.720	I9	I8	0.203	0.200	0.155
62.220	892.080	N9	i-butylcyclopentane	0.020	0.018	0.015
63.210	895.690	N9	N22	0.037	0.035	0.029
63.567	896.980	N9	N23	0.035	0.032	0.027
64.193	899.220	I9	I10	0.105	0.103	0.080
64.413	900.000	P9	n-nonane	0.446	0.448	0.342
64.800	902.950	N9	1,1-methylethylcyclohexane	0.045	0.040	0.035
66.067	912.480	A9	3,3,5-Trimethylheptane	0.243	0.203	0.199
66.593	916.390	I10	I11	0.053	0.053	0.037
67.360	922.010	I10	I12	0.104	0.103	0.072
67.733	924.720	I10	2,4-dimethyloctane	0.077	0.076	0.053
68.770	932.170	I10	2,6-dimethyloctane	0.064	0.063	0.044
68.887	933.000	I10	2,5-dimethyloctane	0.080	0.079	0.055
69.567	937.800	I10	C10-Iso-Paraffin	0.093	0.092	0.065
69.697	938.720	N10	N30	0.030	0.027	0.021
70.270	942.720	I10	3,3-dimethyloctane	0.108	0.105	0.075
70.817	946.500	A9	n-propylbenzene	0.692	0.580	0.567
71.140	948.720	I10	3,6-dimethyloctane	0.040	0.040	0.028
71.333	950.050	I10	3-methyl-5-ethylheptane	0.033	0.033	0.023
71.973	954.400	A9	1,3-methylethylbenzene	1.887	1.576	1.545
72.257	956.310	A9	1,4-methylethylbenzene	0.832	0.697	0.681
72.803	959.980	N10	N33	0.017	0.015	0.012
73.097	961.940	A9	1,3,5-trimethylbenzene	0.828	0.691	0.678
73.390	963.880	I10	I15	0.041	0.040	0.028
74.027	968.080	I10	5-methylnonane	0.040	0.039	0.027
74.380	970.390	A9	1,2-methylethylbenzene	1.061	0.870	0.869
74.620	971.960	I10	2-methylnonane	0.130	0.130	0.090
75.040	974.680	I10	3-ethyloctane	0.020	0.019	0.014
75.480	977.510	I10	3-methylnonane	0.142	0.140	0.098
76.023	980.990	I10	I19	0.100	0.098	0.069
76.407	983.420	A9	1,2,4-trimethylbenzene	2.845	2.346	2.330
76.590	984.580	N10	i-butylcyclohexane	0.056	0.051	0.039
77.013	987.250	I10	I21	0.091	0.089	0.063
77.147	988.080	I10	I22	0.041	0.040	0.028
77.320	989.170	I10	I23	0.025	0.024	0.017
77.643	991.190	N10	N37	0.034	0.031	0.024
78.227	994.800	A10	i-butylbenzene	0.026	0.022	0.019

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Sample: 2009050507-001A RG
Processed 295 Peaks
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Comments:

Acquired: 05/29/09 11:55:41
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Hold

Components Listed in Chromatographic Order **Page: 12**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
78.403	995.890	I10	C10-Iso-Paraffin	0.075	0.063	0.055
78.733	997.920	A10	sec-butylbenzene	0.110	0.092	0.080
79.073	1000.000	P10	n-decane	0.217	0.214	0.150
79.337	1002.660	N10	N38	0.039	0.035	0.027
79.757	1006.880	A9	1,2,3-trimethylbenzene	0.666	0.538	0.545
80.027	1009.590	A10	1,3-methyl-i-propylbenzene	0.135	0.113	0.099
80.393	1013.240	A10	1,4-methyl-i-propylbenzene	0.044	0.037	0.032
81.020	1019.450	A10	2-3-dihydroindene	0.281	0.210	0.234
81.563	1024.790	I11	I30	0.050	0.049	0.032
81.707	1026.190	I11	C11-Iso-Paraffin	0.017	0.017	0.011
81.893	1028.010	A10	1,2-methyl-i-propylbenzene	0.053	0.044	0.039
82.283	1031.800	I11	3-ethylnonane	0.068	0.066	0.043
82.447	1033.380	I11	I31	0.058	0.057	0.037
82.883	1037.600	I11	I32	0.017	0.016	0.011
83.087	1039.550	A10	1,3-diethylbenzene	0.239	0.199	0.175
83.377	1042.330	A10	1,3-methyl-n-propylbenzene	0.484	0.406	0.355
83.637	1044.810	I11	I33	0.026	0.025	0.016
83.783	1046.200	I11	C11-Iso-Paraffin	0.279	0.272	0.175
83.890	1047.220	A10	1,4-methyl-n-propylbenzene	0.156	0.132	0.115
84.117	1049.360	A10	1,3-dimethyl-5-ethylbenzene	0.411	0.337	0.301
84.337	1051.440	A10	1,2-diethylbenzene	0.042	0.034	0.031
84.693	1054.800	I11	C11-Iso-Paraffin	0.029	0.024	0.021
85.000	1057.680	A10	1,2-methyl-n-propylbenzene	0.176	0.146	0.129
85.533	1062.650	I11	I37	0.101	0.098	0.063
85.860	1065.680	I11	I38	0.042	0.041	0.026
86.077	1067.680	A10	1,4,dimethyl-2-ethylbenzene	0.302	0.249	0.221
86.253	1069.310	A10	A3	0.363	0.305	0.266
86.437	1071.000	I11	I39	0.048	0.047	0.031
86.863	1074.910	A10	1,2-dimethyl-4-ethylbenzene	0.641	0.529	0.470
87.460	1080.340	A10	1,3-dimethyl-2-ethylbenzene	0.025	0.020	0.018
88.700	1091.500	I11	C11-Iso-Paraffin	0.030	0.024	0.022
88.837	1092.720	A11	1,4-methyl-t-butylbenzene	0.148	0.126	0.098
89.657	1100.000	P11	n-undecane	0.087	0.084	0.055
90.027	1104.470	A10	1,2,4,5-tetramethylbenzene	0.280	0.227	0.205
90.347	1108.330	A11	1,2-methyl-n-butylbenzene	0.385	0.312	0.256
91.353	1120.370	A11	1,2-methyl-t-butylbenzene	0.016	0.013	0.011
91.900	1126.840	A10	5-methylindan	0.233	0.189	0.173
92.397	1132.690	A10	4-methylindan	0.088	0.072	0.066

Detailed Hydrocarbon Analysis Detail Report - Report Date: 6/1/2009 8:46:54 AM

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Hold

Components Listed in Chromatographic Order **Page: 13**

Minutes	Index	Group	Component	Mass %	Volume %	Mol %
92.650	1135.660	A11	1,2-ethyl-n-propylbenzene	0.093	0.076	0.062
92.810	1137.530	A10	2-methylindan	0.225	0.180	0.168
93.217	1142.270	I12	C12-Iso-Paraffin	0.150	0.120	0.112
93.327	1143.550	A12	1,3-di-i-propylbenzene	0.061	0.050	0.037
93.743	1148.380	I12	C12-Iso-Paraffin	0.046	0.037	0.028
93.830	1149.380	A11	n-pentylbenzene	0.030	0.024	0.020
94.103	1152.530	A12	1,2-di-i-propylbenzene	0.042	0.034	0.025
94.167	1153.260	I12	C12-Iso-Paraffin	0.041	0.033	0.025
94.493	1157.010	I12	C12-Iso-Paraffin	0.033	0.027	0.020
94.637	1158.650	A12	1,4-di-i-propylbenzene	0.080	0.065	0.049
95.050	1163.370	A10	tetrahydronaphthalene	0.027	0.020	0.020
95.243	1165.570	I12	C12-Iso-Paraffin	0.069	0.051	0.051
95.370	1167.000	A10	naphthalene	0.277	0.195	0.213
95.977	1173.860	A12	1,4-ethyl-t-butylbenzene	0.067	0.055	0.041
96.280	1177.270	I12	C12-Iso-Paraffin	0.095	0.077	0.058
96.410	1178.730	I12	I45	0.040	0.038	0.023
96.780	1182.870	I12	I47	0.062	0.060	0.036
97.093	1186.370	I12	C12-Iso-Paraffin	0.051	0.049	0.030
97.233	1187.920	I12	I48	0.085	0.082	0.049
97.373	1189.480	I12	I49	0.061	0.058	0.035
98.113	1197.650	I12	C12-Iso-Paraffin	0.044	0.042	0.025
98.327	1200.000	P12	n-dodecane	0.074	0.071	0.043
99.563	1216.840	A12	1,3,5-triethylbenzene	0.025	0.020	0.015
99.903	1221.440	I13	C13-Iso-Paraffin	0.032	0.026	0.019
100.057	1223.500	I13	C13-Iso-Paraffin	0.026	0.021	0.016
100.147	1224.710	I13	C13-Iso-Paraffin	0.016	0.013	0.010
100.917	1235.030	A12	1,2,4-triethylbenzene	0.019	0.015	0.011
101.347	1240.750	I13	C13-Iso-Paraffin	0.064	0.052	0.039
101.520	1243.050	I13	C13-Iso-Paraffin	0.021	0.017	0.013
101.613	1244.280	I13	C13-Iso-Paraffin	0.020	0.016	0.012
102.187	1251.850	I13	C13-Iso-Paraffin	0.039	0.032	0.024
102.397	1254.610	A12	n-hexylbenzene	0.054	0.044	0.033
102.693	1258.500	I13	C13-Iso-Paraffin	0.039	0.031	0.023
102.990	1262.380	I13	C13-Iso-Paraffin	0.016	0.013	0.010
103.823	1273.200	A11	1,2,3,4,5-pentamethylbenzene	0.068	0.049	0.045
104.293	1279.270	A11	2-methylnaphthalene	0.014	0.010	0.010
104.427	1280.980	A11	1-methylnaphthalene	0.255	0.181	0.176
105.607	1296.060	I13	C13-Iso-Paraffin	0.124	0.088	0.085

Detailed Hydrocarbon Analysis Detail Report -

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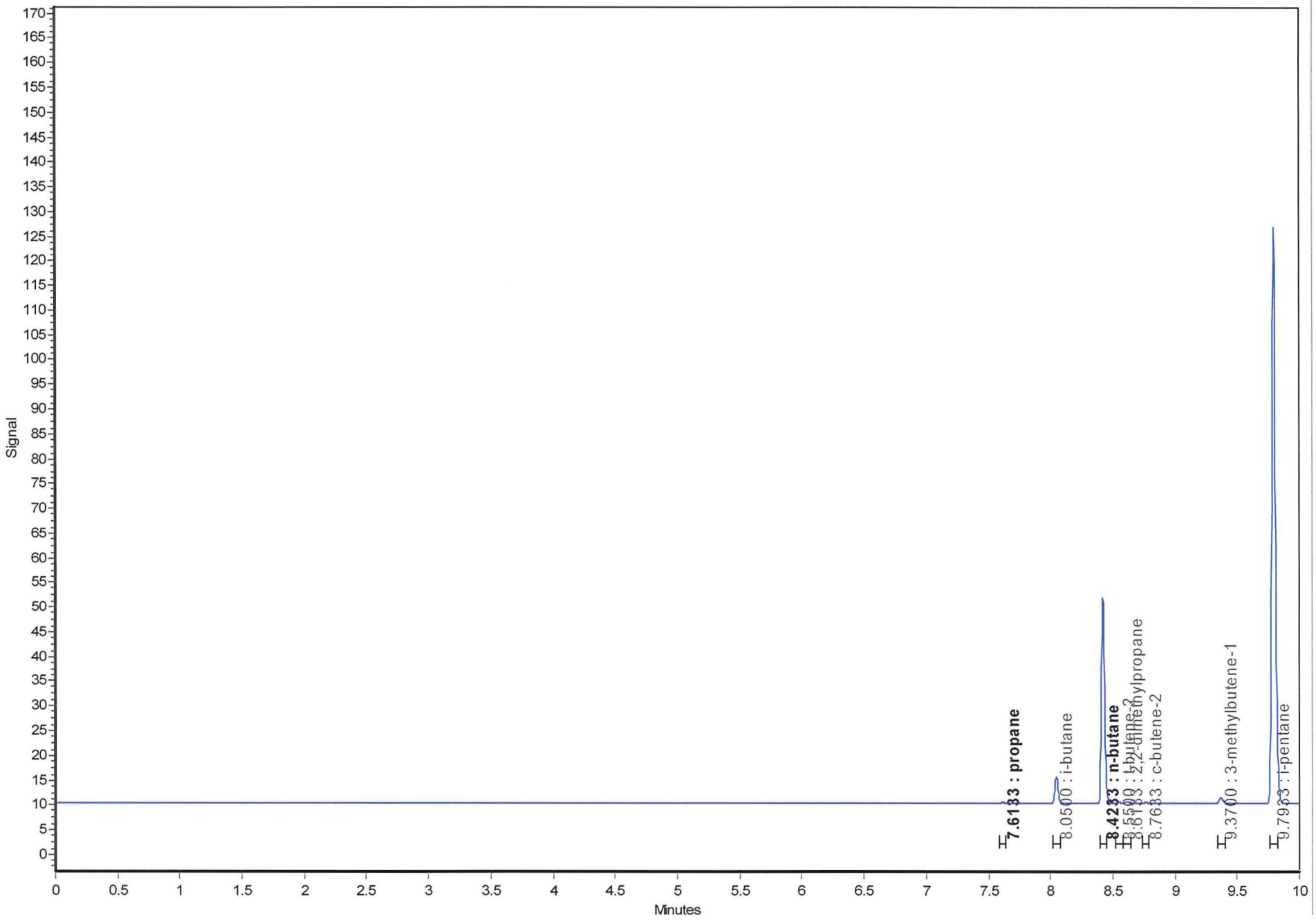
Acquired: 05/29/09 11:55:41
Sample: 2009050507-001A RG
Analyzed: 6/1/2009 8:43:19 AM
Processed 295 Peaks
Reference File: H:\DHA Application Software\References\EXXON 87 JL_05282009.DHA
Comments:
Normalized to 100.0000%

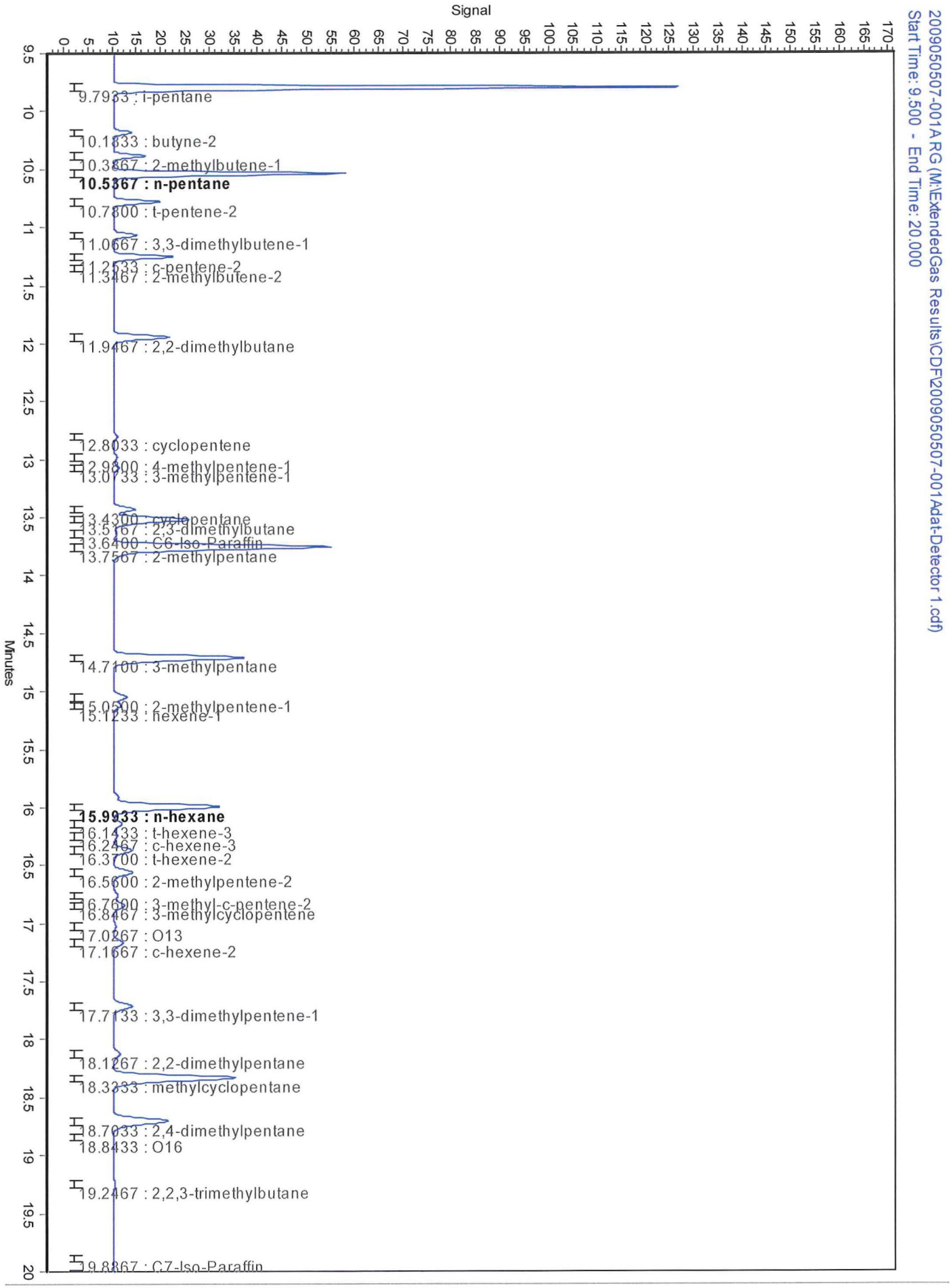
Hold

Components Listed in Chromatographic Order

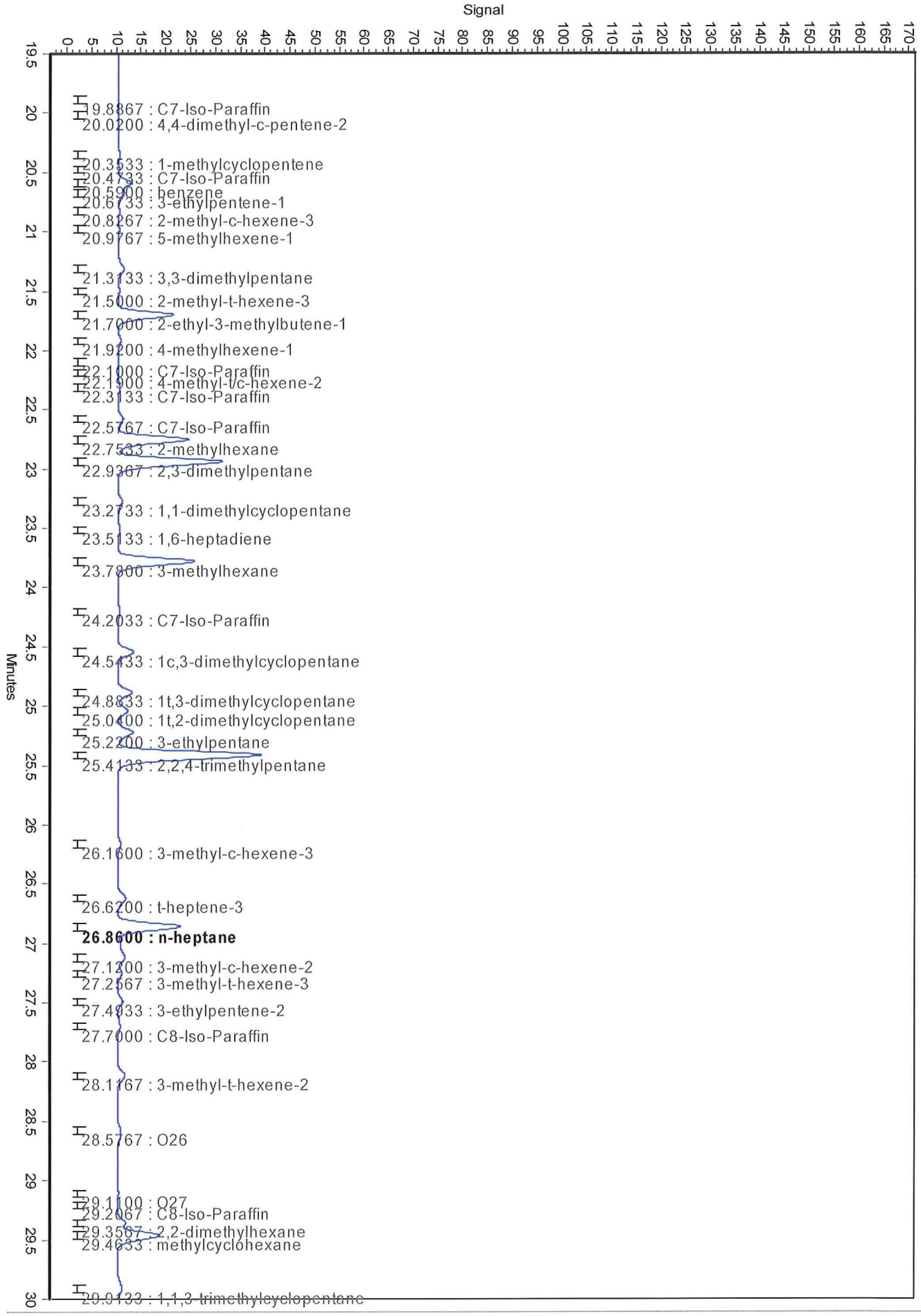
Minutes	Index	Group	Component	Mass %	Volume %	Mol %
105.917	1300.000	P13	n-tridecane	0.051	0.048	0.027
112.330	1393.160	I14	C14-Iso-Paraffin	0.022	0.021	0.012
112.460	1394.990	I14	C14-Iso-Paraffin	0.026	0.025	0.014
112.817	1400.000	P14	C14	0.032	0.031	0.016
113.323	1408.280	I15	C15-Iso-Paraffin	0.047	0.045	0.023
113.563	1412.190	I15	C15-Iso-Paraffin	0.025	0.024	0.012
118.590	1492.090	I15	C15-Iso-Paraffin	0.124	0.118	0.062
119.000	1498.450	P15	C15	0.024	0.017	0.011
127.180	1661.410	I17	C17-Iso-Paraffin	0.094	0.066	0.045
128.467	1689.050	I17	C17-Iso-Paraffin	0.015	0.010	0.007
133.010	1797.850	P18	C18	0.015	0.014	0.006
133.977	1823.640	I19	C19-Iso-Paraffin	0.063	0.058	0.024
136.850	1899.990	P19	C19	0.000	0.000	0.000
137.677	1924.060	I20	C20-Iso-Paraffin	0.017	0.016	0.006
140.320	1999.990	P20	C20	0.000	0.000	0.000
153.363	2397.080	P24	C24	0.020	0.018	0.006
186.373	2910.130	+	C30+	0.021	0.019	0.005

2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 0.000 - End Time: 10.000

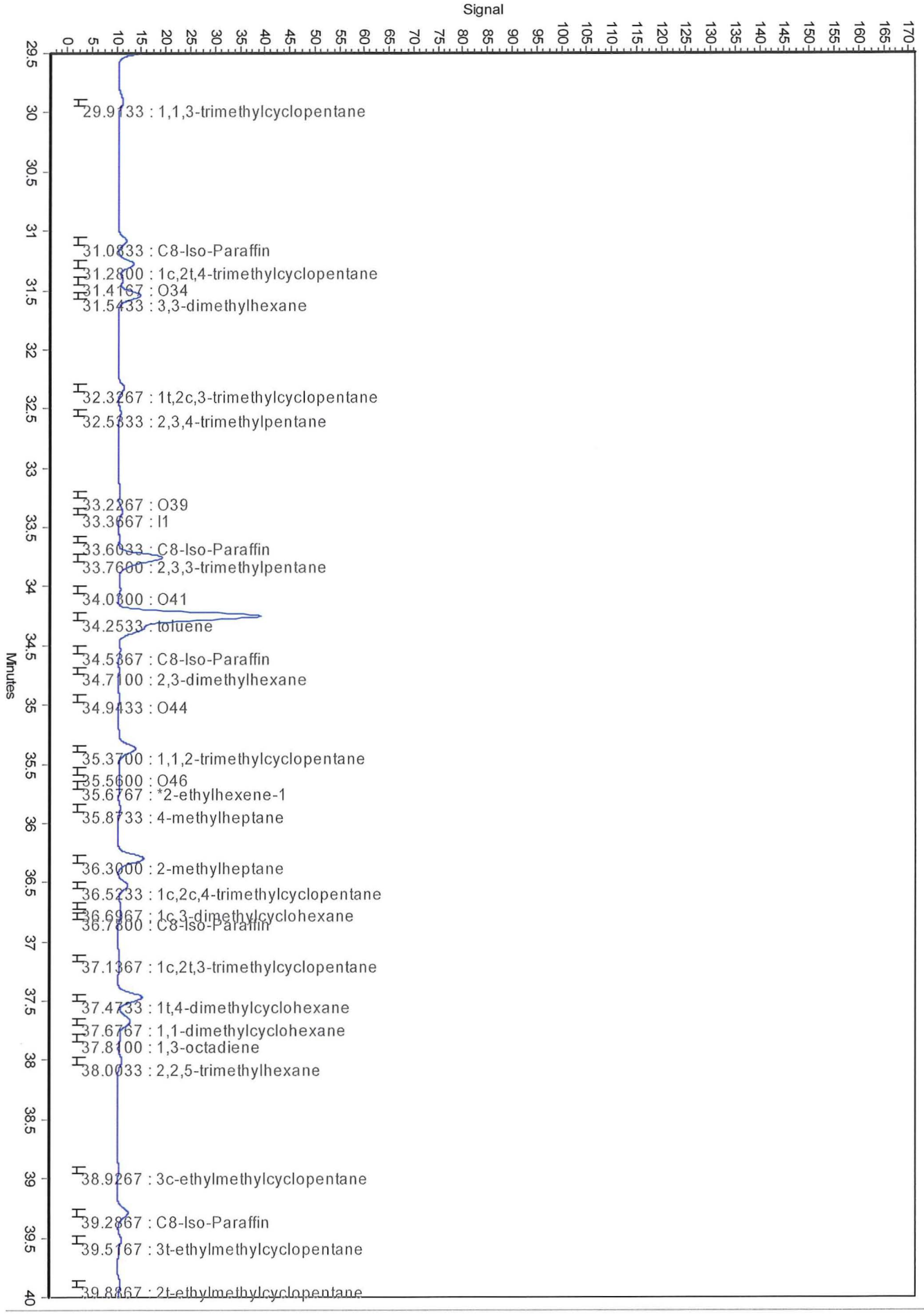



2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 9.500 - End Time: 20.000
Signal
Minutes
9.7933 : i-pentane
10.1833 : butyne-2
10.3867 : 2-methylbutene-1
10.5367 : n-pentane
10.7800 : t-pentene-2
11.0667 : 3,3-dimethylbutene-1
11.2533 : c-pentene-2
11.3467 : 2-methylbutene-2
11.9467 : 2,2-dimethylbutane
12.8033 : cyclopentene
12.9800 : 4-methylpentene-1
13.0733 : 3-methylpentene-1
13.4300 : cyclopentane
13.5167 : 2,3-dimethylbutane
13.6400 : C6-Iso-Paraffin
13.7567 : 2-methylpentane
14.7100 : 3-methylpentane
15.0500 : 2-methylpentene-1
15.1233 : hexene-1
15.9933 : n-hexane
16.1433 : t-hexene-3
16.2467 : c-hexene-3
16.3700 : t-hexene-2
16.5600 : 2-methylpentene-2
16.7600 : 3-methyl-c-pentene-2
16.8467 : 3-methylcyclopentene
17.0267 : O13
17.1667 : c-hexene-2
17.7133 : 3,3-dimethylpentene-1
18.1267 : 2,2-dimethylpentane
18.3333 : methylcyclopentane
18.7033 : 2,4-dimethylpentane
18.8433 : O16
19.2467 : 2,2,3-trimethylbutane
19.8867 : C7-Iso-Paraffin

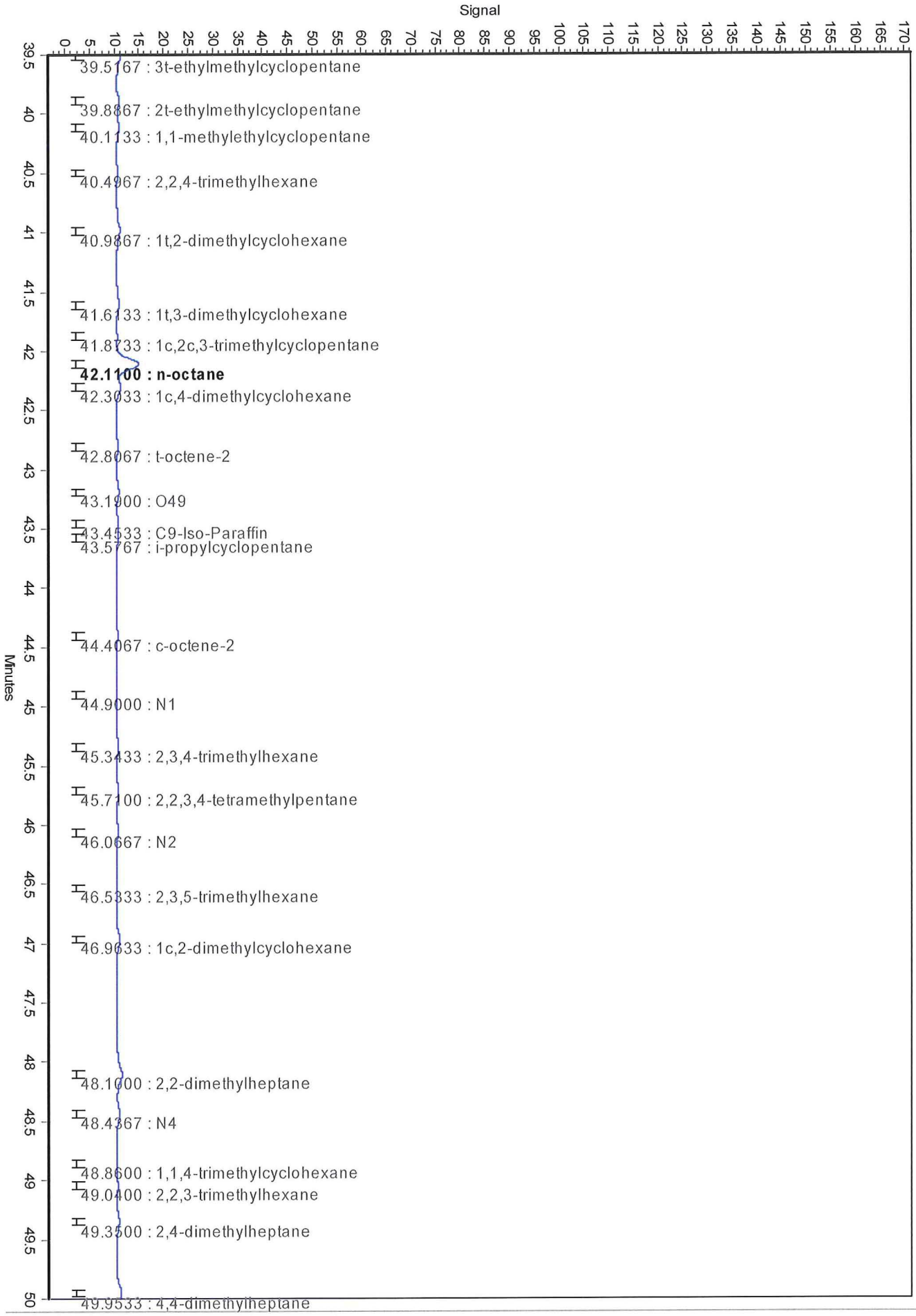
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 19.500 - End Time: 30.000



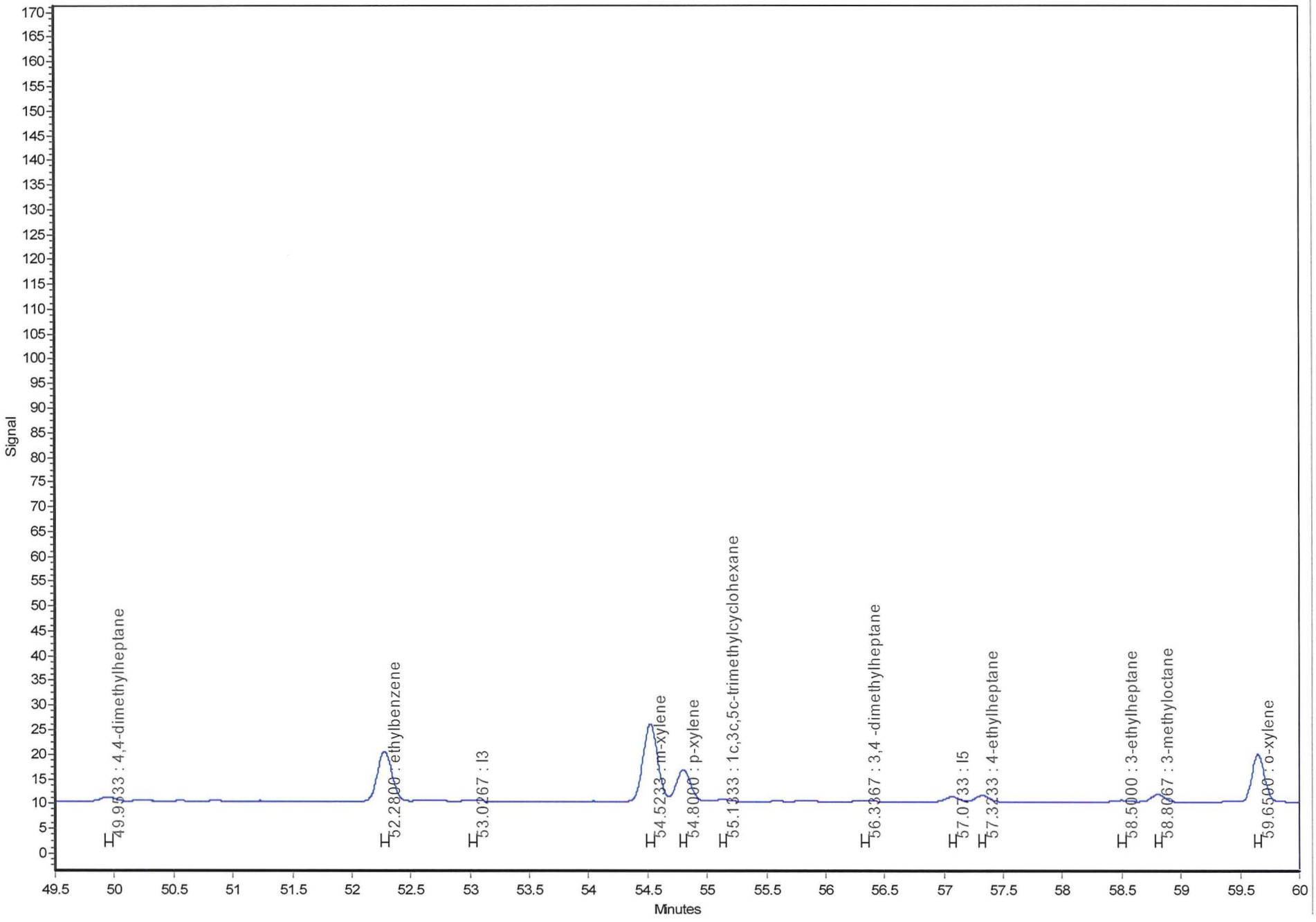
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 29.500 - End Time: 40.000



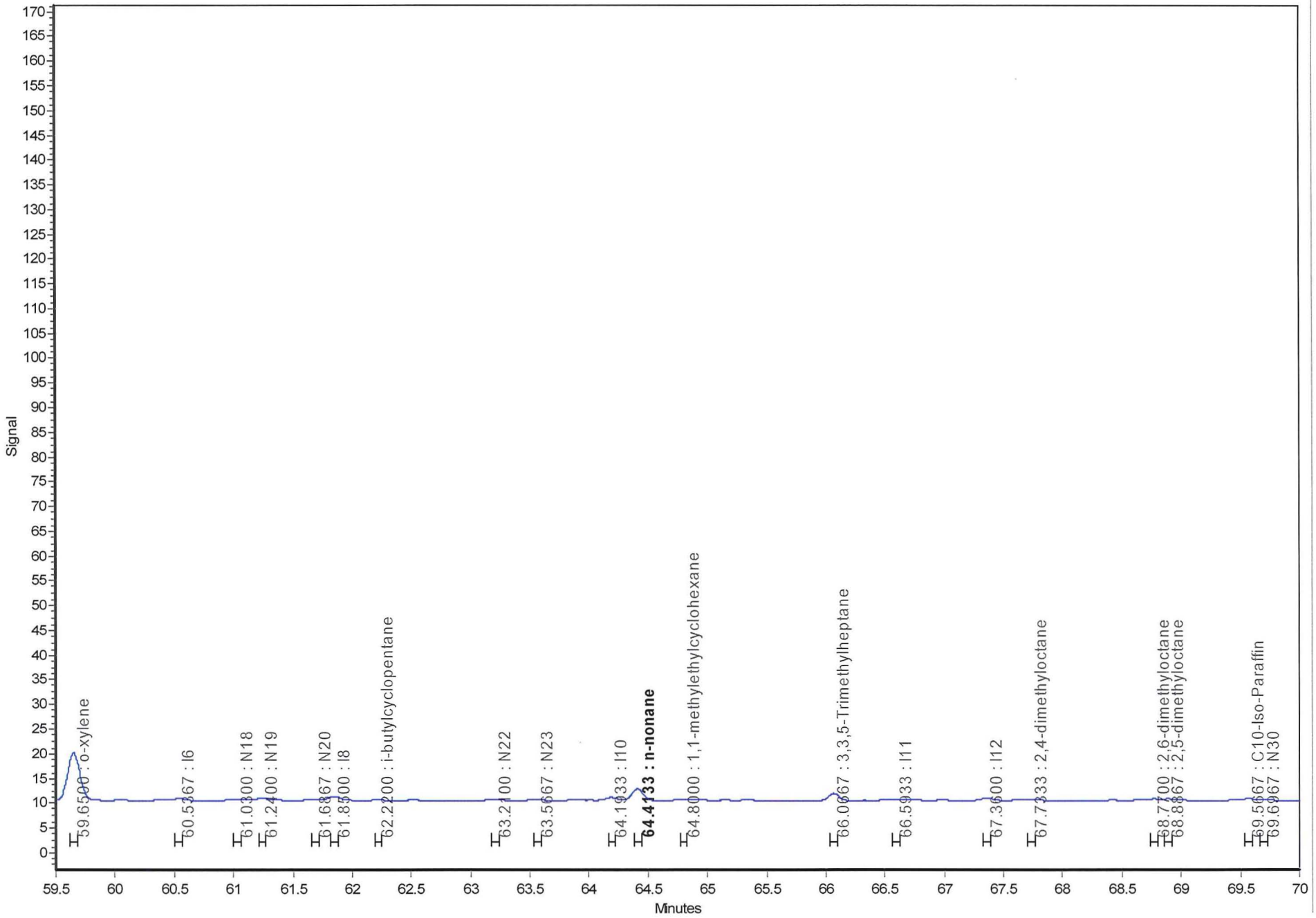
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 39.500 - End Time: 50.000



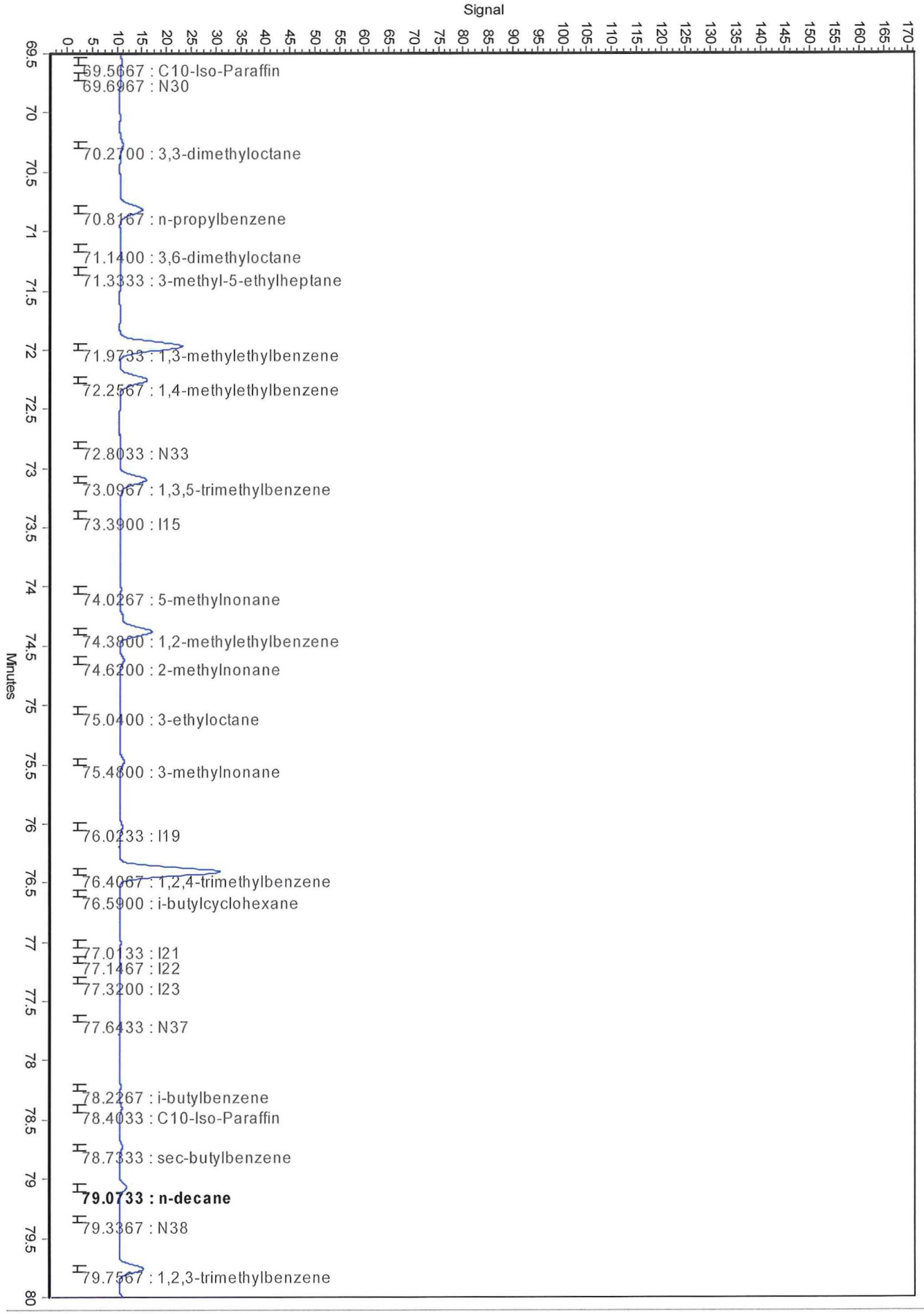
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 49.500 - End Time: 60.000



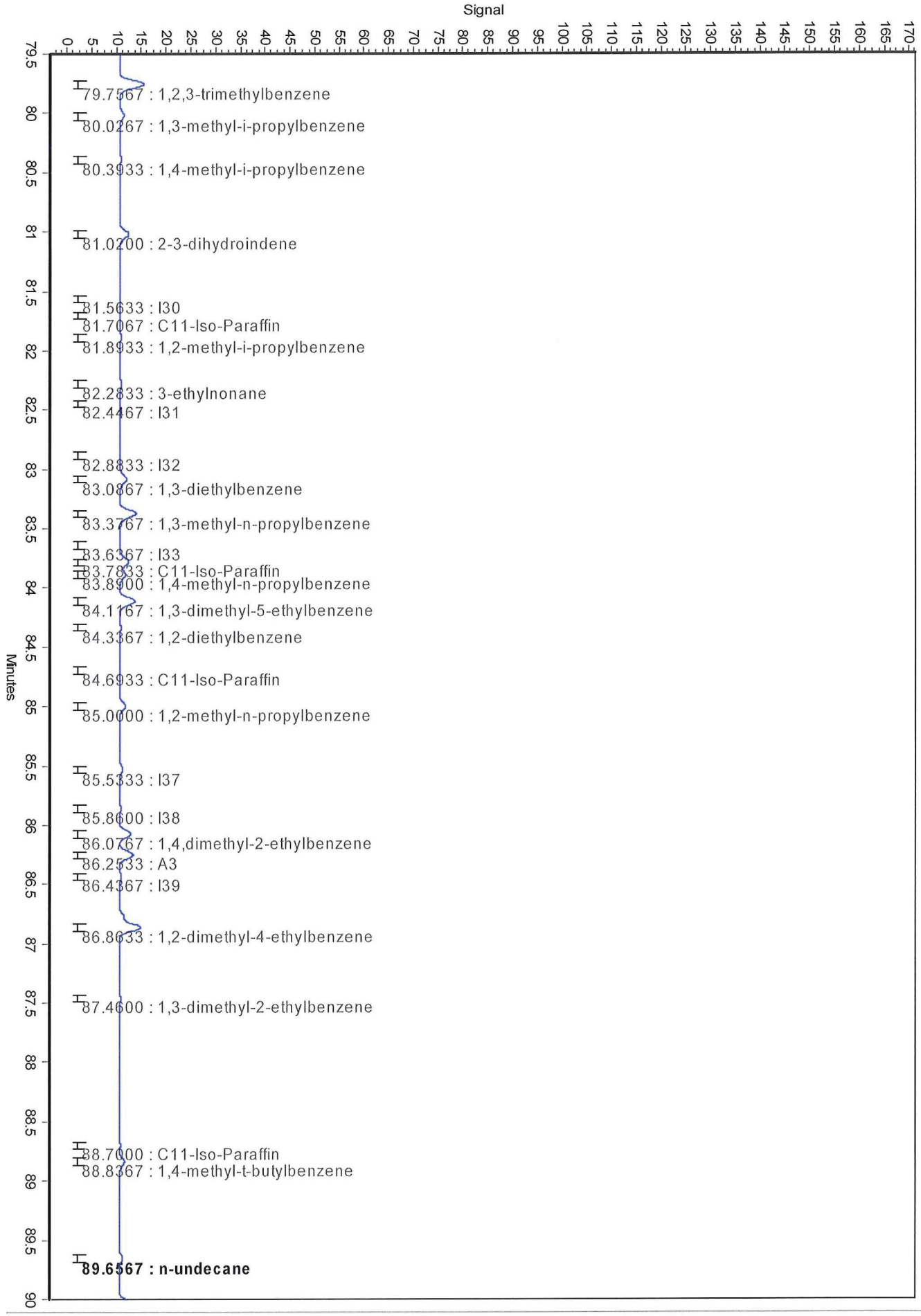
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 59.500 - End Time: 70.000

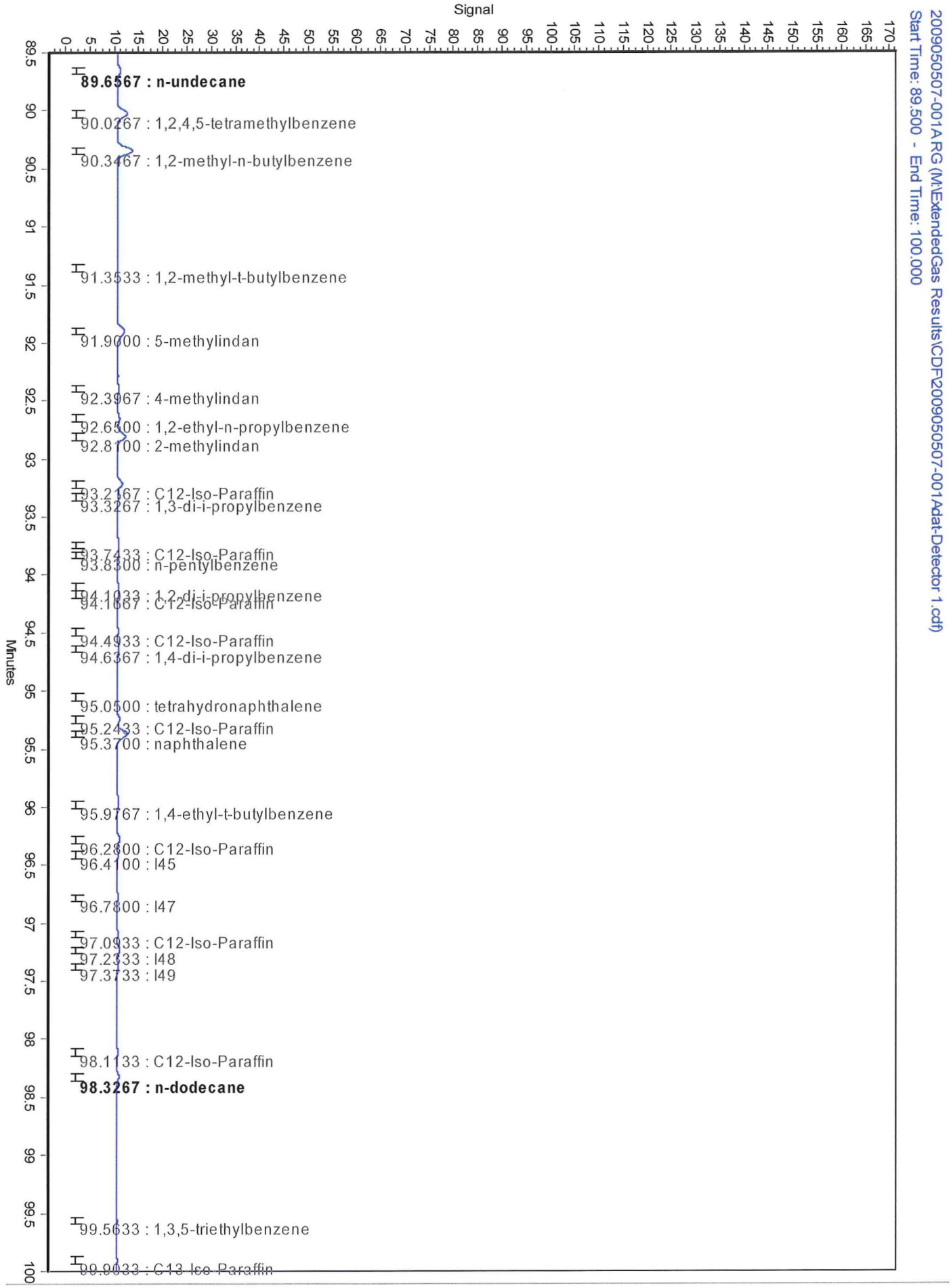


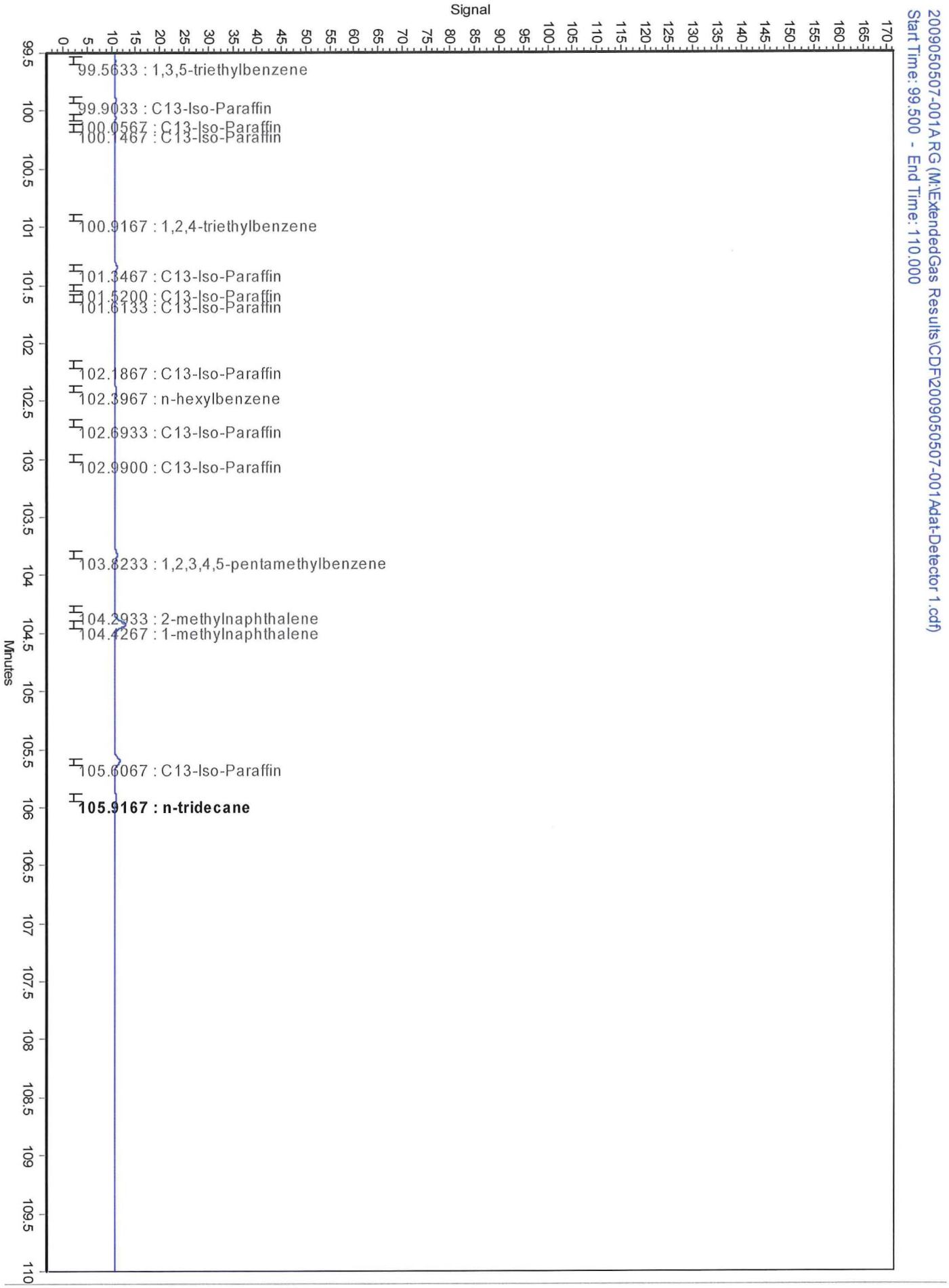
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001A\dat-Detector 1.cdf)
Start Time: 69.500 - End Time: 80.000



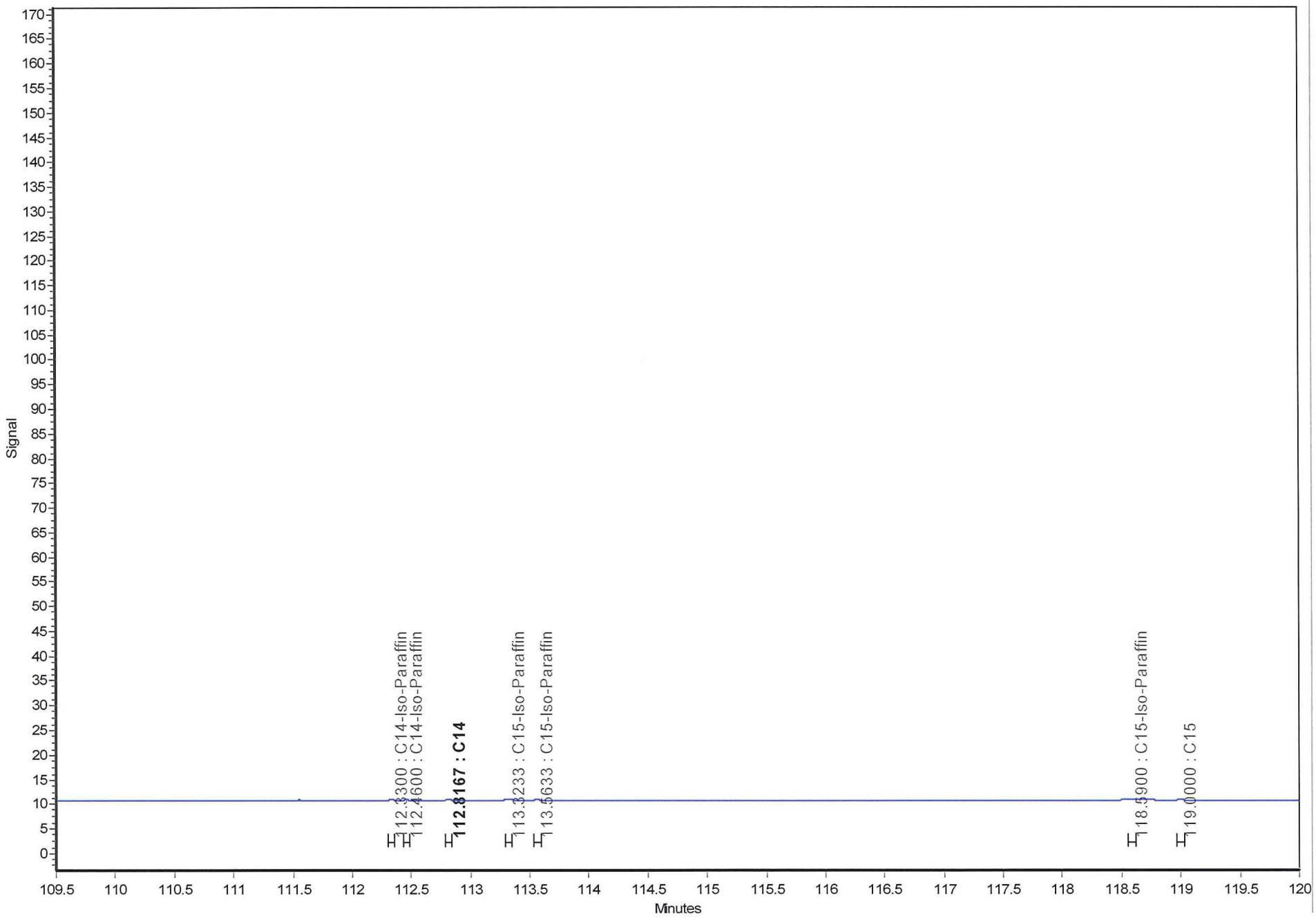
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 79.500 - End Time: 90.000



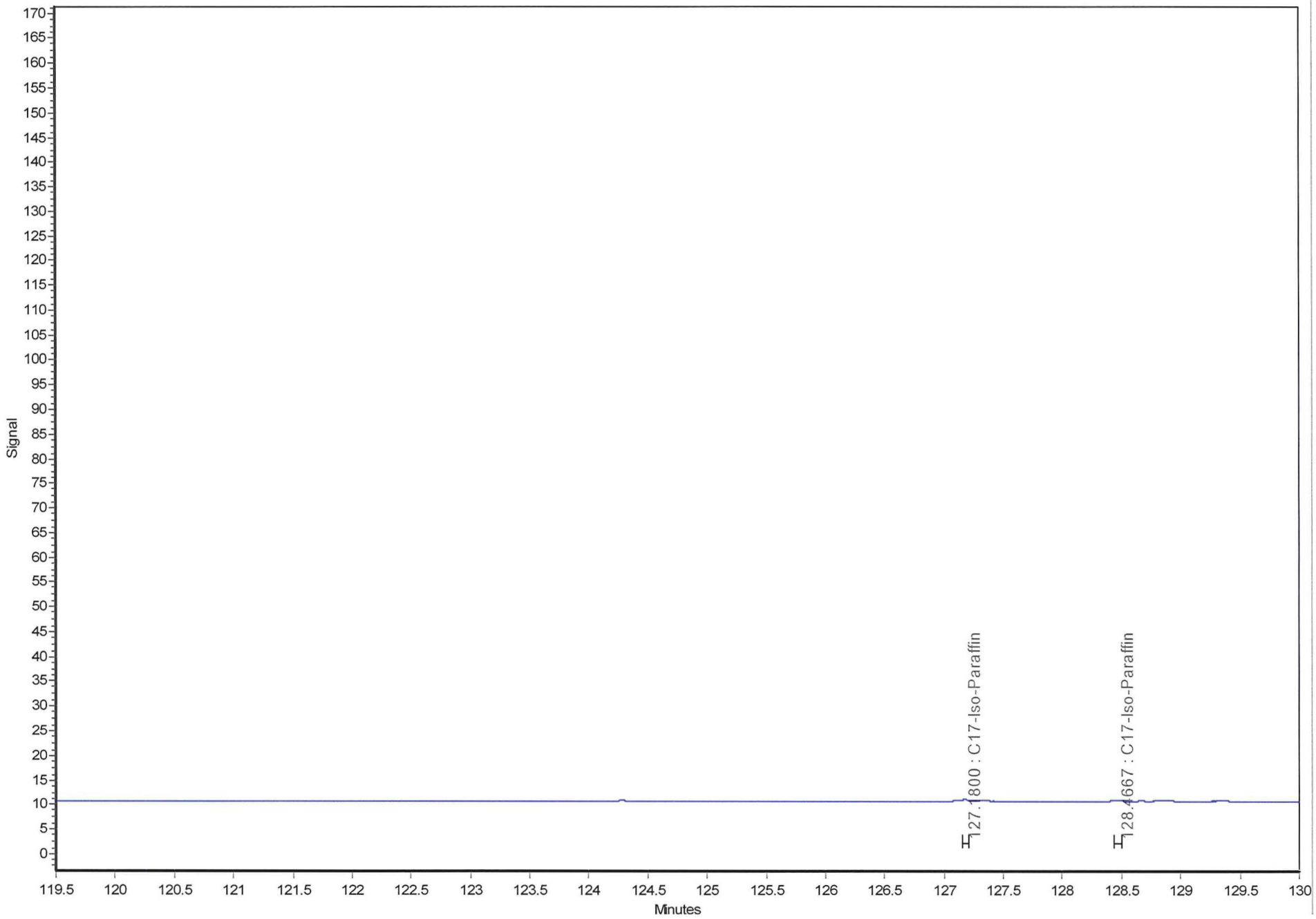

2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 89.500 - End Time: 100.000
Signal
Minutes
89.6567 : n-undecane
90.0267 : 1,2,4,5-tetramethylbenzene
90.3467 : 1,2-methyl-n-butylbenzene
91.3533 : 1,2-methyl-t-butylbenzene
91.9000 : 5-methylindan
92.3967 : 4-methylindan
92.6500 : 1,2-ethyl-n-propylbenzene
92.8700 : 2-methylindan
93.2167 : C12-Iso-Paraffin
93.3267 : 1,3-di-i-propylbenzene
93.7433 : C12-Iso-Paraffin
93.8300 : n-pentylbenzene
94.1033 : 1,2-di-i-propylbenzene
94.1667 : C12-Iso-Paraffin
94.4933 : C12-Iso-Paraffin
94.6367 : 1,4-di-i-propylbenzene
95.0500 : tetrahydronaphthalene
95.2433 : C12-Iso-Paraffin
95.3700 : naphthalene
95.9767 : 1,4-ethyl-t-butylbenzene
96.2800 : C12-Iso-Paraffin
96.4100 : I45
96.7800 : I47
97.0933 : C12-Iso-Paraffin
97.2333 : I48
97.3733 : I49
98.1133 : C12-Iso-Paraffin
98.3267 : n-dodecane
99.5633 : 1,3,5-triethylbenzene
99.9033 : C13-Iso-Paraffin


2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 99.500 - End Time: 110.000
Signal
Minutes
99.5633 : 1,3,5-triethylbenzene
99.9033 : C13-Iso-Paraffin
100.0567 : C13-Iso-Paraffin
100.1467 : C13-Iso-Paraffin
100.9167 : 1,2,4-triethylbenzene
101.3467 : C13-Iso-Paraffin
101.5200 : C13-Iso-Paraffin
101.6133 : C13-Iso-Paraffin
102.1867 : C13-Iso-Paraffin
102.3967 : n-hexylbenzene
102.6933 : C13-Iso-Paraffin
102.9900 : C13-Iso-Paraffin
103.8233 : 1,2,3,4,5-pentamethylbenzene
104.2933 : 2-methylnaphthalene
104.4267 : 1-methylnaphthalene
105.6067 : C13-Iso-Paraffin
105.9167 : n-tridecane

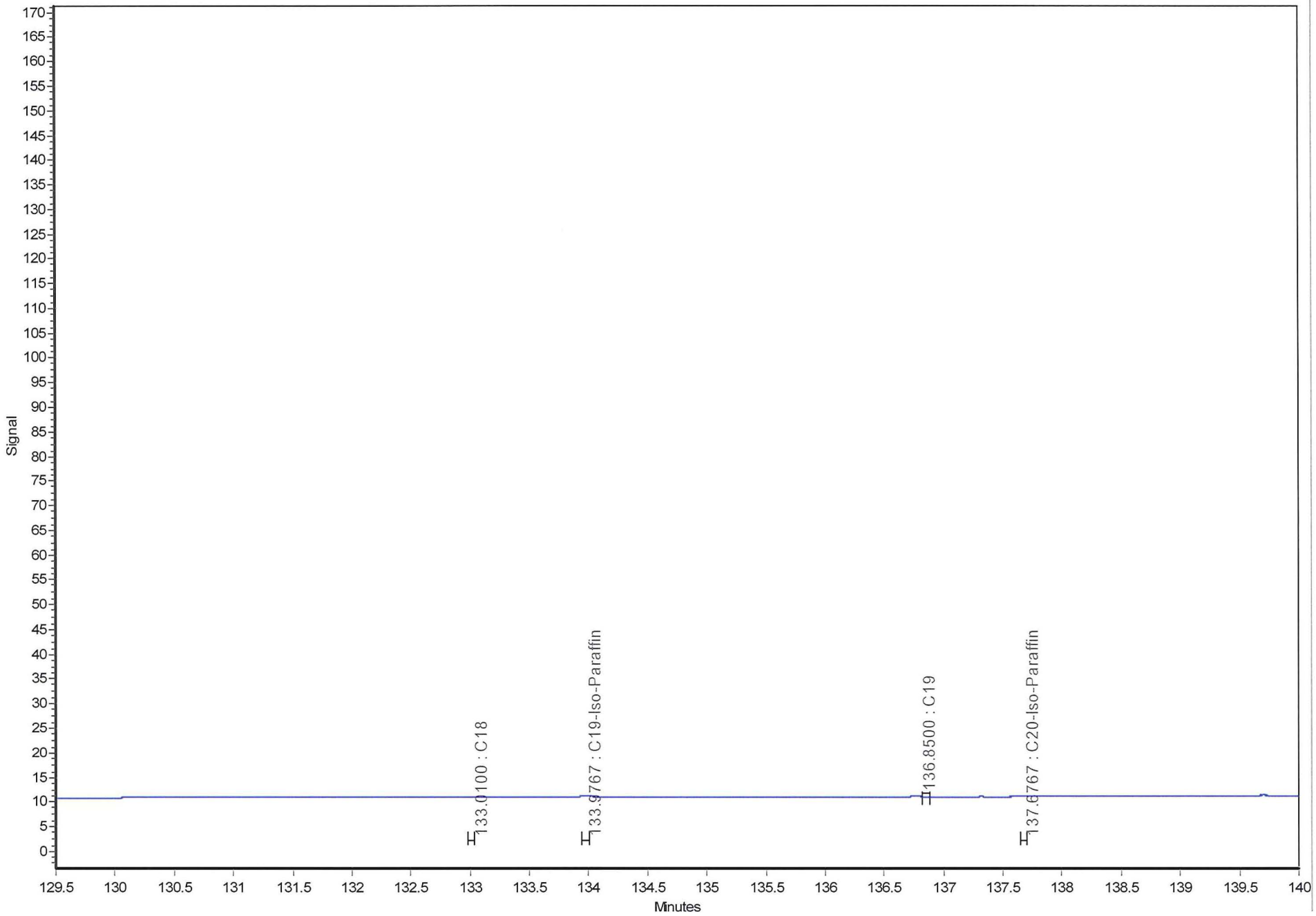
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 109.500 - End Time: 120.000



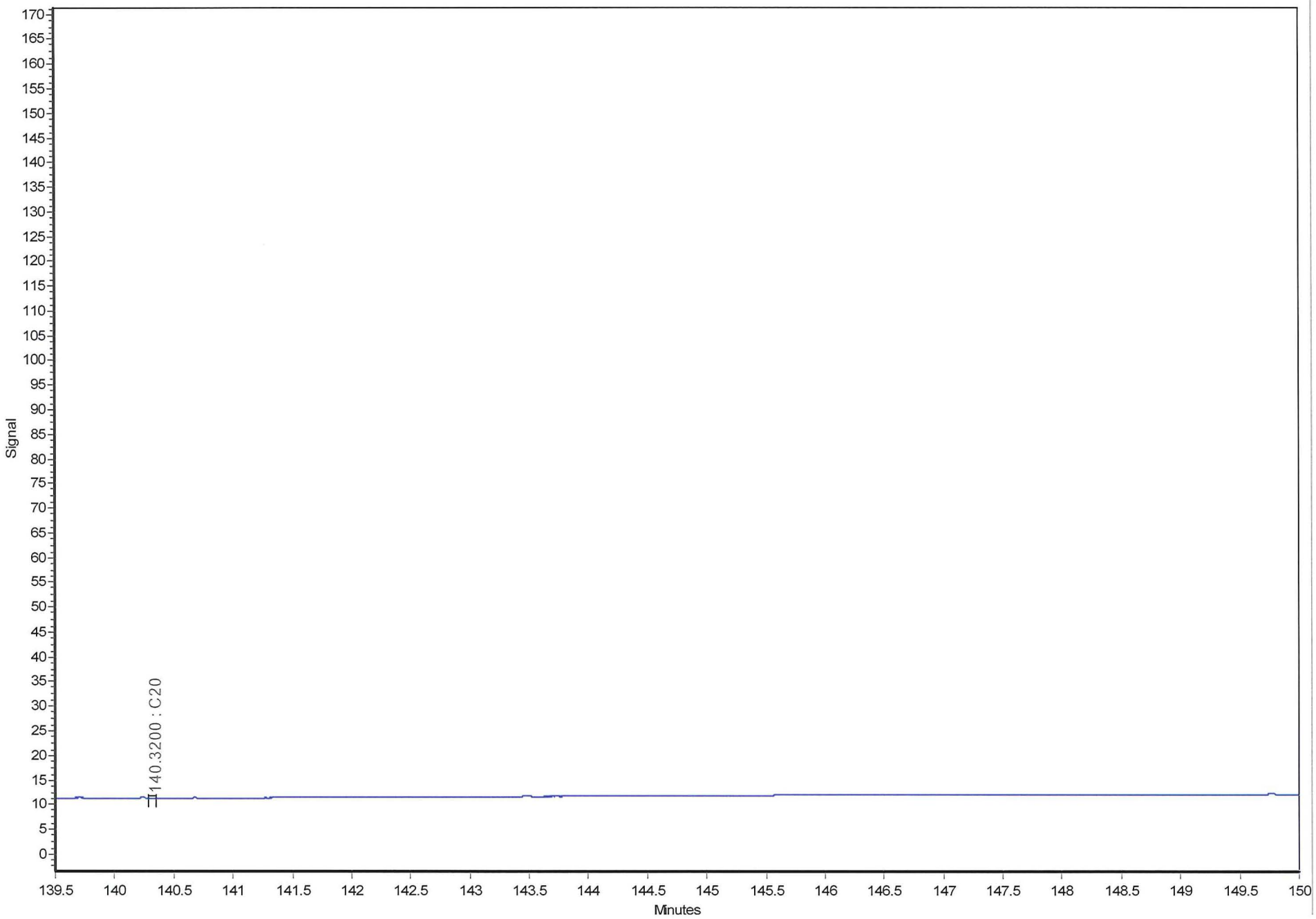
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 119.500 - End Time: 130.000



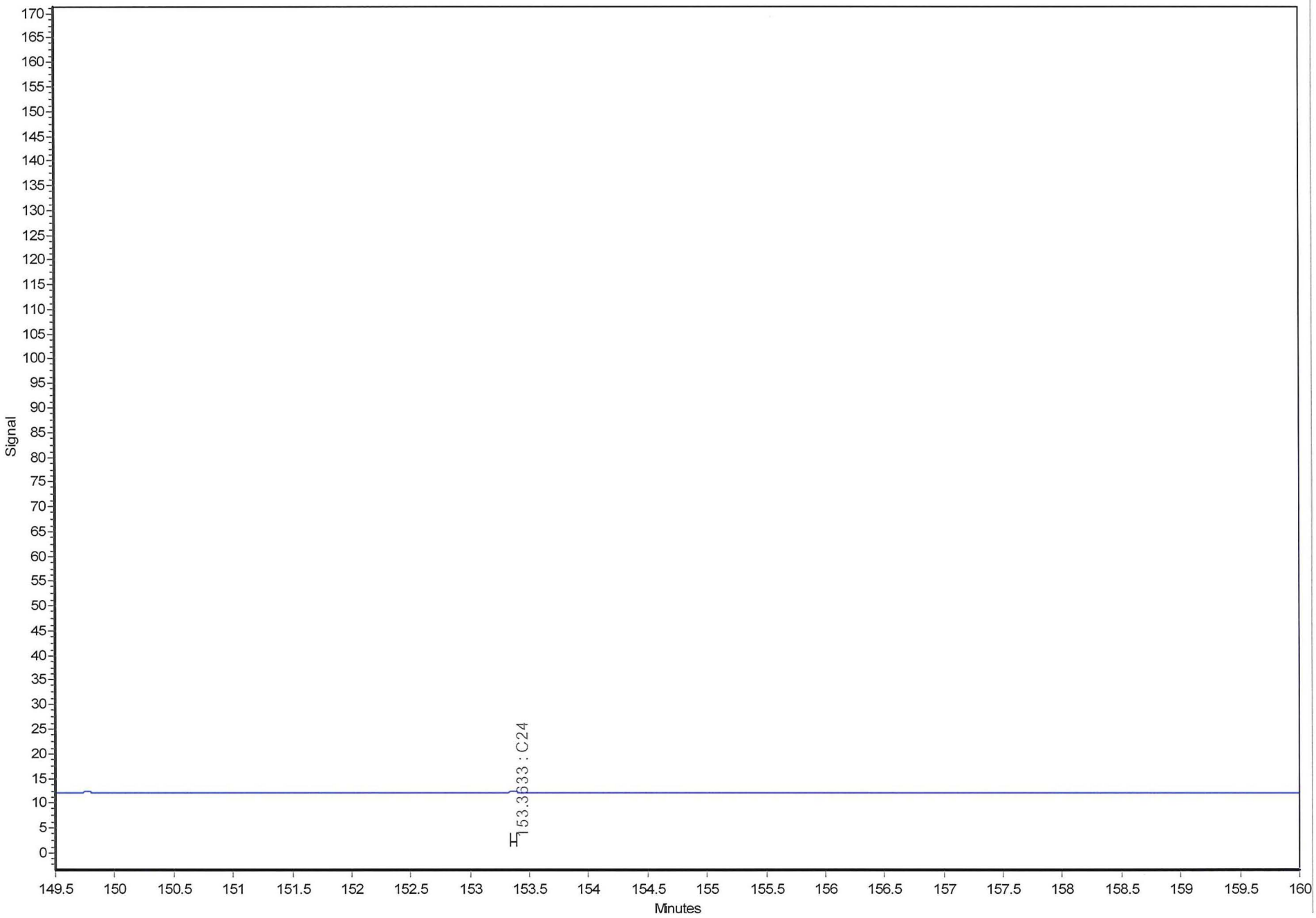
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 129.500 - End Time: 140.000



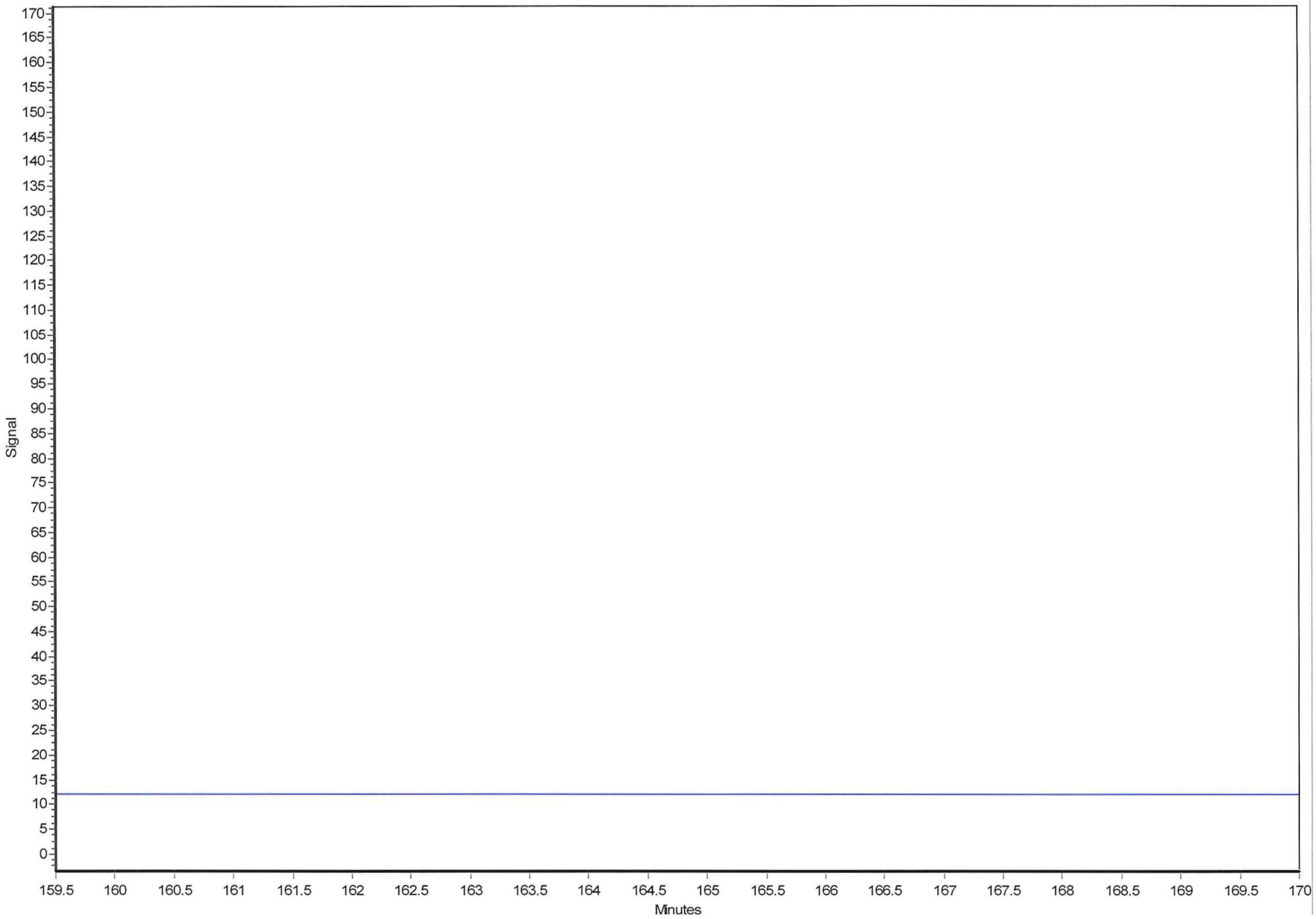
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 139.500 - End Time: 150.000



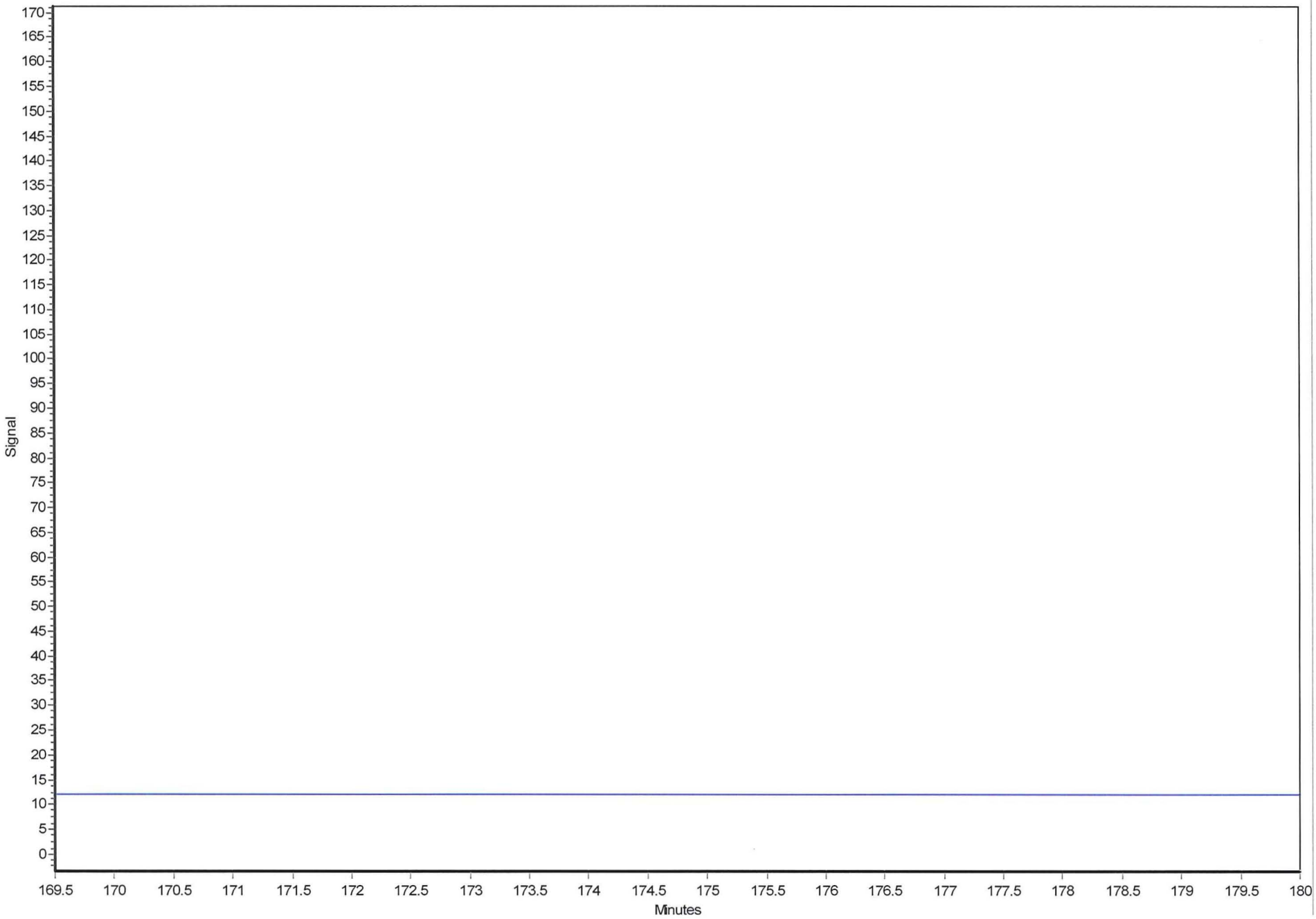
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 149.500 - End Time: 160.000



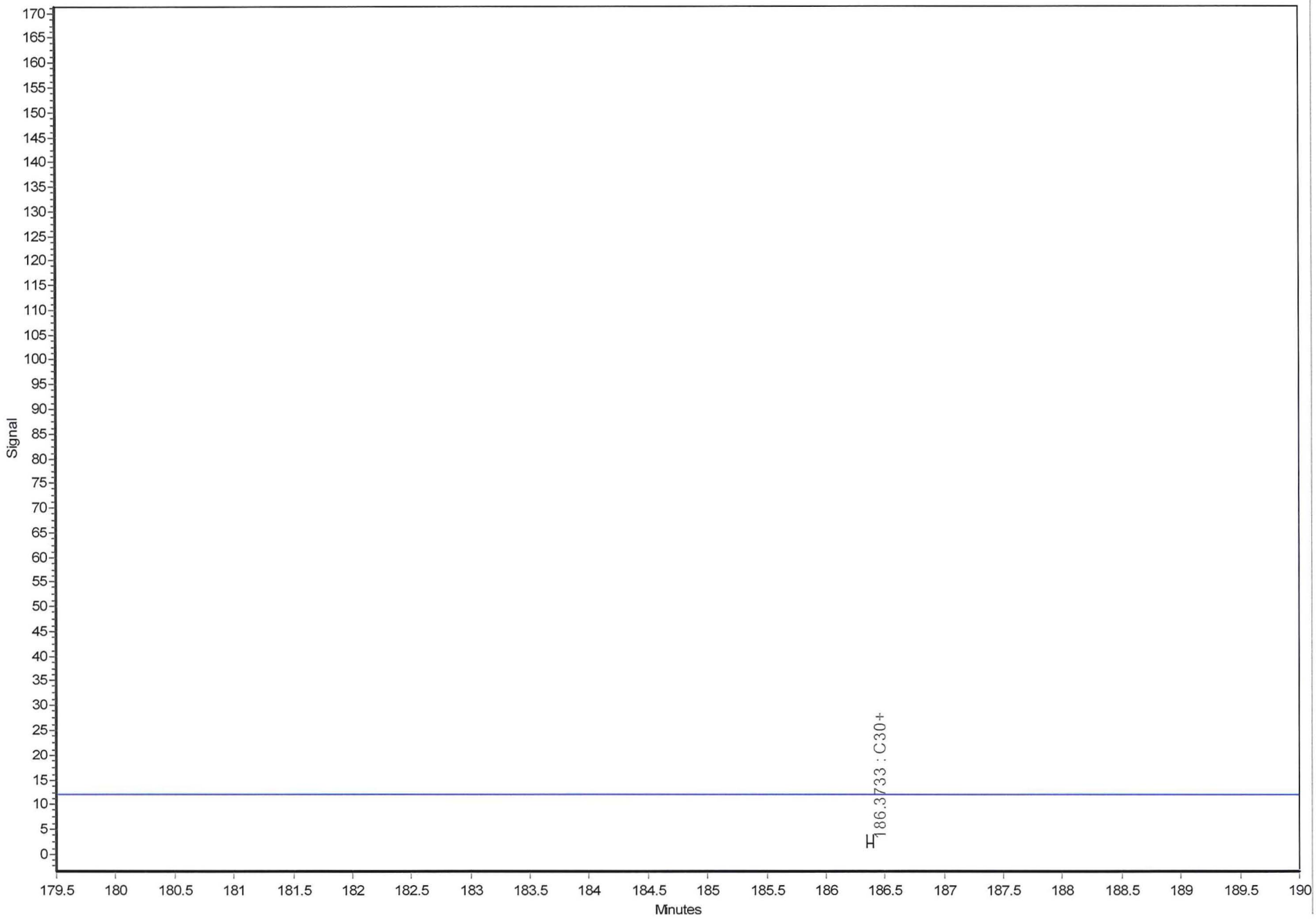
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 159.500 - End Time: 170.000



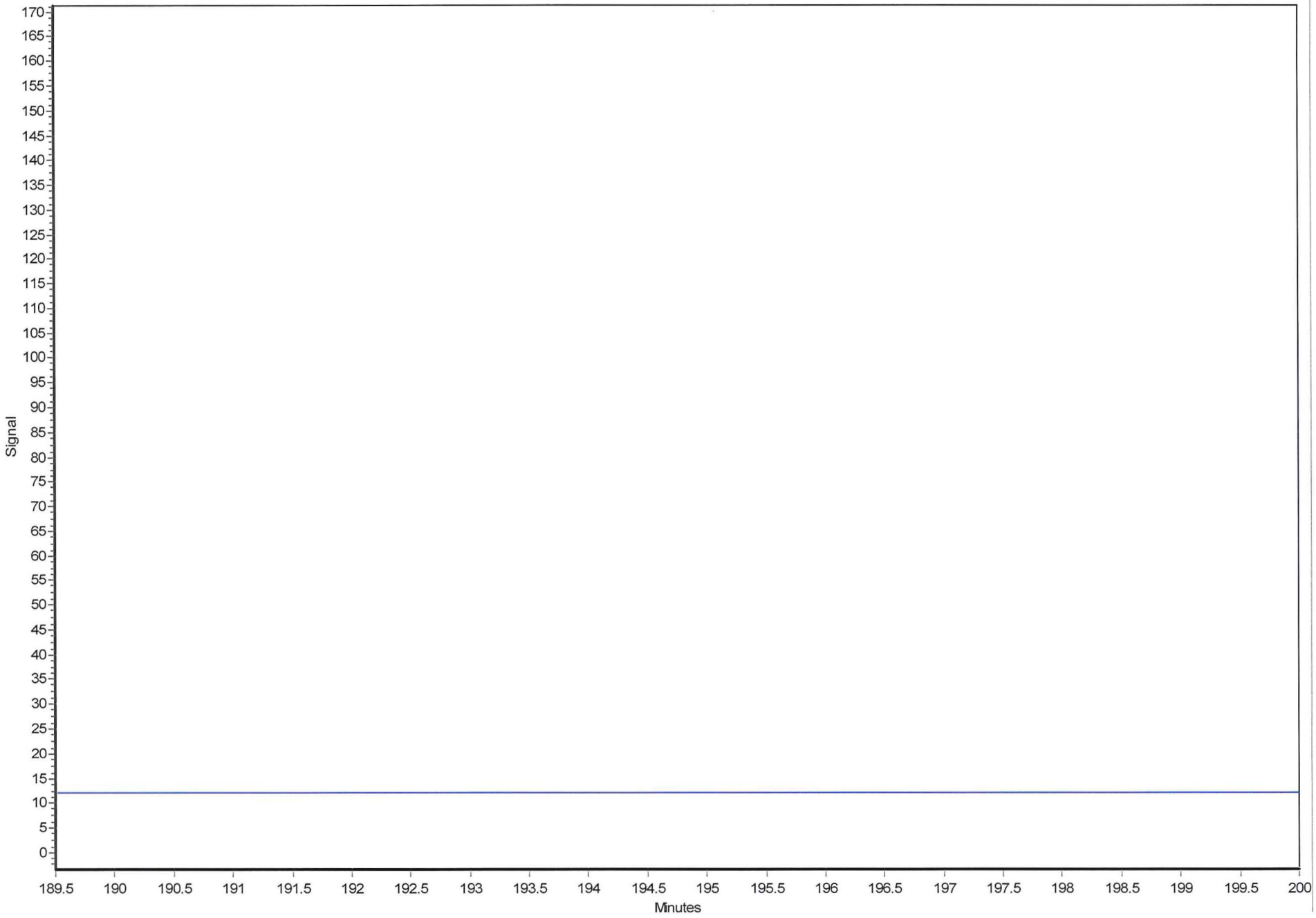
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 169.500 - End Time: 180.000



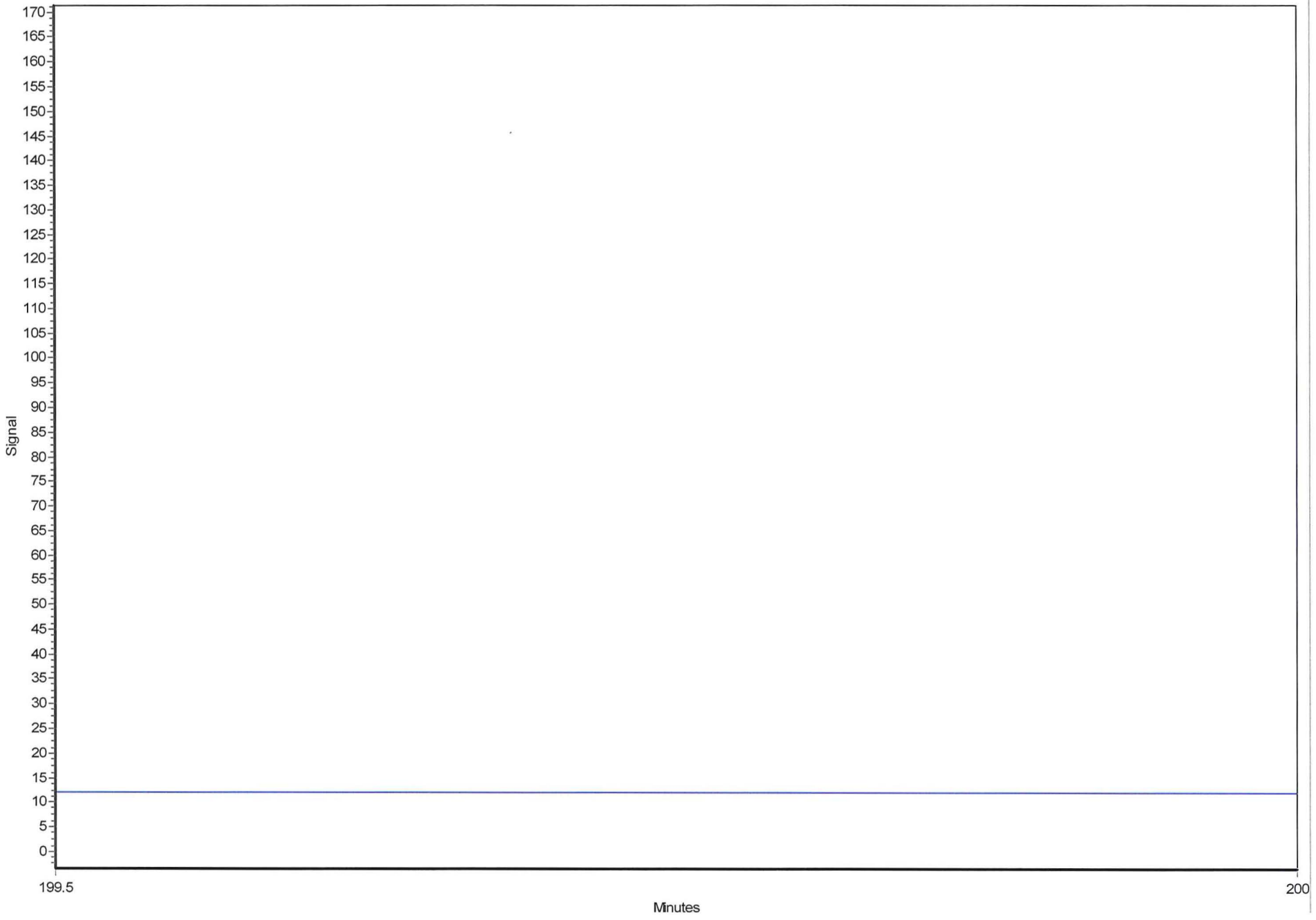
2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 179.500 - End Time: 190.000

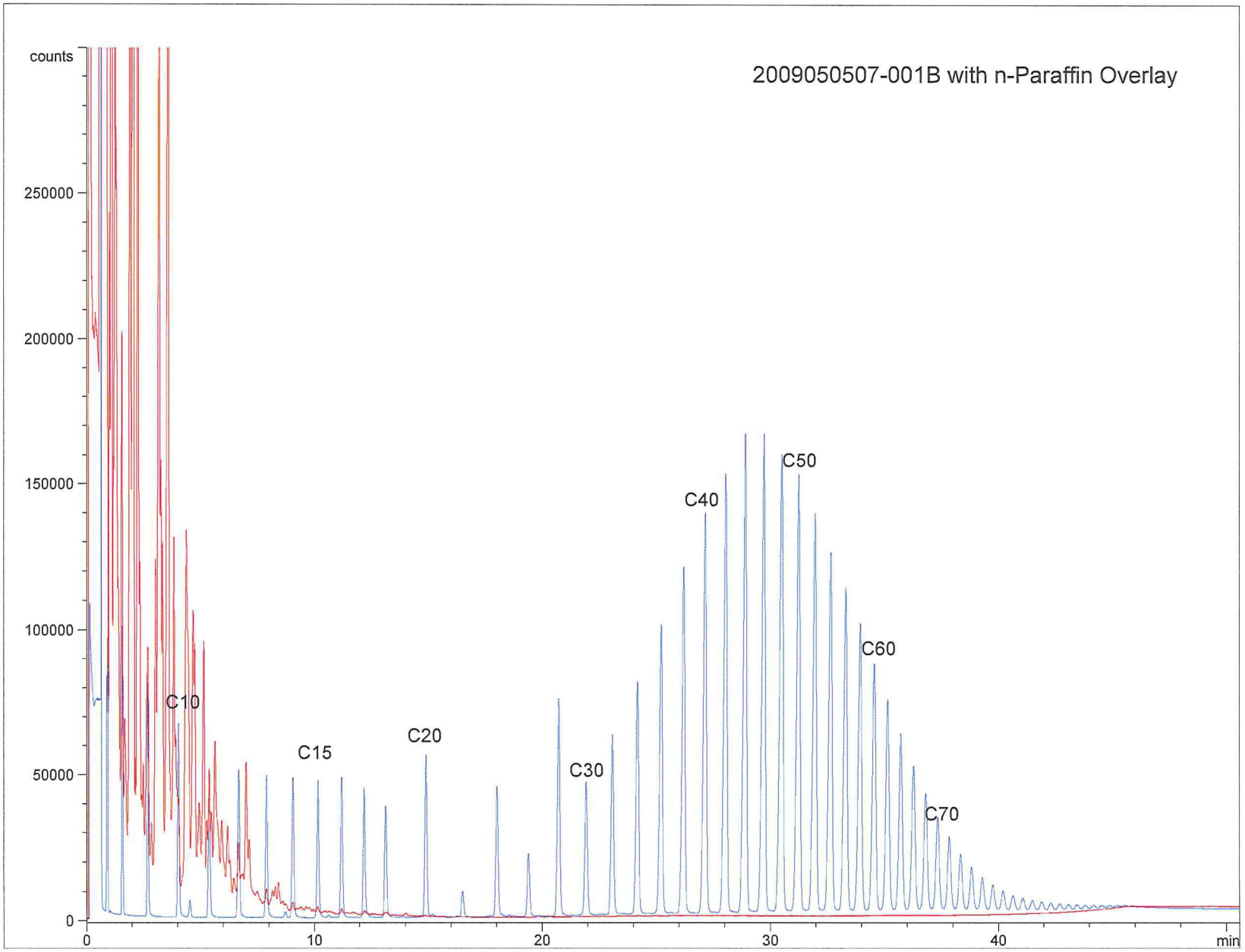


2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 189.500 - End Time: 200.000



2009050507-001A RG (M:\ExtendedGas Results\CDF\2009050507-001Adat-Detector 1.cdf)
Start Time: 199.500 - End Time: 200.000

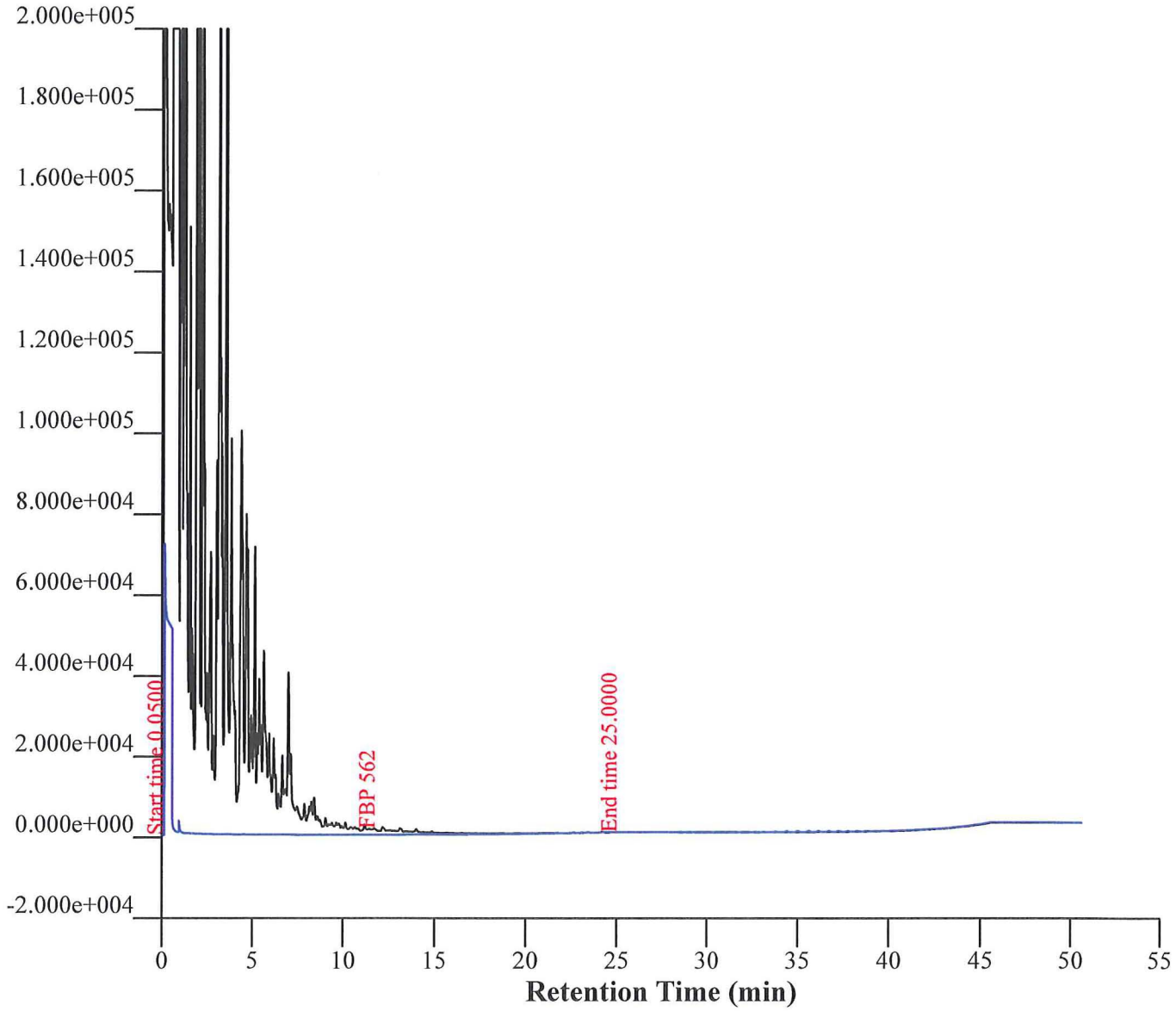



2009050507-001B with n-Paraffin Overlay
counts
250000
200000
150000
100000
50000
0
0
10
20
30
40
min
C10
C15
C20
C30
C40
C50
C60
C70

HTSD1 ASTM High temperature 1

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Sample type	: Carbon Number	Sample (g)	: 0.0739
Method name	: ht750c	Solvent (g)	: 4.8903
Operator	: BLH	ISTD (g)	: 0.0000
Sequence name	: 0601A.S		

Data File : 0601A\006F1001.D



HTSD1 ASTM High temperature 2

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Data File	: 0601A\006F1001.D		

General Variables

Used Blank	0601A\005F0901.D
Used BP calibrant	0601A\090F0101.D
Used Reference	0601A\095F0401.D
Solvent start	0.113
Solvent end	0.560
Quenching factor	2.4
Used Start elution (min)	0.050
Used End elution (min)	25.000 set
Total area	254075103
Found Recovery	101.6
Used Recovery	100.0
Response factor	5.9541e-011

BP Distribution table - Percent

Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F	Recovered mass%	BP °F
7.2	96.8	31.0	154.0	55.0	224.8	79.0	318.6
8.0	98.0	32.0	157.2	56.0	230.2	80.0	319.6
9.0	99.2	33.0	162.4	57.0	234.0	81.0	321.4
10.0	100.4	34.0	165.0	58.0	237.2	82.0	324.6
11.0	101.8	35.0	167.0	59.0	240.6	83.0	329.2
12.0	103.8	36.0	169.6	60.0	248.0	84.0	330.4
13.0	106.8	37.0	172.4	61.0	257.2	85.0	331.4
14.0	110.2	38.0	174.4	62.0	263.8	86.0	333.2
15.0	114.4	39.0	177.0	63.0	271.2	87.0	339.0
16.0	118.2	40.0	179.0	64.0	272.4	88.0	345.0
17.0	122.4	41.0	180.2	65.0	273.6	89.0	354.6
18.0	126.6	42.0	183.0	66.0	276.0	90.0	357.4
19.0	130.4	43.0	186.8	67.0	277.2	91.0	363.4
20.0	134.6	44.0	191.6	68.0	278.0	92.0	367.4
21.0	138.8	45.0	195.4	69.0	278.4	93.0	377.2
22.0	143.0	46.0	200.2	70.0	279.2	94.0	385.0
23.0	145.0	47.0	205.4	71.0	283.2	95.0	393.4
24.0	145.0	48.0	212.4	72.0	285.8	96.0	406.4
25.0	145.4	49.0	217.4	73.0	287.0	97.0	426.0
26.0	146.4	50.0	220.0	74.0	289.8	98.0	442.6
27.0	147.2	51.0	221.0	75.0	299.8	99.0	497.4
28.0	148.8	52.0	222.0	76.0	305.8	FBP	562.2
29.0	149.4	53.0	222.6	77.0	314.4		
30.0	151.4	54.0	223.6	78.0	317.4		

HTSD1 ASTM High temperature 3

Sample name	: 2009050507-001B		
Acquired on	: 01-Jun-09, 23:58:46	Vial	: 6
Processed on	: 6/2/2009 10:07:03 AM	Injection	: 1
Data File	: 0601A\006F1001.D		

BP Distribution table - cut points

BP °F	Recovered mass%	Fraction mass%	BP °F	Recovered mass%	Fraction mass%	BP °F	Recovered mass%	Fraction mass%
97.0	7.24	7.24	549.0	99.42	0.19	791.0	99.98	0.01
156.0	31.87	24.62	576.0	99.57	0.15	808.0	99.99	0.01
209.0	47.60	15.73	601.0	99.69	0.12	824.0	99.99	0.00
259.0	61.37	13.77	625.0	99.77	0.08	840.0	100.00	0.00
303.0	75.51	14.14	651.0	99.85	0.07	856.0	100.00	0.00
345.0	88.01	12.50	675.0	99.89	0.05	871.0	100.00	0.00
385.0	94.00	5.99	696.0	99.92	0.03	885.0	100.00	0.00
421.0	96.76	2.76	716.0	99.94	0.02	898.0	100.00	0.00
455.0	98.28	1.52	736.0	99.95	0.01	912.0	100.00	0.00
489.0	98.91	0.63	755.0	99.96	0.01			
520.0	99.23	0.32	774.0	99.97	0.01			

zia engineering & environmental consultants, llc
755 S. Telshor Blvd. Ste. F-201
Las Cruces, NM 88011
575-532-1526 u
575-532-1587 f

CHAIN OF CUSTODY RECORD

PROJECT NO.: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVW Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	ANALYSIS REQUESTED: LNAPL										REMARKS
5-11-09	1248	HTSA-0197-HVW-008-0509	Product		1	X										5 DAY TURN-AROUND

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME)	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/CHILLED		(TIME/ DATE)	(TIME/ DATE)	(TIME/ DATE)
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS / COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES; YELLOW - LAB; PINK - FIELD COPY

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110511-001A

December 07, 2009

Bradley Davis
Zia Engineering & Environmental Consultants LLC
Bldg 126 3rd Floor
PO Box 363
WSMR NM 88002

Sample ID:	HTSA-0197-HVW-005-1109 Fuel	Sampled By:		
Project Name :	HELSTF TSA	Sample Of:	Liquid	
Project Number :	#14	Sample Date:	11/16/2009	11:09
Project Location:	WSMR	Sample Condition:		
Sample Point:		PO / Ref. No:		

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Interfacial tension @ 70°F	ASTM-D-1331-B	29	DYNES/CM		MES	12/04/09
API Gravity @ 70 °F	ASTM-D-4052	58.46	°		DB	12/07/09
Specific Gravity @ 70/70 °F	ASTM-D-4052	0.7449			DB	12/07/09
Density @ 70 °F	ASTM-D-4052	0.7434	g/ml		DB	12/07/09
API Gravity @ 80 °F	ASTM-D-4052 (2)	59.46	°		DB	12/07/09
Specific Gravity @ 80/80 °F	ASTM-D-4052 (2)	0.7410			DB	12/07/09
Density @ 80 °F	ASTM-D-4052 (2)	0.7385	g/ml		DB	12/07/09
Viscosity @ 70 °F	ASTM-D-445	0.6054	cSt		BAC	12/02/09
Viscosity @ 70 °F	ASTM-D-445	27.7	SUS		BAC	12/02/09
Viscosity @ 80°F	ASTM-D-445-OT	0.5832	cSt		BAC	12/04/09
Viscosity @ 80°F	ASTM-D-445-OT	27.6	SUS		BAC	12/07/09

Comments:

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009110511-002A

December 07, 2009

Bradley Davis
Zia Engineering & Environmental Consultants LLC
Bldg 126 3rd Floor
PO Box 363
WSMR NM 88002

Sample ID:	HTSA-0197-HVW-008-1109 Fuel	Sampled By:		
Project Name :	HELSTF TSA	Sample Of:	Liquid	
Project Number :	#14	Sample Date:	11/16/2009	13:39
Project Location:	WSMR	Sample Condition:		
Sample Point:		PO / Ref. No:		

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Interfacial tension @ 70 °F	ASTM-D-1331-B	32	DYNES/CM		MES	12/04/09
API Gravity @ 70 °F	ASTM-D-4052	59.36	°		DB	12/07/09
Specific Gravity @ 70/70 °F	ASTM-D-4052	0.7414			DB	12/07/09
Density @ 70 °F	ASTM-D-4052	0.7399	g/ml		DB	12/07/09
API Gravity @ 80 °F	ASTM-D-4052 (2)	60.36	°		DB	12/07/09
Specific Gravity @ 80/80 °F	ASTM-D-4052 (2)	0.7375			DB	12/07/09
Density @ 80 °F	ASTM-D-4052 (2)	0.7350	g/ml		DB	12/07/09
Viscosity @ 70 °F	ASTM-D-445	0.5916	cSt		BAC	12/07/09
Viscosity @ 70 °F	ASTM-D-445	27.6	SUS		BAC	12/07/09
Viscosity @ 80°F	ASTM-D-445-OT	0.5658	cSt		BAC	12/07/09
Viscosity @ 80°F	ASTM-D-445-OT	27.5	SUS		BAC	12/07/09

Comments:

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

zia engineering & environmental consultants, llc
755 S. Telshor Blvd. Ste. F-201
Las Cruces, NM 88011
575-532-1526 p
575-532-1587 f

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO.: # 14

PROJECT NAME: HELSTF TSA

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	Kinematic Viscosity	API Gravity & Density Sp.Gr.	Total Sulfur & Emission							REMARKS
11-16-09	1109	HTSA-0197-HVW-005-1109	fuel		1	X	X	X							See SPL Quote
11-16-09	1339	HTSA-0197-HVW-005-1109	fuel		1	X	X	X							See SPL Quote
11-16-09	1109	HTSA-0197-HVW-005-1109	water		1	X	X	X							See SPL Quote
															Not enough water from HVW-8 for Sample

PROJECT INFORMATION	SAMPLES RECEIVED	1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS	(PRINTED NAME) ABATH GALITA	(PRINTED NAME)	(PRINTED NAME)
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS	RECEIVED BY: (SIGNATURE) Martin Cisneros	RECEIVED BY: (SIGNATURE)	(COMPANY)
	GOOD CONDITION/HANDLED	(TIME) DATE 11/25/09 15:30	(TIME) DATE	(TIME) DATE
VIA: FedEx Lab Courier	CONFORMS TO RECORD	SPECIAL INSTRUCTIONS/COMMENTS: Conduct interfacial tension water to oil ratio using water sample provided for both product samples. PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		

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White Sands Missile Range-
HELSTF TSA Long Term
Groundwater HVW Wells

Data Review

WHITE SANDS MISSLE RANGE, NEW MEXICO

VOCs, TPH-GRO and Misc

SDG #9051329

Analyses Performed By:
Trace Analysis, Inc.
Lubbock, TX

Report # 11773R
Review Level: Tier II
Project: GP08WSMR.00DM.OC110

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #9051329 for samples collected in association with the White Sands Missile Range-Main Post POL RFI. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	TPH	PCB	MET	MISC
HTSA-0197-HVW-006-0509	9051329-1	Water	05/11/09		X	X			X

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8021B and 8015B. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999/January 2005.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8021B	Water	14 days from collection to analysis	Cool to 4°C±2°C; preserved to a pH of less than 2 s.u.
	Soil	14 days from collection to analysis	Cool to 4°C±2°C.

s.u. Standard units

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

A MS/MSD was not performed on a sample in this work order.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X		X	
Matrix Spike Duplicate(MSD)		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
A. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

GASOLINE RANGE ORGANICS (GRO) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8015	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C
	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to 4°C±2°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit

presented in the following table.

Sample Locations	Compound
HTSA-0197-HVW-006-0509	GRO

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LSCD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LSCD analysis exhibited recoveries and RPDs within the control limits.

6. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GRO

DRO; SW-846 8015	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to Standard Method 2540C. Data were reviewed in accordance with USEPA Contract Laboratory Program National Functional Guidelines of July 2002.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Total Dissolved Solids By SM 2540C	Water	7 days from collection to analysis	Cool to 4°C±2°C

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory qualifier "N" will be removed.

A MS/MSD was not performed on a sample in this work order.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

A laboratory duplicate performed on sample location HTSA-0197-HVW-006-0509. The RPD was acceptable.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Field duplicate analysis was not performed on a sample location within this SDG.

5. Laboratory Control Sample Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

The LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

TDS – SM 2540C	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD RPD		X		X	
Matrix Spike (MS) %R					X
Matrix Spike Duplicate (MSD) %R					X
MS/MSD Precision (RPD)					X
Field/Lab Duplicate (RPD)		X		X	
Reporting Limit Verification		X		X	

%R Percent recovery
RPD Relative percent difference

VALIDATION PERFORMED BY: Rachelle Borne

SIGNATURE: Rachelle Borne

DATE: March 14, 2010

PEER REVIEW: Dennis Capria

DATE: March 15, 2010

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

Analytical Report

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	El Paso				
Analysis:	TDS	Analytical Method:	SM 2540C	Prep Method:	N/A
QC Batch:	59605	Date Analyzed:	2009-05-14	Analyzed By:	MD
Prep Batch:	50874	Sample Preparation:	2009-05-14	Prepared By:	MD

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Total Dissolved Solids		**6060**	**6060**	<5.00	mg/L	1	5.00		5

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	59464	Date Analyzed:	2009-05-14	Analyzed By:	ER
Prep Batch:	50749	Sample Preparation:	2009-05-14	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	J	**0.180** J	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.106	mg/L	1	0.100	106	63.6 - 117

Sample: 195784 - HTSA-0197-HVW-006-0509

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	59509	Date Analyzed:	2009-05-14	Analyzed By:	KB
Prep Batch:	50788	Sample Preparation:	2009-05-14	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromochloromethane	U	<0.370	<1.00	<0.370	μg/L	1	0.370	1	0.37
Dichlorodifluoromethane	U	<0.450	<1.00	<0.450	μg/L	1	0.450	1	0.45
Chloromethane (methyl chloride)	U	<0.590	<1.00	<0.590	μg/L	1	0.590	1	0.59
Vinyl Chloride	U	<0.690	<1.00	<0.690	μg/L	1	0.690	1	0.69
Bromomethane (methyl bromide)	U	<0.750	<5.00	<0.750	μg/L	1	0.750	5	0.75
Chloroethane	U	<0.570	<1.00	<0.570	μg/L	1	0.570	1	0.57
Trichlorofluoromethane	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47

continued ...

RB 2-23-10

sample 195784 continued . . .

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Acetone	U	<1.75	<10.0	2.30	μg/L	1	1.75	10	1.75
Iodomethane (methyl iodide)	U	<0.320	<5.00	<0.320	μg/L	1	0.320	5	0.32
Carbon Disulfide	U	<0.250	<1.00	<0.250	μg/L	1	0.250	1	0.25
Acrylonitrile	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
2-Butanone (MEK)	U	<0.810	<5.00	<0.810	μg/L	1	0.810	5	0.81
4-Methyl-2-pentanone (MIBK)	U	<0.790	<5.00	<0.790	μg/L	1	0.790	5	0.79
2-Hexanone	U	<0.510	<5.00	<0.510	μg/L	1	0.510	5	0.51
trans 1,4-Dichloro-2-butene	U	<0.490	<10.0	<0.490	μg/L	1	0.490	10	0.49
1,1-Dichloroethene	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Methylene chloride	U	<0.450	<5.00	<0.450	μg/L	1	0.450	5	0.45
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
trans-1,2-Dichloroethene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
1,1-Dichloroethane	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
cis-1,2-Dichloroethene	U	<0.200	<1.00	<0.200	μg/L	1	0.200	1	0.2
2,2-Dichloropropane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
1,2-Dichloroethane (EDC)	U	<0.350	<1.00	<0.350	μg/L	1	0.350	1	0.35
Chloroform		**1.59**	**1.59**	<0.270	μg/L	1	0.270	1	0.27
1,1,1-Trichloroethane	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
1,1-Dichloropropene	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Benzene		**11.2**	**11.2**	<0.240	μg/L	1	0.240	1	0.24
Carbon Tetrachloride	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dichloropropane	U	<0.360	<1.00	<0.360	μg/L	1	0.360	1	0.36
Trichloroethene (TCE)	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
Dibromomethane (methylene bromide)	U	<0.470	<1.00	<0.470	μg/L	1	0.470	1	0.47
Bromodichloromethane		**1.52**	**1.52**	<0.280	μg/L	1	0.280	1	0.28
2-Chloroethyl vinyl ether	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
cis-1,3-Dichloropropene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
trans-1,3-Dichloropropene	U	<0.380	<1.00	<0.380	μg/L	1	0.380	1	0.38
Toluene		**5.60**	**5.60**	0.450	μg/L	1	0.270	1	0.27
1,1,2-Trichloroethane	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichloropropane	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Dibromochloromethane	U	<0.320	<1.00	<0.320	μg/L	1	0.320	1	0.32
1,2-Dibromoethane (EDB)	U	<0.340	<1.00	<0.340	μg/L	1	0.340	1	0.34
Tetrachloroethene (PCE)	U	<0.280	<1.00	<0.280	μg/L	1	0.280	1	0.28
Chlorobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
1,1,1,2-Tetrachloroethane	U	<0.220	<1.00	<0.220	μg/L	1	0.220	1	0.22
Ethylbenzene	J	**0.580**	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene		**11.2**	**11.2**	<0.540	μg/L	1	0.540	1	0.54
Bromoform	U	<0.230	<1.00	<0.230	μg/L	1	0.230	1	0.23
Styrene	U	<0.210	<1.00	<0.210	μg/L	1	0.210	1	0.21
o-Xylene		**5.60**	**5.60**	<0.260	μg/L	1	0.260	1	0.26
1,1,2,2-Tetrachloroethane	U	<0.420	<1.00	<0.420	μg/L	1	0.420	1	0.42
2-Chlorotoluene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
1,2,3-Trichloropropane	U	<0.430	<1.00	<0.430	μg/L	1	0.430	1	0.43
Isopropylbenzene		**1.13**	**1.13**	<0.260	μg/L	1	0.260	1	0.26

continued . . .

sample 195784 continued . . .

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
Bromobenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene		**1.87**	**1.87**	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene		**2.78**	**2.78**	<0.270	μg/L	1	0.270	1	0.27
tert-Butylbenzene	U	<0.300	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2,4-Trimethylbenzene		**6.66**	**6.66**	<0.290	μg/L	1	0.290	1	0.29
1,4-Dichlorobenzene (para)	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
sec-Butylbenzene	J	**0.440**	<1.00	<0.280	μg/L	1	0.280	1	0.28
1,3-Dichlorobenzene (meta)	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
p-Isopropyltoluene	U	<0.330	<1.00	<0.330	μg/L	1	0.330	1	0.33
4-Chlorotoluene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
1,2-Dichlorobenzene (ortho)	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
n-Butylbenzene	J	**0.440**	<1.00	<0.300	μg/L	1	0.300	1	0.3
1,2-Dibromo-3-chloropropane	U	<0.680	<5.00	<0.680	μg/L	1	0.680	5	0.68
1,2,3-Trichlorobenzene	U	<0.330	<5.00	<0.330	μg/L	1	0.330	5	0.33
1,2,4-Trichlorobenzene	U	<0.340	<5.00	<0.340	μg/L	1	0.340	5	0.34
Naphthalene	J	**0.340**	<5.00	<0.280	μg/L	1	0.280	5	0.28
Hexachlorobutadiene	U	<0.540	<5.00	<0.540	μg/L	1	0.540	5	0.54

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.8	μg/L	1	50.0	102	75.3 - 131
Toluene-d8		48.5	μg/L	1	50.0	97	91.4 - 112
4-Bromofluorobenzene (4-BFB)		48.2	μg/L	1	50.0	96	83.8 - 108

Method Blank (1)

QC Batch: 59464 Date Analyzed: 2009-05-14 Analyzed By: ER
Prep Batch: 50749 QC Preparation: 2009-05-14 Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0966	mg/L	1	0.100	97	75.6 - 110
4-Bromofluorobenzene (4-BFB)		0.0986	mg/L	1	0.100	99	63.6 - 117

Method Blank (1)

QC Batch: 59509 Date Analyzed: 2009-05-14 Analyzed By: KB
Prep Batch: 50788 QC Preparation: 2009-05-14 Prepared By: KB

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOU Wells

SAMPLER'S SIGNATURE: [signature]

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS	REMARKS
5-11-09	1145	HTSA-0197-HVOU-006-0509	Water	195784	4	X	X	X	

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY: (SIGNATURE)	2. RELINQUISHED BY: (SIGNATURE)	3. RECEIVED BY LAB: (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME) James Gutierrez	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace-LBK
	GOOD CONDITION/COOLED BY:	13/13C	(TIME/DATE) 1600 5/11/09	(TIME/DATE) 1700 5-11-09	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORMS TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: (LS Cannot find Air Bill) PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO: 9

PROJECT NAME: HELSTF TSA Long-Term Groundwater HVOC Wells

SAMPLER'S SIGNATURE:

DATE	TIME	SAMPLE ID	MATRIX	LAB NO.	NO. OF CONTAINERS	VOC	GRO	TDS							REMARKS
5-11-09	1145	HTSA-0197-HVOC-~~0002~~ 006 -0500-ms/msd	Water		4	X	X	X							

PROJECT INFORMATION	SAMPLES RECEIVED		1. RELINQUISHED BY (SIGNATURE)	2. RELINQUISHED BY (SIGNATURE)	3. RECEIVED BY LAB (SIGNATURE)
PROJECT MANAGER: Brad Davis	TOTAL NO. OF CONTAINERS:		(PRINTED NAME) GABRIEL GARCIA	(PRINTED NAME) James Gutierrez	(PRINTED NAME) Carol Fox
SHIPPING ID NO.	CHAIN OF CUSTODY SEALS		RECEIVED BY: (SIGNATURE)	RECEIVED BY: (SIGNATURE)	(COMPANY) Trace - LBK
	GOOD CONDITION/CHILLED	4°C ice	(TIME/DATE) 1600 5/11/09	(TIME/DATE) 1700 5-11-09	(TIME/DATE) 5-13-09 9:15
VIA: Lab Courier	CONFORM TO RECORD		SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYTE LIST FOR DETAILS		IR 4.3 4.8

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White Sands Missile Range

Data Review

Otero County, New Mexico

Volatile Organics, Gasoline Range Organics

SDGs # 9093009, 9093010

Analyses Performed By:
Trace Analysis, Inc.
Lubbock, Texas

Report #10966R
Review Level: Tier II
Project: GP08WSMR00SW OC009

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDGs) 9090309 and 9090310 for samples collected in association with the White Sands Water Monitoring Site, Otero County, New Mexico. The review was conducted as a Tier II evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
						VOC	SVOC	PCB	MET	MISC
9090309	HTSA-0197-HVW-002-0909	211134	Water	9/29/09		X	X			
9090309	HTSA-0197-TB-09090	211135	Water	9/29/09		X	X			
9090310	HTSA-0197-HMW-052-0909	211136	Water	9/23/09		X	X			

Note: The MS/MSD analysis was performed on sample location HTSA-0197-HMW-52-0909.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260B, and Method 8015B. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999/January 2005.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cooled @ 4 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cooled @ 4 °C.

s.u. Standard units

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
HTSA-0197-HMW-052-0909 HTSA-0197-HVW-002-0909	Naphthlalene	>UL	>UL

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

7. Field Duplicate Analysis

Field duplicate analysis is used to assess the precision and accuracy of the field sampling procedures and analytical method. A control limit of 50% for water matrices and 100% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

A field duplicate was not collected from a sample location within these SDGs.

8. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
HTSA-0197-HVW-002-0909	Toluene	19000 E	NA	19000 EJ

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate(LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor	X		X		
Moisture Content		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

GASOLINE RANGE ORAGANICS (GRO) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8015	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C +/- 2
	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cooled @ 4 °C +/- 2

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the reporting limit (RL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. The analysis requires surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibited recoveries within the control limits.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LSCD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LSCD analysis exhibited recoveries within the control limits.

6. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows.

All identified compounds met the specified criteria.

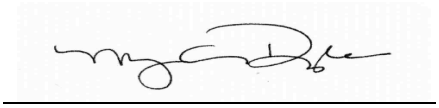
7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DRO

DRO; SW-846 8015	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY (GC/FID)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate(LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)					X
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X

VALIDATION PERFORMED BY: Mary Ann Doyle

SIGNATURE: 

DATE: October 28, 2009

PEER REVIEW:

DATE: _____

CHAIN OF CUSTODY/
CORRECTED SAMPLE ANALYSIS DATA SHEETS

10966 ①

Analytical Report

Sample: 211134 - HTSA-0197-HVW-002-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64081	Date Analyzed:	2009-10-01	Analyzed By:	ER
Prep Batch:	54719	Sample Preparation:	2009-10-01	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO		**53.4**	**53.4**	<7.60	mg/L	50	7.60	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		4.93	mg/L	50	5.00	99	70.8 - 112
4-Bromofluorobenzene (4-BFB)		4.90	mg/L	50	5.00	98	80 - 109

Sample: 211134 - HTSA-0197-HVW-002-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**1180**	**1180**	<20.0	μg/L	50	20.0	1	0.4
Benzene		**8510**	**8510**	<12.0	μg/L	50	12.0	1	0.24
Toluene	[1]	**19000** E	**19000**	<13.5	μg/L	50	13.5	1	0.27
Ethylbenzene		**69.5**	**69.5**	<13.0	μg/L	50	13.0	1	0.26
m,p-Xylene		**5180**	**5180**	<27.0	μg/L	50	27.0	1	0.54
o-Xylene		**2740**	**2740**	<13.0	μg/L	50	13.0	1	0.26
n-Propylbenzene		**133**	**133**	<15.5	μg/L	50	15.5	1	0.31
1,3,5-Trimethylbenzene		**299**	**299**	<13.5	μg/L	50	13.5	1	0.27
1,2,4-Trimethylbenzene		**1310**	**1310**	<14.5	μg/L	50	14.5	1	0.29
Naphthalene		**425** J	**425**	<14.0	μg/L	50	14.0	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		2530	μg/L	50	2500	101	92.3 - 115
Toluene-d8		2540	μg/L	50	2500	102	89.8 - 109
4-Bromofluorobenzene (4-BFB)		2540	μg/L	50	2500	102	89.5 - 112

Sample: 211135 - HTSA-0197-TB-09-090

[1]Estimated concentration value greater than standard range.

Laboratory: Lubbock
Analysis: Volatiles
QC Batch: 64104
Prep Batch: 54745

Analytical Method: S 8260B
Date Analyzed: 2009-10-01
Sample Preparation: 2009-10-01

Prep Method: S 5030B
Analyzed By: KB
Prepared By: KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE	U	<0.400	<1.00	<0.400	μg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	μg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	μg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	μg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	μg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	μg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	μg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	μg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.6	μg/L	1	50.0	101	92.3 - 115
Toluene-d8		49.9	μg/L	1	50.0	100	89.8 - 109
4-Bromofluorobenzene (4-BFB)		49.5	μg/L	1	50.0	99	89.5 - 112

Method Blank (1)

QC Batch: 64081
Prep Batch: 54719

Date Analyzed: 2009-10-01
QC Preparation: 2009-10-01

Analyzed By: ER
Prepared By: ER

Parameter	Flag	Result	Units	Reporting Limits
GRO		<0.152	mg/L	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.0970	mg/L	1	0.100	97	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.0941	mg/L	1	0.100	94	80 - 109

Method Blank (1)

QC Batch: 64104
Prep Batch: 54745

Date Analyzed: 2009-10-01
QC Preparation: 2009-10-01

Analyzed By: KB
Prepared By: KB

Parameter	Flag	Result	Units	Reporting Limits
Bromochloromethane		<0.370	μg/L	0.37
Dichlorodifluoromethane		<0.450	μg/L	0.45

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO: 57

PROJECT NAME: HELSTF TSA Groundwater Monitoring

SAMPLERS (SIGNATURE):

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO. OF CONTAINERS	ANALYSIS REQUESTED		REMARKS
9-29-09	1040	HTSA-0197-TB-09-002-0909	Water	211134	6	X	X	
9-29-09	1040	HTSA-0197-TB-09-090	WATER	135	2	X		

SHIPPING INFORMATION

FROM: Lab Quality

CARRIER: Fed Ex

AIR BILL NO: 79797307 2490

VIA: Lab Courier

SAMPLE INTEGRITY

TOTAL NO. OF CONTAINERS:

CHAIN OF CUSTODY SEALS: intact

PROPER CONDITION UPON RECEIPT: IR 1.0 1.4

CONFORMS TO RECORD:

1. RELINQUISHED BY (SIGNATURE): [signature]
PRINTED NAME: GABRIEL GARCIA
RELINQUISHED BY (SIGNATURE):
TIME/DATE:

2. RECEIVED BY (SIGNATURE):
PRINTED NAME:
RELINQUISHED BY (SIGNATURE):
TIME/DATE:

3. RECEIVED BY LAB (SIGNATURE): Carol Fox
PRINTED NAME: Carol Fox
COMPANY: Trace
TIME/DATE: 9-30-09 8:30 AM

SPECIAL INSTRUCTIONS/COMMENTS: PLEASE SEE ATTACHED ANALYSIS LIST FOR DETAILS

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - ORIGINAL (ACCOMPANIES SHIPMENT) YELLOW - LABORATORY COPY PINK - FILE COPY

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Analytical Report

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5030B
QC Batch:	64046	Date Analyzed:	2009-09-30	Analyzed By:	ER
Prep Batch:	54693	Sample Preparation:	2009-09-30	Prepared By:	ER

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
GRO	U	<0.152	<0.200	<0.152	mg/L	1	0.152	0.2	0.152

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.102	mg/L	1	0.100	102	70.8 - 112
4-Bromofluorobenzene (4-BFB)		0.104	mg/L	1	0.100	104	80 - 109

Sample: 211136 - HTSA-0197-HMW-052-0909

Laboratory:	Lubbock				
Analysis:	Volatiles	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	64104	Date Analyzed:	2009-10-01	Analyzed By:	KB
Prep Batch:	54745	Sample Preparation:	2009-10-01	Prepared By:	KB

Parameter	Flag	SDL Based Result	MQL Based Result	Method Blank Result	Units	Dilution	SDL	MQL (Unadjusted)	MDL (Unadjusted)
MTBE		**9.40**	**9.40**	<0.400	µg/L	1	0.400	1	0.4
Benzene	U	<0.240	<1.00	<0.240	µg/L	1	0.240	1	0.24
Toluene	U	<0.270	<1.00	<0.270	µg/L	1	0.270	1	0.27
Ethylbenzene	U	<0.260	<1.00	<0.260	µg/L	1	0.260	1	0.26
m,p-Xylene	U	<0.540	<1.00	<0.540	µg/L	1	0.540	1	0.54
o-Xylene	U	<0.260	<1.00	<0.260	µg/L	1	0.260	1	0.26
n-Propylbenzene	U	<0.310	<1.00	<0.310	µg/L	1	0.310	1	0.31
1,3,5-Trimethylbenzene	U	<0.270	<1.00	<0.270	µg/L	1	0.270	1	0.27
1,2,4-Trimethylbenzene	U	<0.290	<1.00	<0.290	µg/L	1	0.290	1	0.29
Naphthalene	U	<0.280	<5.00	<0.280	µg/L	1	0.280	5	0.28

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.9	µg/L	1	50.0	102	92.3 - 115
Toluene-d8		50.3	µg/L	1	50.0	101	89.8 - 109
4-Bromofluorobenzene (4-BFB)		47.6	µg/L	1	50.0	95	89.5 - 112

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CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NO	PROJECT NAME
13	HESH ISA Groundwater Monitoring

SAMPLED BY (SIGNATURE): [signature]

DATE	TIME	SAMPLE ID	MATRIX	LAB NO	NO OF CONTAINERS	ANALYSIS REQUESTED		REMARKS
9-21-09	1100	HESH DISP HWM 001-0801 Decased	Water	211136	6	X	X	

PROJECT INFORMATION
PROJECT MANAGER: Fred Dunn
CHARGE CODE NO: 06
Lab Courier

CARRIER/WAYBILL NO: intact
TOTAL NO OF CONTAINERS:
SEAL CONDITION (SEALED):
SEAL CONDITION (BROKEN): JR 1.0 1.4
CUSTODY TO RECORD:

1. RELINQUISHED BY (SIGNATURE): [signature]
(PRINTED NAME): GABRIEL GARCIA
RECEIVED BY (SIGNATURE):
(TIME / DATE):

2. RELINQUISHED BY (SIGNATURE):
(PRINTED NAME):
RECEIVED BY (SIGNATURE):
(TIME / DATE):

3. RECEIVED BY LAB (SIGNATURE): Carol Fox
(PRINTED NAME): Carol Fox
AFFILIATION: Trace
(TIME / DATE): 9-30-09 8:30 Am

SPECIAL INSTRUCTIONS / COMMENTS: Fed 7979 7307 2490
PLEASE SEE ATTACHED ANALYTICAL LIST FOR DETAILS

PLEASE USE BALL POINT PEN

DISTRIBUTION: WHITE - PROJECT FILES, YELLOW - LAB, PINK - FIELD COPY

WHITE SANDS MISSILE RANGE – NEW MEXICO
ELECTRONIC VALIDATION REVIEW REPORT
SDG: 1003121
HELSTF TSA Groundwater March 2010

Analytical data was evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (October 1999); site-specific requirements defined in *White Sands Missile Range Site-Wide Quality Assurance Project Plan* (ARCADIS, 2009), and any additional evaluation criteria set forth in the area specific Work Plan. The validation presented in this review was performed at the White Sands defined Level I.

The data review summarized in this report includes a review of all sample collection documentation and the electronic data validation of the analytical data housed in the project database. Sample collection documentation included sample collection logs and chains of custody. The electronic data validation was performed utilizing the EQuIS Data Qualification Module (DQM). DQM checks for the following parameters:

- Holding times and preservation;
- Blank contamination;
  - Method blanks,
  - Trip blanks,
  - Equipment blanks;
- Matrix spike and Duplicate sample recovery;
- Matrix Spike and Matrix Spike Duplicate relative percent differences;
- Laboratory Control Sample and Duplicate recovery;
- Laboratory Control Sample and Duplicate relative percent differences;
- Surrogate recovery (organic analyses only); and
- Field duplicate relative percent difference.

Manually review was performed on the following items:

- Sample dilutions and reporting limits;
- Case Narratives; and

Reviewed data was generated by DHL Analytical. Data qualifiers were applied electronically to the database with any additional qualifiers added manually. A summary of the data as amended by data qualifiers is included with the original hard copy reports.

The attached table summarizes the data that were qualified due to QC deficiencies. The table indicates compounds/analytes qualified based on electronic and manual validation. Refer to the associated method section of the validation checklist for a detailed explanation of qualification. All other data in this SDG are considered usable as reported.

The following list of data qualifiers and definitions were applied in accordance with qualification criteria defined in the greater than guidance documents:

UB Compound/analyte detected in blank or associated blank, qualified as a non-detect at listed value.

J The analyte was positively identified, but the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected greater than the reporting limit; however, the reported quantitation limit is approximate and may, or may not represent the actual limit of quantitation necessary to accurately and precisely measure analyte in the sample.

R The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria; and the presence or absence of the analyte cannot be verified.

DQM RUN BY:	Rachelle Borne	04/28/10
REVIEW PERFORMED BY:	Rachelle Borne	04/28/10
SIGNATURE:	Rachelle Borne	04/28/10
PEER REVIEW:	Dennis Capria	04/30/10

The following samples were included in this SDG:

SDG	Sample ID	Sample Date	Parent Sample
1003121	HTSA-0197-FB-001-0310	3/15/2010	
1003121	HTSA-0197-HMW-048-0310	3/15/2010	
1003121	HTSA-0197-HMW-049-0310	3/11/2010	
1003121	HTSA-0197-HMW-050-0310	3/11/2010	
1003121	HTSA-0197-HMW-052-0310	3/15/2010	
1003121	HTSA-0197-HMW-152-0310	3/15/2010	HTSA-0197-HMW-052-0310
1003121	HTSA-0197-RB-001-0310	3/15/2010	
1003121	HTSA-0197-TB-227-0310	3/15/2010	

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Methods of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Master tracking list		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preparation/extraction date		X		X	
9. Sample analysis date		X		X	
10. Copy of chain-of-custody form signed by lab sample custodian		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Laboratory Signature		X		X	

QA – quality assurance

The analytical report was complete with the following exceptions or notations.

Comments:

VOLATILE ORGANIC COMPOUNDS

Items Reviewed	DQM Deficiency		Qualification Applied	
	No	Yes	No	Yes
1. Holding times/Preservation	DQM		DQM	
2. Reporting limits	M		M	
3. Blanks				
A. Method blanks	DQM		DQM	
B. Equipment/Field blanks	DQM		DQM	
C. Trip blanks	DQM		DQM	
4. Surrogate spike recoveries	DQM		DQM	
5. Laboratory control sample (LCS) A. LCS %R	DQM		DQM	
B. LCS duplicate (LCSD) %R	NA			
C. LCS/LCSD RPD	NA			
6. Matrix spike (MS)				
A. MS %R	DQM		DQM	
B. MS duplicate (MSD) %R	DQM		DQM	
C. MS/MSD precision (RPD)	DQM		DQM	
7. Field Duplicate precision (RPD)	DQM		DQM	

M – Manual Review %R - percent recovery RPD - relative percent difference
DQM – Data Qualification Module

Comments:
This section presents a discussion of any additions or changes to the electronic data validation for compounds analyzed by Method 8021B.

2. No dilutions were required.

6. Sample location HTSA-0197-HMW-049-0310 was used as the MS/MSD. The recoveries and RPDs were acceptable.

7. Sample location HTSA-0197-HMW-152-0310 was collected as a field duplicate of HTSA-0197-HMW-052-0310. The RPDs were acceptable at less than 40%.

Appendix E

2010 Survey Data

ARCADIS
Appendix E. 2010 Survey Data
Status Report for the HELSTF TSA Gasoline Spill Site (SWMU 197)

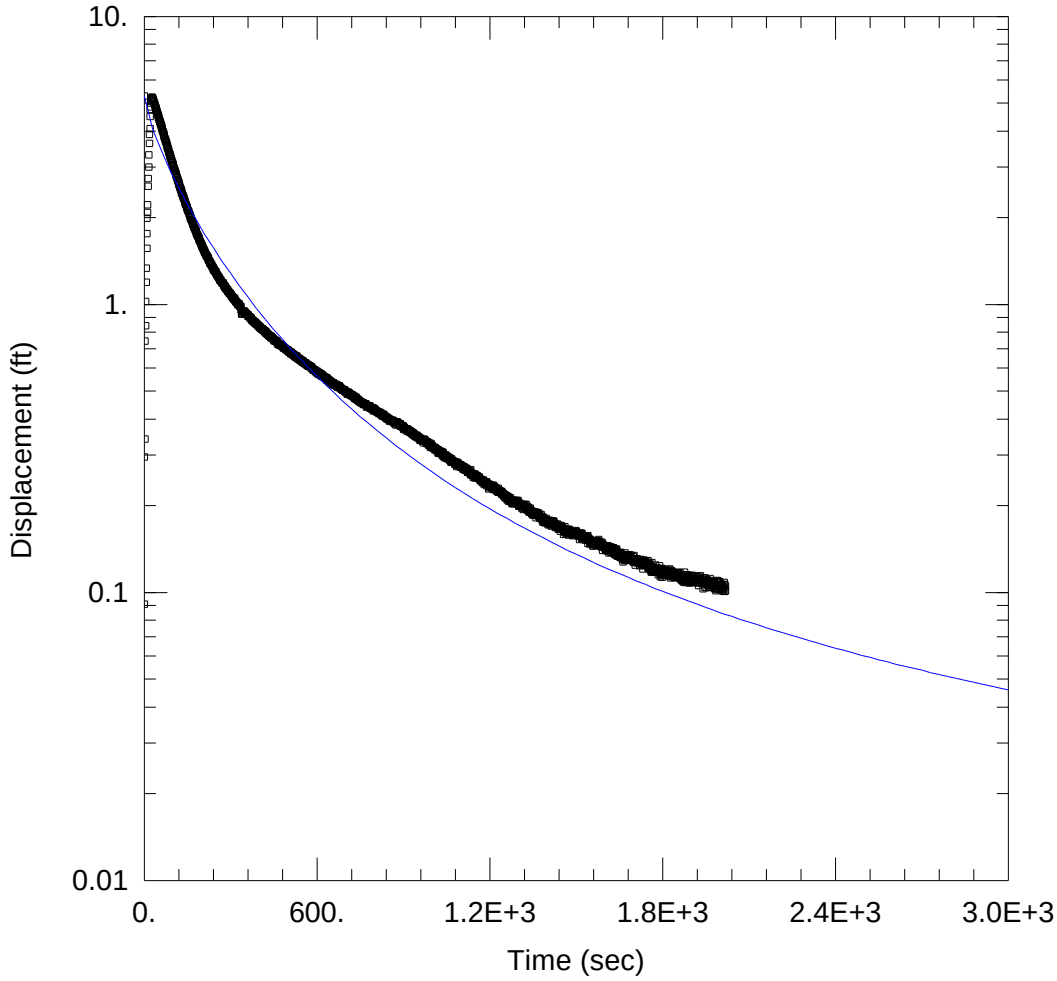
Point	State Plane, NAD 83 Northing feet	State Plane, NAD 83 Easting feet	Elevation feet	UTM, NAD 83 Northing Meters	UTM, NAD 83 Easting Meters	Elevation feet	Comments
SB 21	588933.2789	1624180.504	3965.8167	3609803.143	377779.209	3965.817	
SB 22	589161.4937	1625029.301	3962.4741	3609869.648	378038.693	3962.474	
SB 23	588741.2887	1625147.369	3962.855	3609741.17	378073.167	3962.855	
SB 20	588224.2956	1624790.993	3962.7415	3609584.897	377962.711	3962.742	
SB 7	588567.7929	1624461.235	3963.7555	3609690.757	377863.45	3963.756	
SB 10	588565.4241	1624463.64	3963.8066	3609690.027	377864.174	3963.807	
SB 15	588582.9049	1624473.157	3963.7637	3609695.32	377867.137	3963.764	
HMW-51	588575.8814	1624484.692	3963.6532	3609693.138	377870.627	3963.653	listed as HVW-51 on the PDF. This is the well that was not completed during the 2004 RFI.
SB 16	588584.9795	1624492.703	3963.6652	3609695.882	377873.101	3963.665	
SB 4	588587.6261	1624495.709	3963.6259	3609696.678	377874.027	3963.626	
SB 6	588586.2593	1624505.675	3963.4326	3609696.226	377877.059	3963.433	
SB 11	588584.4956	1624507.615	3963.5188	3609695.681	377877.644	3963.519	
SB 17	588599.5067	1624503.274	3963.5931	3609700.271	377876.375	3963.593	
SB 12	588608.2914	1624514.105	3963.4544	3609702.91	377879.707	3963.454	
SB 3	588622.3284	1624495.865	3963.465	3609707.253	377874.199	3963.465	
SB 13	588623.8381	1624497.773	3963.4538	3609707.706	377874.786	3963.454	
SB 18	588610.6112	1624466.396	3963.4064	3609703.788	377865.176	3963.406	
SB 14	588626.0186	1624443.764	3962.4472	3609708.564	377858.335	3962.447	
SB 19	588591.7023	1624304.903	3962.9596	3609698.604	377815.894	3962.96	
HMW 49 Casing	588525.2806	1624389.552	3965.5034	3609678.059	377841.453	3965.503	
HMW 49 Brass Cap	588526.3312	1624389.286	3963.588	3609678.38	377841.375	3963.588	
HMW 52 Brass Cap	588516.4019	1624488.253	3963.4836	3609674.999	377871.499	3963.484	
HMW 52 Casing	588515.8755	1624488.403	3963.1906	3609674.839	377871.543	3963.191	
HMW 50 Casing	588448.5983	1624519.308	3965.1253	3609654.225	377880.72	3965.125	
HMW 50 Brass Cap	588449.8856	1624519.351	3963.0336	3609654.618	377880.738	3963.034	
HVW 3 Brass Cap	588585.18	1624470.899	3963.7108	3609696.021	377866.457	3963.711	
HVW 3 Casing	588584.6312	1624470.985	3963.3548	3609695.854	377866.482	3963.355	
HVW 8 Casing	588602.6008	1624462.061	3962.7454	3609701.362	377863.827	3962.745	
HVW 8 Alum Tag	588603.0302	1624462.247	3963.4119	3609701.492	377863.885	3963.412	
HVW 7 Alum Tag	588611.3584	1624463.254	3963.4593	3609704.027	377864.221	3963.459	
HVW 7 Casing	588611.6954	1624463.712	3962.9333	3609704.128	377864.362	3962.933	
HVW 2 Casing	588613.2167	1624467.69	3962.6229	3609704.577	377865.58	3962.623	
HVW 2 Brass Cap	588614.2392	1624467.101	3963.3525	3609704.891	377865.404	3963.352	
HVW 10 Casing	588618.9056	1624481.423	3963.2143	3609706.261	377869.785	3963.214	
HVW 10 Alum Tag	588618.6074	1624481.906	3963.6981	3609706.169	377869.932	3963.698	
HVW 5 Alum Tag	588620.115	1624485.373	3963.6482	3609706.616	377870.993	3963.648	
HVW 5 Casing	588620.5911	1624485.516	3963.1277	3609706.76	377871.039	3963.128	
HVW 6 Casing	588623.6066	1624480.492	3963.0772	3609707.697	377869.519	3963.077	
HVW 6 Alum Tag	588622.994	1624480.464	3963.6708	3609707.511	377869.508	3963.671	
HVW 1 Metal Rim	588600.6407	1624488.567	3963.7219	3609700.67	377871.897	3963.722	
HVW 1 Casing	588600.289	1624488.802	3963.4454	3609700.562	377871.967	3963.445	
HVW 9 Casing	588598.1779	1624506.207	3961.5702	3609699.856	377877.264	3961.57	
HVW 9 Alum Tag	588597.7576	1624505.791	3963.5175	3609699.729	377877.136	3963.517	
HVW 4 Casing	588610.0122	1624511.587	3963.1161	3609703.443	377878.946	3963.116	
HVW 4 Brass Cap	588610.6199	1624511.374	3963.4934	3609703.629	377878.883	3963.493	
HMW 48 Brass Cap	588723.9637	1624567.835	3962.9042	3609737.967	377896.496	3962.904	
HMW 48 Casing	588722.4675	1624567.8	3965.6567	3609737.512	377896.479	3965.657	
Fence Corner 1	588743.6186	1624511.918	3962.9249	3609744.158	377879.526	3962.925	
Fence Corner 2	588702.9583	1624572.094	3962.522	3609731.551	377897.718	3962.522	
Pavement 1	588706.6525	1624487.914	3962.667	3609732.978	377872.078	3962.667	
Pavement 2	588575.7544	1624514.009	3963.3231	3609692.994	377879.561	3963.323	
Edge Concrete 1	588577.3897	1624484.716	3963.5807	3609693.598	377870.64	3963.581	
Edge Concrete 2	588602.2453	1624501.339	3963.562	3609701.113	377875.795	3963.562	
Edge Concrete 3	588618.7909	1624476.489	3963.7299	3609706.244	377868.281	3963.73	
Edge Concrete 4	588593.9221	1624459.881	3963.5969	3609698.725	377863.131	3963.597	
Edge Concrete 5	588589.5406	1624420.937	3963.7537	3609697.529	377851.247	3963.754	
Edge Concrete 6	588572.9837	1624409.776	3963.9213	3609692.524	377847.787	3963.921	
Edge Concrete 7	588556.7264	1624434.252	3964.1609	3609687.482	377855.187	3964.161	

ARCADIS
Appendix E. 2010 Survey Data
Status Report for the HELSTF TSA Gasoline Spill Site (SWMU 197)

Point	State Plane, NAD 83 Northing feet	State Plane, NAD 83 Easting feet	Elevation feet	UTM, NAD 83 Northing Meters	UTM, NAD 83 Easting Meters	Elevation feet	Comments
Bldg Corner 1	588643.0079	1624626.004	3962.5222	3609713.088	377913.932	3962.522	
Bldg Corner 2	588598.7175	1624692.519	3962.6095	3609699.353	377934.043	3962.609	
Bldg Corner 3	588510.8359	1624560.734	3963.1317	3609673.043	377893.568	3963.132	
Bldg Corner 4	588522.2009	1624553.974	3963.2032	3609676.531	377891.548	3963.203	
GPS Base Point	589952.555	1621974.48	3958.2358	3610121.67	377110.589	3958.236	

Appendix F

Hydraulic Testing Data



WELL TEST ANALYSIS

Data Set: C:\...\HVW-4 KGS.aqt
Date: 05/04/09 Time: 21:27:23

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: HVW-4
Test Date: 4/30/09

AQUIFER DATA

Saturated Thickness: 8. ft

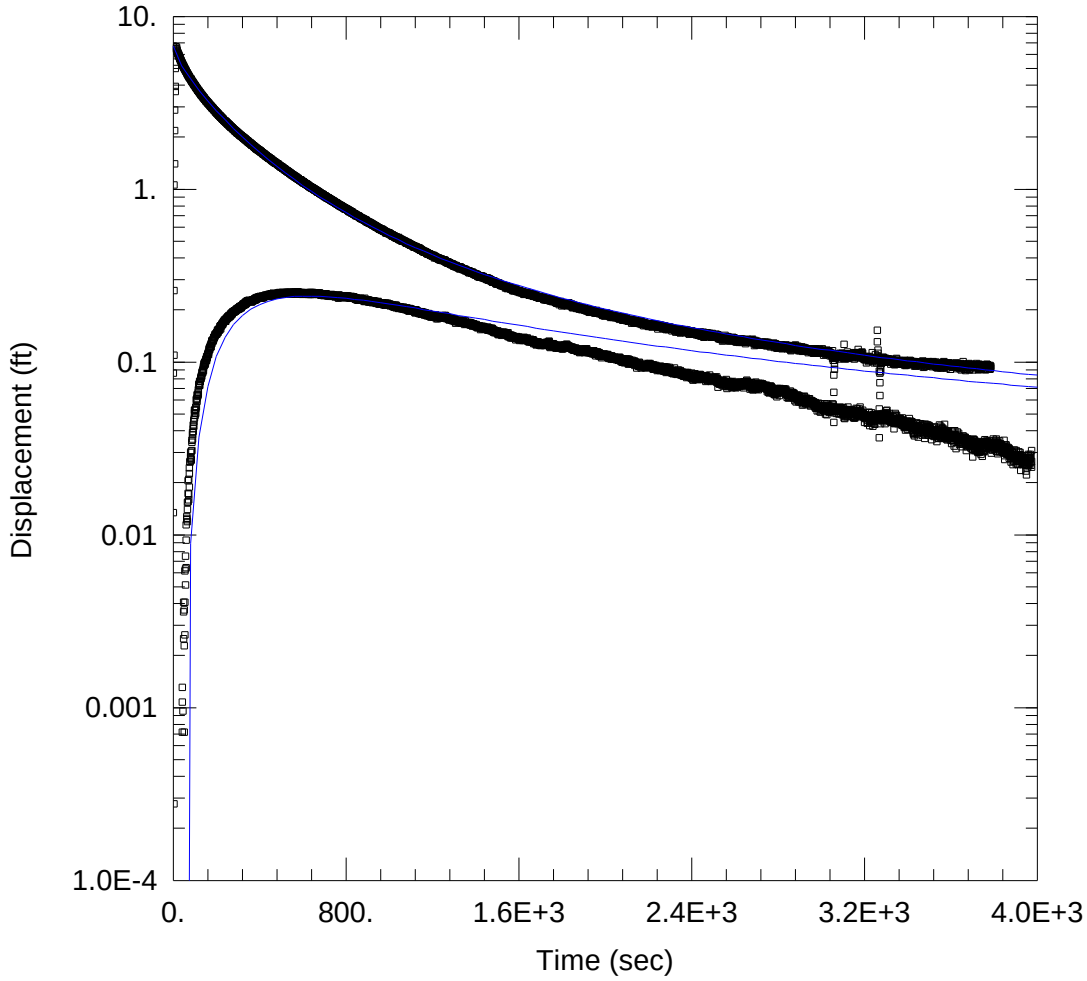
WELL DATA (HVW-4)

Initial Displacement: 5.3 ft
Total Well Penetration Depth: 8.6 ft
Casing Radius: 0.33 ft
Static Water Column Height: 8.6 ft
Screen Length: 5. ft
Well Radius: 0.33 ft

SOLUTION

Aquifer Model: Confined
Solution Method: KGS Model

Kr = 15.38 ft/day
Ss = 0.003918 ft^{-1}
Kz/Kr = 0.1



WELL TEST ANALYSIS

Data Set: C:\...\HVW-5 KGS.aqt
Date: 05/04/09 Time: 21:08:51

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: HVW-5
Test Date: 4/30/09

AQUIFER DATA

Saturated Thickness: 6.5 ft

WELL DATA

Test Well:

Well Name	X (ft)	Y (ft)
HVW-5	0	0

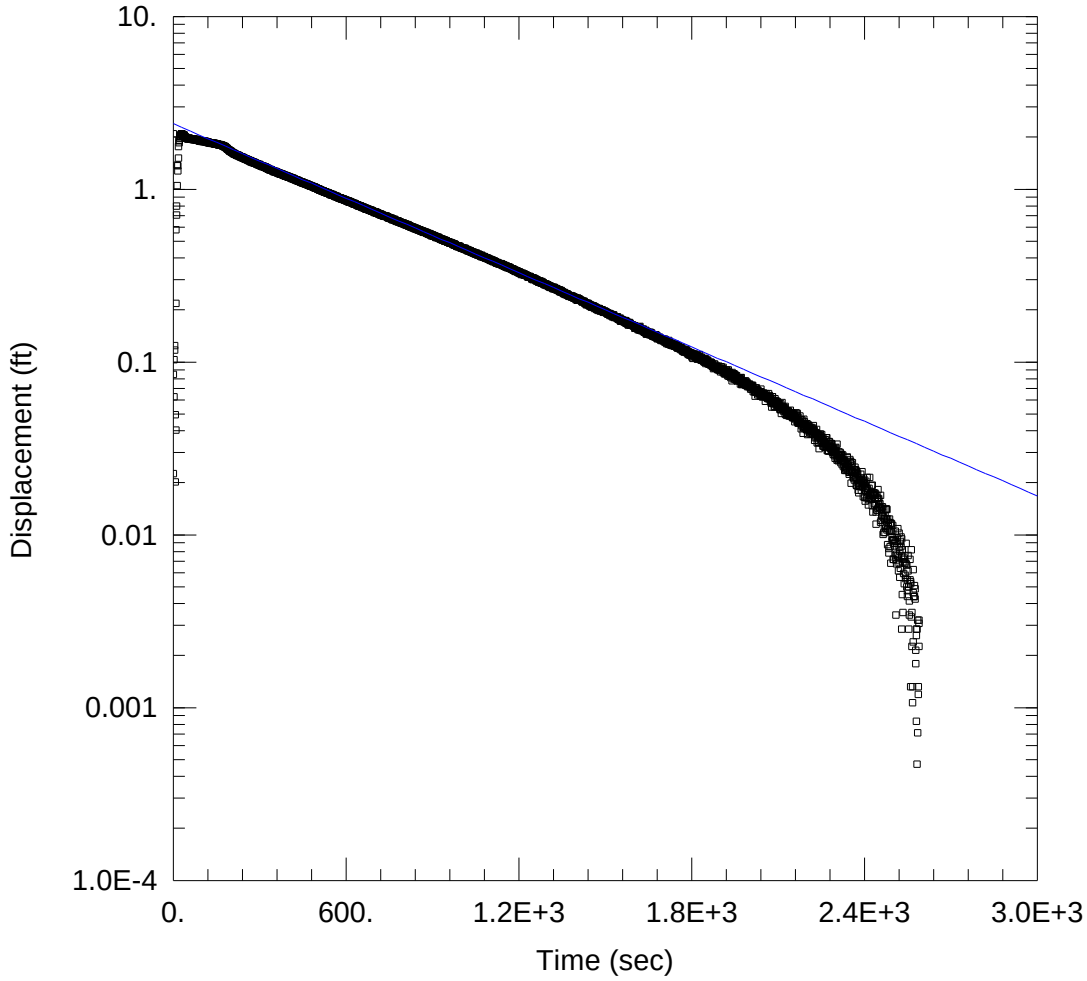
Observation Wells

Well Name	X (ft)	Y (ft)
HVW-10	5	0

Initial Displacement: 6.7 ft
Total Well Penetration Depth: 7. ft
Casing Radius: 0.167 ft

Static Water Column Height: 7. ft
Screen Length: 7. ft
Well Radius: 0.167 ft

SOLUTION



4 GAL SLUG

Data Set: C:\...\MW-48 Hvorlev.aqt
Date: 05/04/09 Time: 14:59:21

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: MW-48
Test Date: 4/27/09

AQUIFER DATA

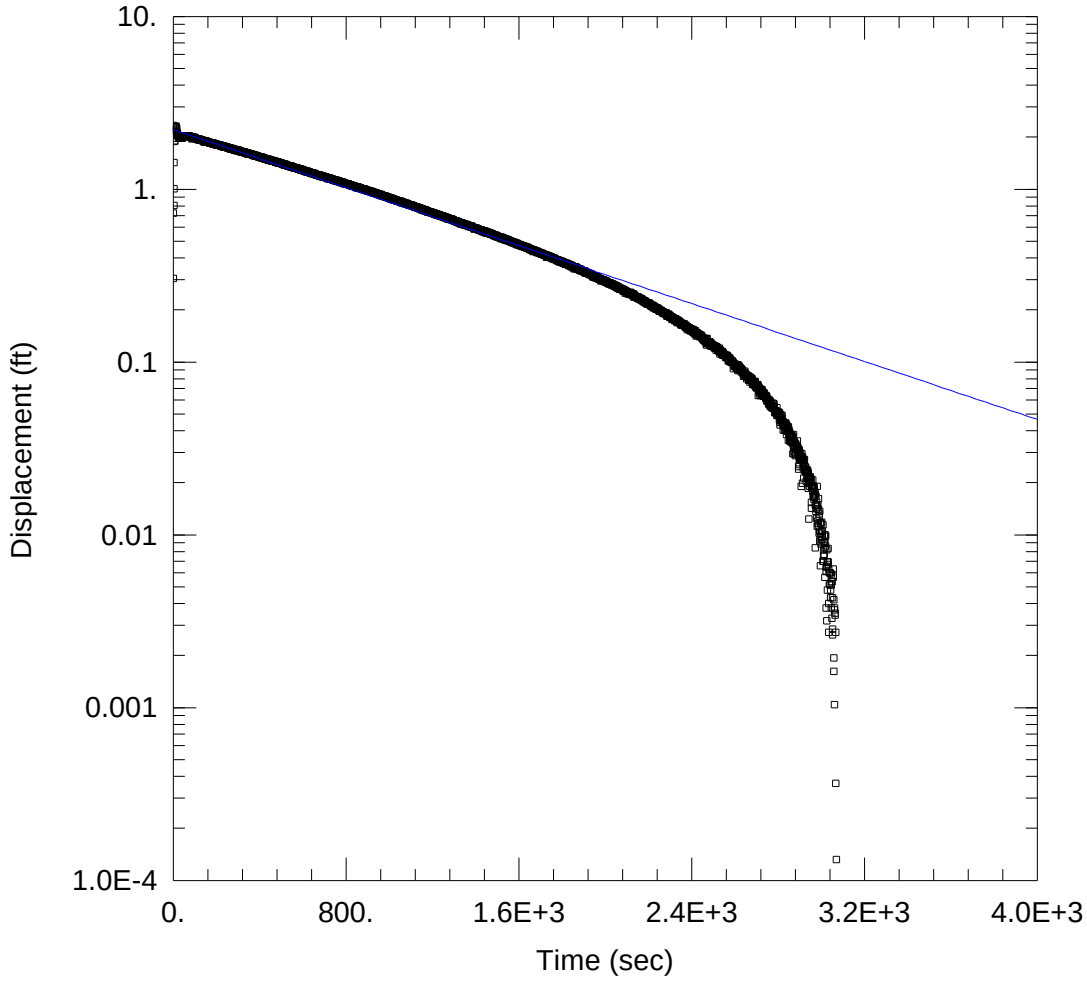
Saturated Thickness: 14.8 ft
Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-48)

Initial Displacement: 2.1 ft
Total Well Penetration Depth: 14.8 ft
Casing Radius: 0.333 ft
Static Water Column Height: 14.8 ft
Screen Length: 14.8 ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Confined
Solution Method: Hvorslev
K = 2.833 ft/day
y0 = 2.388 ft



4 GAL SLUG

Data Set: C:\...\MW-49 Hvorlev.aqt
Date: 05/04/09 Time: 15:00:28

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: MW-49
Test Date: 4/27/09

AQUIFER DATA

Saturated Thickness: 14.6 ft Anisotropy Ratio (Kz/Kr): 0.1

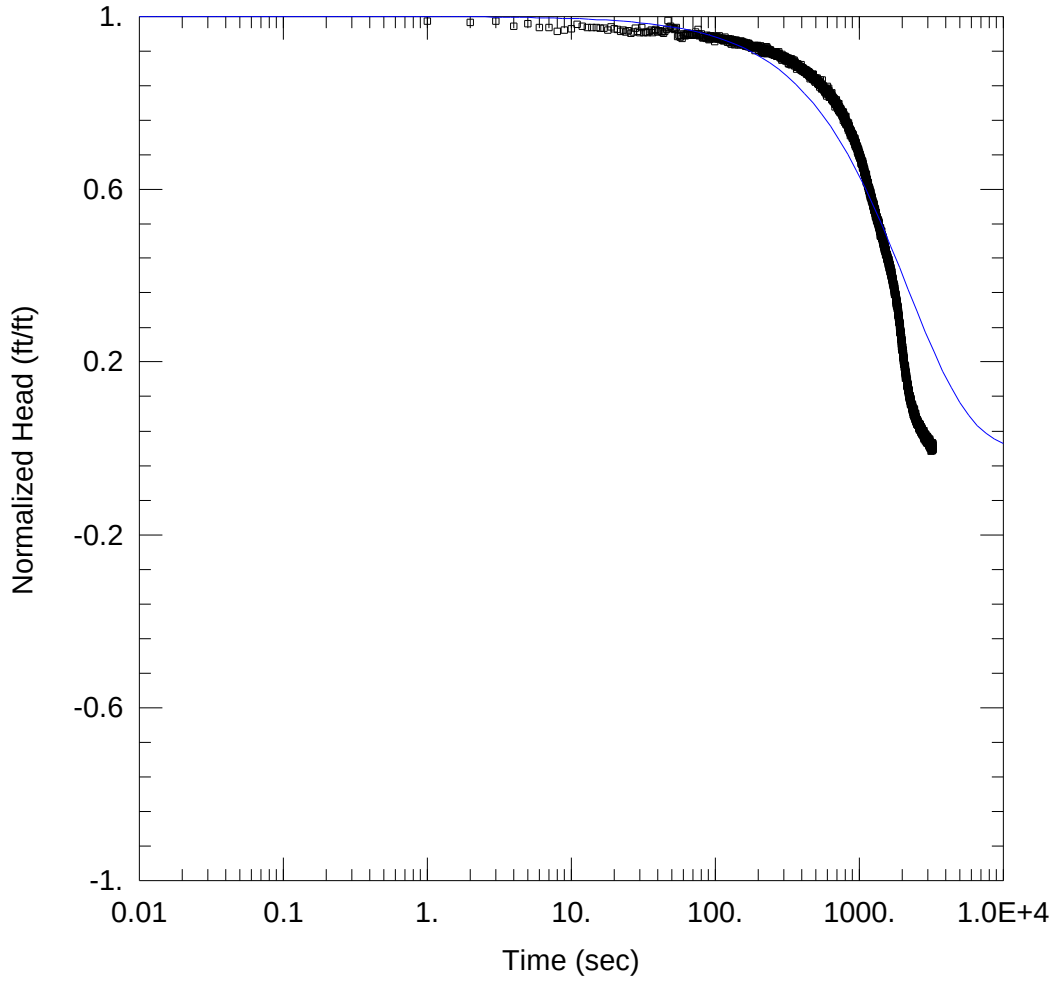
WELL DATA (MW-49)

Initial Displacement: 2.33 ft Static Water Column Height: 14.6 ft
Total Well Penetration Depth: 14.6 ft Screen Length: 14.6 ft
Casing Radius: 0.333 ft Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 1.677 ft/day y0 = 2.205 ft



4 GAL SLUG

Data Set: C:\...\KGS 1994 Model with Skin.aqt
Date: 05/04/09 Time: 18:50:06

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: MW-50
Test Date: 4/27/09

AQUIFER DATA

Saturated Thickness: 14.7 ft

WELL DATA (MW-50)

Initial Displacement: 0.6 ft
Total Well Penetration Depth: 14.7 ft
Casing Radius: 0.333 ft
Well Skin Radius: 0.833 ft

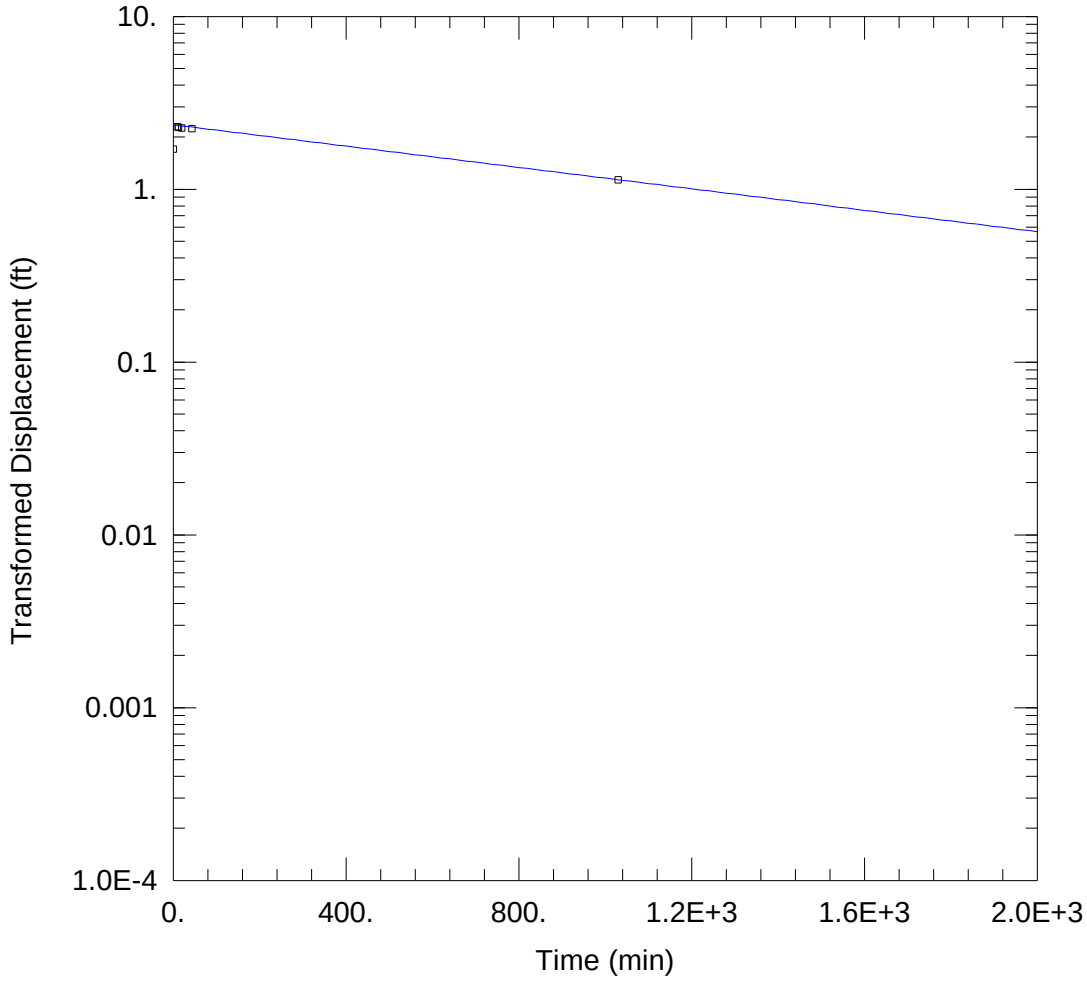
Static Water Column Height: 14.7 ft
Screen Length: 14.7 ft
Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model w/skin

Kr = 2.392 ft/day
Kz/Kr = 0.6383

Ss = 0.0001874 ft^{-1}
Kr' = 0.1596 ft/day



2 GAL SLUG

Data Set: C:\...\MW-52 Hvorlev.aqt
Date: 05/04/09 Time: 15:17:32

PROJECT INFORMATION

Company: ARCADIS
Client: WSMR-TSA
Project: GP08WSMR.0C16.DK001
Location: White Sands
Test Well: MW-52
Test Date: 4/27/09

AQUIFER DATA

Saturated Thickness: 4. ft Anisotropy Ratio (Kz/Kr): 0.1

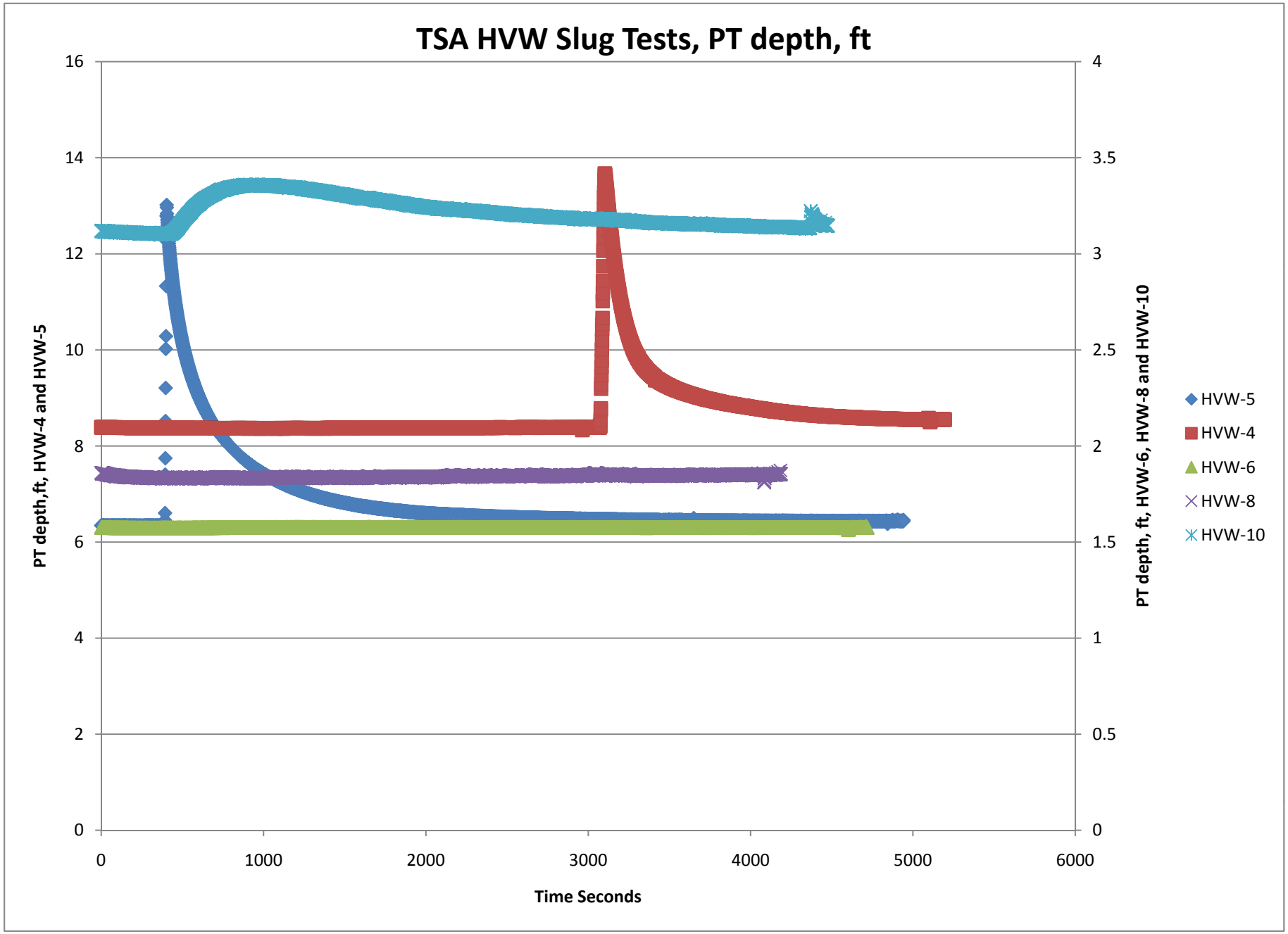
WELL DATA (MW-52)

Initial Displacement: 1.7 ft Static Water Column Height: 4. ft
Total Well Penetration Depth: 4. ft Screen Length: 4. ft
Casing Radius: 0.333 ft Well Radius: 0.333 ft

SOLUTION

Aquifer Model: Confined Solution Method: Hvorslev

K = 0.07528 ft/day y0 = 2.357 ft


TSA HVW Slug Tests, PT depth, ft
PT depth,ft, HVW-4 and HVW-5
PT depth, ft, HVW-6, HVW-8 and HVW-10
Time Seconds
16
14
12
10
8
6
4
2
0
4
3.5
3
2.5
2
1.5
1
0.5
0
0
1000
2000
3000
4000
5000
6000
HVW-5
HVW-4
HVW-6
HVW-8
HVW-10

Report Date:	5/4/2009 10:50
Report User Name:	bengard
Report Computer Nam	CA3L-BENGARD2

Log File Properties

File Name	HVW-5 ST HVW-4 2009-04-30 15.08.19.wsl
Create Date	4/30/2009 15:08

Device Properties

Device	Level TROLL® 700
Site	TSA
Device Name	
Serial Number	137603
Firmware Version	2.07
Hardware Version	3

Log Configuration

Log Name	HVW-5 ST HVW-4
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Versio	5.5.7.0
Create Date	4/30/2009 13:35
Notes Size(bytes)	4096
Type	Fast Linear
Overwrite when fu	Disabled
Scheduled Start T	4/30/2009 13:40
Scheduled Stop T	No Stop Time
Interval	Days: 0 hrs: 00 mins: 00 secs: 01

Level Reference Settings At Log Creation

Level Measu	Depth
Specific (	0.999

Log Notes:

Date and Time	Note
4/30/2009 15:06	Suspend Command
4/30/2009 15:06	Log Download - Used Battery: 2% Used Memory: 7% Name: Unknown

Log Data:

Record Count 5197

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 137603 Pressure (PSI)	Sensor: Pres 69 SN#: 137603 Temperature	Sensor: Pres 69ft SN#: 137603 Depth (ft)	Normalized
4/30/2009 13:40	0	3.633216	24.958679	8.388983	0.61359921
4/30/2009 13:40	1.001	3.634265	24.952789	8.391405	0.61377637
4/30/2009 13:40	2.001	3.633543	24.940521	8.389739	0.61365451
4/30/2009 13:40	3.001	3.632607	24.931244	8.387578	0.61349645

4/30/2009 13:40	4.001	3.631675	24.916046	8.385425	0.61333897
4/30/2009 13:40	5.001	3.633543	24.902832	8.389739	0.61365451
4/30/2009 13:40	6.001	3.634036	24.88916	8.390877	0.61373775
4/30/2009 13:40	7.001	3.633101	24.875916	8.388717	0.61357976
4/30/2009 13:40	8.001	3.634535	24.860748	8.392028	0.61382193
4/30/2009 13:40	9.001	3.633923	24.851929	8.390615	0.61371858
4/30/2009 13:40	10.001	3.633152	24.835297	8.388835	0.61358839
4/30/2009 13:40	11.001	3.633543	24.820129	8.389739	0.61365451
4/30/2009 13:40	12.001	3.633433	24.807373	8.389485	0.61363593
4/30/2009 13:40	13.001	3.633772	24.794189	8.390266	0.61369305
4/30/2009 13:40	14.001	3.632442	24.781433	8.387195	0.61346843
4/30/2009 13:40	15.001	3.634154	24.766266	8.39115	0.61375771
4/30/2009 13:40	16.001	3.634203	24.75354	8.391262	0.61376591
4/30/2009 13:40	17.001	3.630161	24.743744	8.38193	0.61308333
4/30/2009 13:40	18.001	3.634479	24.729065	8.391898	0.61381242
4/30/2009 13:40	19.001	3.63442	24.718323	8.391764	0.61380262
4/30/2009 13:40	20.001	3.633872	24.703644	8.390497	0.61370995
4/30/2009 13:40	21.001	3.632169	24.692352	8.386564	0.61342228
4/30/2009 13:40	22.001	3.632718	24.676727	8.387834	0.61351517
4/30/2009 13:40	23.001	3.633101	24.667419	8.388717	0.61357976
4/30/2009 13:40	24.001	3.632169	24.65274	8.386564	0.61342228
4/30/2009 13:40	25.001	3.632607	24.641022	8.387578	0.61349645
4/30/2009 13:40	26.001	3.632557	24.627777	8.387462	0.61348796
4/30/2009 13:40	27.001	3.63349	24.616058	8.389614	0.61364537
4/30/2009 13:40	28.001	3.632383	24.603333	8.38706	0.61345856
4/30/2009 13:40	29.001	3.634101	24.591125	8.391026	0.61374864
4/30/2009 13:40	30.001	3.632661	24.579865	8.387702	0.61350551
4/30/2009 13:40	31.001	3.634319	24.56955	8.391531	0.61378558
4/30/2009 13:40	32.001	3.632557	24.557373	8.387462	0.61348796
4/30/2009 13:40	33.001	3.632557	24.548065	8.387462	0.61348796
4/30/2009 13:40	34.001	3.63189	24.533875	8.385922	0.61337532
4/30/2009 13:40	35.001	3.632661	24.522614	8.387702	0.61350551
4/30/2009 13:40	36.001	3.633708	24.510864	8.390119	0.6136823
4/30/2009 13:40	37.001	3.632557	24.498657	8.387462	0.61348796
4/30/2009 13:40	38.001	3.632198	24.488373	8.386634	0.6134274
4/30/2009 13:40	39.001	3.633372	24.478577	8.389344	0.61362562
4/30/2009 13:40	40.001	3.633708	24.467346	8.390119	0.6136823
4/30/2009 13:40	41.001	3.632001	24.456604	8.386177	0.61339397
4/30/2009 13:40	42.001	3.633056	24.439972	8.388613	0.61357215
4/30/2009 13:40	43.001	3.632361	24.434601	8.387011	0.61345497
4/30/2009 13:40	44.001	3.632774	24.421417	8.387963	0.61352461
4/30/2009 13:40	45.001	3.632718	24.411102	8.387834	0.61351517
4/30/2009 13:40	46.001	3.632301	24.398895	8.386871	0.61344473
4/30/2009 13:40	47.001	3.632301	24.38913	8.386871	0.61344473
4/30/2009 13:40	48.001	3.633027	24.379333	8.388547	0.61356732
4/30/2009 13:40	49.001	3.632774	24.369049	8.387963	0.61352461
4/30/2009 13:40	50.001	3.632498	24.357819	8.387324	0.61347787
4/30/2009 13:40	51.001	3.63209	24.345123	8.386382	0.61340897
4/30/2009 13:40	52.001	3.633597	24.336823	8.389864	0.61366365
4/30/2009 13:40	53.001	3.632498	24.32901	8.387324	0.61347787
4/30/2009 13:40	54.001	3.631257	24.316315	8.38446	0.61326838
4/30/2009 13:40	55.001	3.631535	24.307007	8.385101	0.61331527
4/30/2009 13:40	56.001	3.633135	24.298676	8.388795	0.61358546
4/30/2009 13:40	57.001	3.632941	24.289429	8.388349	0.61355284

4/30/2009 13:40	58.001	3.633326	24.276703	8.389236	0.61361772
4/30/2009 13:40	59.001	3.632582	24.266968	8.387519	0.61349213
4/30/2009 13:41	60.001	3.632144	24.258606	8.386507	0.61341811
4/30/2009 13:41	61.001	3.632498	24.248871	8.387324	0.61347787
4/30/2009 13:41	62.001	3.631813	24.23761	8.385743	0.61336223
4/30/2009 13:41	63.001	3.631699	24.227356	8.38548	0.61334299
4/30/2009 13:41	64.001	3.632442	24.221008	8.387195	0.61346843
4/30/2009 13:41	65.001	3.630545	24.207794	8.382815	0.61314806
4/30/2009 13:41	66.001	3.631535	24.198059	8.385101	0.61331527
4/30/2009 13:41	67.001	3.631428	24.191193	8.384853	0.61329713
4/30/2009 13:41	68.001	3.632661	24.179474	8.387702	0.61350551
4/30/2009 13:41	69.001	3.629827	24.17215	8.381157	0.61302679
4/30/2009 13:41	70.001	3.632442	24.162842	8.387195	0.61346843
4/30/2009 13:41	71.001	3.629827	24.156006	8.381157	0.61302679
4/30/2009 13:41	72.001	3.631428	24.144287	8.384853	0.61329713
4/30/2009 13:41	73.001	3.630322	24.134979	8.382302	0.61311054
4/30/2009 13:41	74.001	3.631866	24.125702	8.385865	0.61337115
4/30/2009 13:41	75.001	3.630488	24.116913	8.382685	0.61313855
4/30/2009 13:41	76.001	3.631699	24.105682	8.38548	0.61334299
4/30/2009 13:41	77.001	3.630655	24.098846	8.38307	0.61316671
4/30/2009 13:41	78.001	3.631929	24.092499	8.386013	0.61338198
4/30/2009 13:41	79.001	3.631257	24.08078	8.38446	0.61326838
4/30/2009 13:41	80.001	3.632198	24.071472	8.386634	0.6134274
4/30/2009 13:41	81.001	3.631759	24.062225	8.385618	0.61335308
4/30/2009 13:41	82.001	3.630762	24.057343	8.383317	0.61318478
4/30/2009 13:41	83.001	3.631584	24.045135	8.385216	0.61332368
4/30/2009 13:41	84.001	3.63209	24.037354	8.386382	0.61340897
4/30/2009 13:41	85.001	3.63137	24.026093	8.38472	0.6132874
4/30/2009 13:41	86.001	3.630322	24.020233	8.382302	0.61311054
4/30/2009 13:41	87.001	3.629776	24.013885	8.38104	0.61301823
4/30/2009 13:41	88.001	3.629885	24.004578	8.381291	0.61303659
4/30/2009 13:41	89.001	3.631759	23.995819	8.385618	0.61335308
4/30/2009 13:41	90.001	3.630545	23.985077	8.382815	0.61314806
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4/30/2009 13:41	93.001	3.63093	23.961121	8.383705	0.61321316
4/30/2009 13:41	94.001	3.633135	23.954315	8.388795	0.61358546
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4/30/2009 13:41	98.001	3.629272	23.9216	8.379878	0.61293324
4/30/2009 13:41	99.001	3.630322	23.915741	8.382302	0.61311054
4/30/2009 13:41	100.001	3.630708	23.906433	8.383191	0.61317556
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4/30/2009 13:41	104.001	3.629333	23.873749	8.380016	0.61294333
4/30/2009 13:41	105.001	3.630052	23.87085	8.381677	0.61306483
4/30/2009 13:41	106.001	3.631535	23.863007	8.385101	0.61331527
4/30/2009 13:41	107.001	3.63137	23.855194	8.38472	0.6132874
4/30/2009 13:41	108.001	3.631428	23.845947	8.384853	0.61329713
4/30/2009 13:41	109.001	3.631104	23.8396	8.384108	0.61324264
4/30/2009 13:41	110.001	3.630378	23.828827	8.38243	0.6131199
4/30/2009 13:41	111.001	3.630214	23.824951	8.382051	0.61309218

4/30/2009 13:41	112.001	3.630488	23.814209	8.382685	0.61313855
4/30/2009 13:41	113.001	3.630105	23.808838	8.3818	0.61307382
4/30/2009 13:41	114.001	3.631315	23.799591	8.384594	0.61327819
4/30/2009 13:41	115.001	3.63098	23.794678	8.383821	0.61322165
4/30/2009 13:41	116.001	3.630545	23.786896	8.382815	0.61314806
4/30/2009 13:41	117.001	3.630488	23.778564	8.382685	0.61313855
4/30/2009 13:41	118.001	3.630322	23.773712	8.382302	0.61311054
4/30/2009 13:41	119.001	3.630322	23.767365	8.382302	0.61311054
4/30/2009 13:42	120.001	3.629937	23.758575	8.381413	0.61304552
4/30/2009 13:42	121.001	3.629387	23.750244	8.380141	0.61295248
4/30/2009 13:42	122.001	3.630272	23.745392	8.382186	0.61310206
4/30/2009 13:42	123.001	3.628127	23.735626	8.377234	0.61273985
4/30/2009 13:42	124.001	3.630161	23.731232	8.38193	0.61308333
4/30/2009 13:42	125.001	3.631151	23.722931	8.384215	0.61325046
4/30/2009 13:42	126.001	3.631759	23.71759	8.385618	0.61335308
4/30/2009 13:42	127.001	3.631475	23.710754	8.384964	0.61330525
4/30/2009 13:42	128.001	3.631151	23.703918	8.384215	0.61325046
4/30/2009 13:42	129.001	3.63043	23.696594	8.382551	0.61312875
4/30/2009 13:42	130.001	3.630052	23.691223	8.381677	0.61306483
4/30/2009 13:42	131.001	3.62999	23.683899	8.381534	0.61305437
4/30/2009 13:42	132.001	3.630708	23.675629	8.383191	0.61317556
4/30/2009 13:42	133.001	3.628892	23.667786	8.378999	0.61286895
4/30/2009 13:42	134.001	3.630545	23.665863	8.382815	0.61314806
4/30/2009 13:42	135.001	3.630322	23.657104	8.382302	0.61311054
4/30/2009 13:42	136.001	3.630272	23.653656	8.382186	0.61310206
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4/30/2009 14:00	1228.001	3.625843	22.311798	8.37196	0.61235409
4/30/2009 14:00	1229.001	3.625398	22.312805	8.370931	0.61227883
4/30/2009 14:00	1230.001	3.625298	22.311798	8.3707	0.61226193
4/30/2009 14:00	1231.001	3.623862	22.312805	8.367385	0.61201946
4/30/2009 14:00	1232.001	3.625896	22.309357	8.37208	0.61236287
4/30/2009 14:00	1233.001	3.624856	22.31131	8.36968	0.61218732
4/30/2009 14:00	1234.001	3.624955	22.308868	8.369908	0.612204
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4/30/2009 14:00	1236.001	3.624463	22.313751	8.368773	0.61212098
4/30/2009 14:00	1237.001	3.624085	22.310333	8.367902	0.61205727
4/30/2009 14:00	1238.001	3.623193	22.312286	8.36584	0.61190645
4/30/2009 14:00	1239.001	3.625576	22.312805	8.371343	0.61230896
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4/30/2009 14:00	1242.001	3.626425	22.309845	8.373302	0.61245225
4/30/2009 14:00	1243.001	3.624635	22.308868	8.369169	0.61214995
4/30/2009 14:00	1244.001	3.623975	22.308411	8.367645	0.61203848
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4/30/2009 14:01	1261.001	3.624683	22.306915	8.369282	0.61215821
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4/30/2009 14:01	1270.001	3.624354	22.308868	8.368522	0.61210262
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4/30/2009 14:01	1274.001	3.624635	22.305481	8.369169	0.61214995
4/30/2009 14:01	1275.001	3.624856	22.306427	8.36968	0.61218732
4/30/2009 14:01	1276.001	3.625508	22.305481	8.371186	0.61229748
4/30/2009 14:01	1277.001	3.624986	22.304504	8.369979	0.61220919
4/30/2009 14:01	1278.001	3.626171	22.305481	8.372717	0.61240946
4/30/2009 14:01	1279.001	3.624407	22.305481	8.368643	0.61211147
4/30/2009 14:01	1280.001	3.625348	22.304504	8.370816	0.61227041
4/30/2009 14:01	1281.001	3.625239	22.305481	8.370565	0.61225206
4/30/2009 14:01	1282.001	3.624683	22.306427	8.369282	0.61215821
4/30/2009 14:01	1283.001	3.62601	22.304016	8.372345	0.61238225
4/30/2009 14:01	1284.001	3.624241	22.304504	8.368259	0.61208339
4/30/2009 14:01	1285.001	3.624085	22.304504	8.367902	0.61205727
4/30/2009 14:01	1286.001	3.624749	22.304504	8.369434	0.61216933
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4/30/2009 14:01	1290.001	3.622759	22.30304	8.364839	0.61183324
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4/30/2009 14:01	1292.001	3.625462	22.306915	8.371079	0.61228965
4/30/2009 14:01	1293.001	3.625298	22.302094	8.3707	0.61226193
4/30/2009 14:01	1294.001	3.624749	22.302551	8.369434	0.61216933
4/30/2009 14:01	1295.001	3.625348	22.299652	8.370816	0.61227041
4/30/2009 14:01	1296.001	3.625679	22.302094	8.37158	0.6123263
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4/30/2009 14:01	1309.001	3.624635	22.303528	8.369169	0.61214995
4/30/2009 14:01	1310.001	3.625843	22.302551	8.37196	0.61235409
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4/30/2009 14:02	1324.001	3.624683	22.298218	8.369282	0.61215821
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4/30/2009 14:02	1339.001	3.624523	22.297699	8.368912	0.61213115
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4/30/2009 14:04	1443.001	3.626228	22.287964	8.372849	0.61241912
4/30/2009 14:04	1444.001	3.625576	22.289429	8.371343	0.61230896
4/30/2009 14:04	1445.001	3.624856	22.287506	8.36968	0.61218732
4/30/2009 14:04	1446.001	3.626448	22.28894	8.373356	0.6124562
4/30/2009 14:04	1447.001	3.625398	22.287506	8.370931	0.61227883
4/30/2009 14:04	1448.001	3.625789	22.289917	8.371834	0.61234487
4/30/2009 14:04	1449.001	3.626337	22.290436	8.373099	0.6124374
4/30/2009 14:04	1450.001	3.626994	22.287964	8.374617	0.61254843
4/30/2009 14:04	1451.001	3.624463	22.28653	8.368773	0.61212098
4/30/2009 14:04	1452.001	3.625954	22.289917	8.372214	0.61237267
4/30/2009 14:04	1453.001	3.627213	22.287018	8.375121	0.6125853
4/30/2009 14:04	1454.001	3.625679	22.288452	8.37158	0.6123263
4/30/2009 14:04	1455.001	3.626228	22.286041	8.372849	0.61241912
4/30/2009 14:04	1456.001	3.624955	22.28653	8.369908	0.612204
4/30/2009 14:04	1457.001	3.627988	22.287506	8.376911	0.61271622
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4/30/2009 14:04	1459.001	3.626116	22.286041	8.372589	0.6124001
4/30/2009 14:04	1460.001	3.625178	22.290436	8.370424	0.61224174
4/30/2009 14:04	1461.001	3.624955	22.285553	8.369908	0.612204

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4/30/2009 14:04	1468.001	3.62749	22.285553	8.375762	0.61263218
4/30/2009 14:04	1469.001	3.624955	22.285553	8.369908	0.612204
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4/30/2009 14:04	1476.001	3.626171	22.286041	8.372717	0.61240946
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4/30/2009 14:04	1482.001	3.624802	22.286041	8.369555	0.61217818
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4/30/2009 14:04	1485.001	3.625954	22.284576	8.372214	0.61237267
4/30/2009 14:04	1486.001	3.625462	22.285065	8.371079	0.61228965
4/30/2009 14:04	1487.001	3.625954	22.285065	8.372214	0.61237267
4/30/2009 14:04	1488.001	3.627379	22.284576	8.375506	0.61261346
4/30/2009 14:04	1489.001	3.624683	22.283142	8.369282	0.61215821
4/30/2009 14:04	1490.001	3.62573	22.282166	8.371696	0.61233478
4/30/2009 14:04	1491.001	3.62563	22.285065	8.371468	0.6123181
4/30/2009 14:04	1492.001	3.625298	22.282654	8.3707	0.61226193
4/30/2009 14:04	1493.001	3.625508	22.28363	8.371186	0.61229748
4/30/2009 14:04	1494.001	3.627656	22.284119	8.376145	0.6126602
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4/30/2009 14:05	1508.001	3.626506	22.284119	8.373489	0.61246593
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4/30/2009 14:05	1510.001	3.624683	22.280243	8.369282	0.61215821
4/30/2009 14:05	1511.001	3.624905	22.282166	8.369792	0.61219552
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4/30/2009 14:05	1513.001	3.626228	22.282166	8.372849	0.61241912
4/30/2009 14:05	1514.001	3.625013	22.283142	8.370044	0.61221395
4/30/2009 14:05	1515.001	3.62601	22.282654	8.372345	0.61238225

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4/30/2009 14:05	1525.001	3.626337	22.280243	8.373099	0.6124374
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4/30/2009 14:05	1527.001	3.625178	22.279266	8.370424	0.61224174
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4/30/2009 14:05	1535.001	3.625896	22.28067	8.37208	0.61236287
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4/30/2009 14:05	1538.001	3.624523	22.28067	8.368912	0.61213115
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4/30/2009 14:05	1545.001	3.625679	22.279755	8.37158	0.6123263
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4/30/2009 14:07	1657.001	3.626722	22.271484	8.37399	0.61250257
4/30/2009 14:07	1658.001	3.626942	22.27243	8.374496	0.61253958
4/30/2009 14:07	1659.001	3.627872	22.27243	8.376643	0.61269662
4/30/2009 14:07	1660.001	3.626337	22.269531	8.373099	0.6124374
4/30/2009 14:07	1661.001	3.626337	22.273407	8.373099	0.6124374
4/30/2009 14:07	1662.001	3.626116	22.271942	8.372589	0.6124001
4/30/2009 14:07	1663.001	3.624407	22.271484	8.368643	0.61211147
4/30/2009 14:07	1664.001	3.626891	22.270966	8.374379	0.61253102
4/30/2009 14:07	1665.001	3.625954	22.270477	8.372214	0.61237267
4/30/2009 14:07	1666.001	3.625896	22.27243	8.37208	0.61236287
4/30/2009 14:07	1667.001	3.624683	22.269989	8.369282	0.61215821
4/30/2009 14:07	1668.001	3.626609	22.270966	8.373728	0.61248341
4/30/2009 14:07	1669.001	3.626116	22.270477	8.372589	0.6124001
4/30/2009 14:07	1670.001	3.626672	22.271484	8.373872	0.61249394
4/30/2009 14:07	1671.001	3.625066	22.269531	8.370165	0.6122228
4/30/2009 14:07	1672.001	3.624299	22.269043	8.368395	0.61209333
4/30/2009 14:07	1673.001	3.626228	22.27243	8.372849	0.61241912
4/30/2009 14:07	1674.001	3.624955	22.269043	8.369908	0.612204
4/30/2009 14:07	1675.001	3.625298	22.270966	8.3707	0.61226193
4/30/2009 14:07	1676.001	3.626891	22.270477	8.374379	0.61253102
4/30/2009 14:07	1677.001	3.623758	22.269531	8.367146	0.61200198

4/30/2009 14:07	1678.001	3.625896	22.269989	8.37208	0.61236287
4/30/2009 14:07	1679.001	3.626395	22.270477	8.373234	0.61244728
4/30/2009 14:08	1680.001	3.627271	22.270477	8.375256	0.61259517
4/30/2009 14:08	1681.001	3.625896	22.269989	8.37208	0.61236287
4/30/2009 14:08	1682.001	3.625398	22.271942	8.370931	0.61227883
4/30/2009 14:08	1683.001	3.623582	22.273895	8.366738	0.61197214
4/30/2009 14:08	1684.001	3.625398	22.27243	8.370931	0.61227883
4/30/2009 14:08	1685.001	3.62563	22.272919	8.371468	0.6123181
4/30/2009 14:08	1686.001	3.625679	22.269531	8.37158	0.6123263
4/30/2009 14:08	1687.001	3.626891	22.269043	8.374379	0.61253102
4/30/2009 14:08	1688.001	3.626942	22.271484	8.374496	0.61253958
4/30/2009 14:08	1689.001	3.625679	22.269043	8.37158	0.6123263
4/30/2009 14:08	1690.001	3.626448	22.270477	8.373356	0.6124562
4/30/2009 14:08	1691.001	3.625679	22.270477	8.37158	0.6123263
4/30/2009 14:08	1692.001	3.626448	22.270477	8.373356	0.6124562
4/30/2009 14:08	1693.001	3.625576	22.268555	8.371343	0.61230896
4/30/2009 14:08	1694.001	3.625954	22.269989	8.372214	0.61237267
4/30/2009 14:08	1695.001	3.626554	22.269531	8.373602	0.61247419
4/30/2009 14:08	1696.001	3.625508	22.268555	8.371186	0.61229748
4/30/2009 14:08	1697.001	3.626281	22.268066	8.37297	0.61242797
4/30/2009 14:08	1698.001	3.624856	22.269043	8.36968	0.61218732
4/30/2009 14:08	1699.001	3.626672	22.268555	8.373872	0.61249394
4/30/2009 14:08	1700.001	3.626837	22.268066	8.374254	0.61252188
4/30/2009 14:08	1701.001	3.625398	22.269043	8.370931	0.61227883
4/30/2009 14:08	1702.001	3.626171	22.269531	8.372717	0.61240946
4/30/2009 14:08	1703.001	3.626837	22.269043	8.374254	0.61252188
4/30/2009 14:08	1704.001	3.627603	22.269531	8.376021	0.61265113
4/30/2009 14:08	1705.001	3.625508	22.269989	8.371186	0.61229748
4/30/2009 14:08	1706.001	3.625896	22.269531	8.37208	0.61236287
4/30/2009 14:08	1707.001	3.626942	22.269043	8.374496	0.61253958
4/30/2009 14:08	1708.001	3.626116	22.268555	8.372589	0.6124001
4/30/2009 14:08	1709.001	3.626448	22.269531	8.373356	0.6124562
4/30/2009 14:08	1710.001	3.625348	22.265656	8.370816	0.61227041
4/30/2009 14:08	1711.001	3.626116	22.266602	8.372589	0.6124001
4/30/2009 14:08	1712.001	3.625843	22.270477	8.37196	0.61235409
4/30/2009 14:08	1713.001	3.625462	22.268066	8.371079	0.61228965
4/30/2009 14:08	1714.001	3.627271	22.26709	8.375256	0.61259517
4/30/2009 14:08	1715.001	3.626395	22.269043	8.373234	0.61244728
4/30/2009 14:08	1716.001	3.626554	22.268066	8.373602	0.61247419
4/30/2009 14:08	1717.001	3.626506	22.268555	8.373489	0.61246593
4/30/2009 14:08	1718.001	3.626672	22.266602	8.373872	0.61249394
4/30/2009 14:08	1719.001	3.626228	22.265167	8.372849	0.61241912
4/30/2009 14:08	1720.001	3.62749	22.26709	8.375762	0.61263218
4/30/2009 14:08	1721.001	3.626554	22.264679	8.373602	0.61247419
4/30/2009 14:08	1722.001	3.627545	22.267578	8.375891	0.61264162
4/30/2009 14:08	1723.001	3.626395	22.26709	8.373234	0.61244728
4/30/2009 14:08	1724.001	3.625298	22.265656	8.3707	0.61226193
4/30/2009 14:08	1725.001	3.626448	22.269043	8.373356	0.6124562
4/30/2009 14:08	1726.001	3.627048	22.269043	8.37474	0.61255743
4/30/2009 14:08	1727.001	3.626337	22.267578	8.373099	0.6124374
4/30/2009 14:08	1728.001	3.626064	22.26709	8.37247	0.61239139
4/30/2009 14:08	1729.001	3.626281	22.26709	8.37297	0.61242797
4/30/2009 14:08	1730.001	3.626837	22.266113	8.374254	0.61252188
4/30/2009 14:08	1731.001	3.626554	22.269043	8.373602	0.61247419

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4/30/2009 14:08	1733.001	3.627545	22.266602	8.375891	0.61264162
4/30/2009 14:08	1734.001	3.62716	22.266113	8.375	0.61257645
4/30/2009 14:08	1735.001	3.625843	22.267578	8.37196	0.61235409
4/30/2009 14:08	1736.001	3.626506	22.265656	8.373489	0.61246593
4/30/2009 14:08	1737.001	3.628868	22.268555	8.378944	0.61286492
4/30/2009 14:08	1738.001	3.627442	22.267578	8.375651	0.61262406
4/30/2009 14:08	1739.001	3.62749	22.265167	8.375762	0.61263218
4/30/2009 14:09	1740.001	3.625348	22.268066	8.370816	0.61227041
4/30/2009 14:09	1741.001	3.626994	22.268555	8.374617	0.61254843
4/30/2009 14:09	1742.001	3.627323	22.26709	8.375377	0.61260402
4/30/2009 14:09	1743.001	3.625896	22.26709	8.37208	0.61236287
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4/30/2009 14:09	1745.001	3.625679	22.265656	8.37158	0.6123263
4/30/2009 14:09	1746.001	3.626228	22.266113	8.372849	0.61241912
4/30/2009 14:09	1747.001	3.626891	22.266113	8.374379	0.61253102
4/30/2009 14:09	1748.001	3.626506	22.265656	8.373489	0.61246593
4/30/2009 14:09	1749.001	3.626448	22.268555	8.373356	0.6124562
4/30/2009 14:09	1750.001	3.627106	22.263702	8.374875	0.6125673
4/30/2009 14:09	1751.001	3.627271	22.265167	8.375256	0.61259517
4/30/2009 14:09	1752.001	3.626609	22.268066	8.373728	0.61248341
4/30/2009 14:09	1753.001	3.628204	22.26709	8.377412	0.61275287
4/30/2009 14:09	1754.001	3.627656	22.263214	8.376145	0.6126602
4/30/2009 14:09	1755.001	3.627213	22.266113	8.375121	0.6125853
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4/30/2009 14:09	1757.001	3.628261	22.26709	8.377542	0.61276238
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4/30/2009 14:09	1759.001	3.626337	22.267578	8.373099	0.6124374
4/30/2009 14:09	1760.001	3.627106	22.268555	8.374875	0.6125673
4/30/2009 14:09	1761.001	3.626448	22.263702	8.373356	0.6124562
4/30/2009 14:09	1762.001	3.628483	22.264679	8.378055	0.6127999
4/30/2009 14:09	1763.001	3.62749	22.263214	8.375762	0.61263218
4/30/2009 14:09	1764.001	3.626786	22.264679	8.374138	0.6125134
4/30/2009 14:09	1765.001	3.626448	22.267578	8.373356	0.6124562
4/30/2009 14:09	1766.001	3.626837	22.265167	8.374254	0.61252188
4/30/2009 14:09	1767.001	3.627656	22.262726	8.376145	0.6126602
4/30/2009 14:09	1768.001	3.626609	22.265656	8.373728	0.61248341
4/30/2009 14:09	1769.001	3.626554	22.26178	8.373602	0.61247419
4/30/2009 14:09	1770.001	3.628261	22.265167	8.377542	0.61276238
4/30/2009 14:09	1771.001	3.627213	22.264679	8.375121	0.6125853
4/30/2009 14:09	1772.001	3.62716	22.266113	8.375	0.61257645
4/30/2009 14:09	1773.001	3.626506	22.264679	8.373489	0.61246593
4/30/2009 14:09	1774.001	3.627271	22.264191	8.375256	0.61259517
4/30/2009 14:09	1775.001	3.625178	22.264679	8.370424	0.61224174
4/30/2009 14:09	1776.001	3.626891	22.265167	8.374379	0.61253102
4/30/2009 14:09	1777.001	3.626337	22.264191	8.373099	0.6124374
4/30/2009 14:09	1778.001	3.626994	22.262726	8.374617	0.61254843
4/30/2009 14:09	1779.001	3.626064	22.262268	8.37247	0.61239139
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4/30/2009 14:09	1782.001	3.626786	22.266113	8.374138	0.6125134
4/30/2009 14:09	1783.001	3.627442	22.266113	8.375651	0.61262406
4/30/2009 14:09	1784.001	3.626281	22.264191	8.37297	0.61242797
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4/30/2009 14:09	1786.001	3.626786	22.263702	8.374138	0.6125134
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4/30/2009 14:09	1792.001	3.627323	22.262726	8.375377	0.61260402
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4/30/2009 14:09	1795.001	3.626506	22.26178	8.373489	0.61246593
4/30/2009 14:09	1796.001	3.626506	22.265167	8.373489	0.61246593
4/30/2009 14:09	1797.001	3.626448	22.262268	8.373356	0.6124562
4/30/2009 14:09	1798.001	3.626064	22.263702	8.37247	0.61239139
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4/30/2009 14:10	1802.001	3.626786	22.261261	8.374138	0.6125134
4/30/2009 14:10	1803.001	3.62573	22.264191	8.371696	0.61233478
4/30/2009 14:10	1804.001	3.626116	22.263214	8.372589	0.6124001
4/30/2009 14:10	1805.001	3.626281	22.263702	8.37297	0.61242797
4/30/2009 14:10	1806.001	3.626281	22.264191	8.37297	0.61242797
4/30/2009 14:10	1807.001	3.627048	22.264191	8.37474	0.61255743
4/30/2009 14:10	1808.001	3.626672	22.263702	8.373872	0.61249394
4/30/2009 14:10	1809.001	3.627442	22.262726	8.375651	0.61262406
4/30/2009 14:10	1810.001	3.626891	22.264191	8.374379	0.61253102
4/30/2009 14:10	1811.001	3.625843	22.261261	8.37196	0.61235409
4/30/2009 14:10	1812.001	3.626994	22.262726	8.374617	0.61254843
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4/30/2009 14:10	1815.001	3.62716	22.264191	8.375	0.61257645
4/30/2009 14:10	1816.001	3.625896	22.262268	8.37208	0.61236287
4/30/2009 14:10	1817.001	3.626994	22.261261	8.374617	0.61254843
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4/30/2009 14:10	1819.001	3.626337	22.263214	8.373099	0.6124374
4/30/2009 14:10	1820.001	3.62716	22.260803	8.375	0.61257645
4/30/2009 14:10	1821.001	3.627545	22.262726	8.375891	0.61264162
4/30/2009 14:10	1822.001	3.626722	22.264191	8.37399	0.61250257
4/30/2009 14:10	1823.001	3.627048	22.261261	8.37474	0.61255743
4/30/2009 14:10	1824.001	3.625954	22.26178	8.372214	0.61237267
4/30/2009 14:10	1825.001	3.627106	22.258331	8.374875	0.6125673
4/30/2009 14:10	1826.001	3.625679	22.259827	8.37158	0.6123263
4/30/2009 14:10	1827.001	3.624085	22.262726	8.367902	0.61205727
4/30/2009 14:10	1828.001	3.626942	22.261261	8.374496	0.61253958
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4/30/2009 14:10	1831.001	3.627323	22.262268	8.375377	0.61260402
4/30/2009 14:10	1832.001	3.627656	22.261261	8.376145	0.6126602
4/30/2009 14:10	1833.001	3.626448	22.260803	8.373356	0.6124562
4/30/2009 14:10	1834.001	3.627718	22.25882	8.376288	0.61267066
4/30/2009 14:10	1835.001	3.626228	22.262726	8.372849	0.61241912
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4/30/2009 14:10	1837.001	3.626786	22.26178	8.374138	0.6125134
4/30/2009 14:10	1838.001	3.627545	22.264191	8.375891	0.61264162
4/30/2009 14:10	1839.001	3.626994	22.260803	8.374617	0.61254843

4/30/2009 14:10	1840.001	3.62716	22.260284	8.375	0.61257645
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4/30/2009 14:10	1844.001	3.627872	22.259827	8.376643	0.61269662
4/30/2009 14:10	1845.001	3.627048	22.263214	8.37474	0.61255743
4/30/2009 14:10	1846.001	3.627872	22.259827	8.376643	0.61269662
4/30/2009 14:10	1847.001	3.626064	22.260284	8.37247	0.61239139
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4/30/2009 14:10	1850.001	3.627872	22.260284	8.376643	0.61269662
4/30/2009 14:10	1851.001	3.627872	22.26178	8.376643	0.61269662
4/30/2009 14:10	1852.001	3.627932	22.259827	8.376781	0.61270672
4/30/2009 14:10	1853.001	3.62716	22.260803	8.375	0.61257645
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4/30/2009 14:10	1856.001	3.626228	22.260803	8.372849	0.61241912
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4/30/2009 14:11	1860.001	3.627767	22.259308	8.3764	0.61267885
4/30/2009 14:11	1861.001	3.626337	22.25882	8.373099	0.6124374
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4/30/2009 14:11	1865.001	3.627718	22.260803	8.376288	0.61267066
4/30/2009 14:11	1866.001	3.626994	22.26178	8.374617	0.61254843
4/30/2009 14:11	1867.001	3.628377	22.256897	8.37781	0.61278198
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4/30/2009 14:11	1870.001	3.628204	22.258331	8.377412	0.61275287
4/30/2009 14:11	1871.001	3.626395	22.25882	8.373234	0.61244728
4/30/2009 14:11	1872.001	3.626395	22.258331	8.373234	0.61244728
4/30/2009 14:11	1873.001	3.628593	22.25882	8.37831	0.61281855
4/30/2009 14:11	1874.001	3.626064	22.259827	8.37247	0.61239139
4/30/2009 14:11	1875.001	3.626942	22.259308	8.374496	0.61253958
4/30/2009 14:11	1876.001	3.626609	22.260284	8.373728	0.61248341
4/30/2009 14:11	1877.001	3.626506	22.257874	8.373489	0.61246593
4/30/2009 14:11	1878.001	3.626609	22.258331	8.373728	0.61248341
4/30/2009 14:11	1879.001	3.627271	22.25882	8.375256	0.61259517
4/30/2009 14:11	1880.001	3.62815	22.263214	8.377286	0.61274365
4/30/2009 14:11	1881.001	3.626837	22.257416	8.374254	0.61252188
4/30/2009 14:11	1882.001	3.627323	22.256409	8.375377	0.61260402
4/30/2009 14:11	1883.001	3.626506	22.260803	8.373489	0.61246593
4/30/2009 14:11	1884.001	3.627821	22.259308	8.376526	0.61268806
4/30/2009 14:11	1885.001	3.626942	22.259827	8.374496	0.61253958
4/30/2009 14:11	1886.001	3.626891	22.26178	8.374379	0.61253102
4/30/2009 14:11	1887.001	3.627872	22.260284	8.376643	0.61269662
4/30/2009 14:11	1888.001	3.626994	22.257874	8.374617	0.61254843
4/30/2009 14:11	1889.001	3.627603	22.257874	8.376021	0.61265113
4/30/2009 14:11	1890.001	3.625066	22.259308	8.370165	0.6122228
4/30/2009 14:11	1891.001	3.627603	22.257416	8.376021	0.61265113
4/30/2009 14:11	1892.001	3.627718	22.259308	8.376288	0.61267066
4/30/2009 14:11	1893.001	3.625679	22.256897	8.37158	0.6123263

4/30/2009 14:11	1894.001	3.625843	22.25882	8.37196	0.61235409
4/30/2009 14:11	1895.001	3.627442	22.259308	8.375651	0.61262406
4/30/2009 14:11	1896.001	3.625127	22.25882	8.370306	0.61223311
4/30/2009 14:11	1897.001	3.627656	22.258331	8.376145	0.6126602
4/30/2009 14:11	1898.001	3.627821	22.256409	8.376526	0.61268806
4/30/2009 14:11	1899.001	3.627442	22.256897	8.375651	0.61262406
4/30/2009 14:11	1900.001	3.625013	22.257416	8.370044	0.61221395
4/30/2009 14:11	1901.001	3.627048	22.257874	8.37474	0.61255743
4/30/2009 14:11	1902.001	3.627718	22.257874	8.376288	0.61267066
4/30/2009 14:11	1903.001	3.626722	22.255402	8.37399	0.61250257
4/30/2009 14:11	1904.001	3.627323	22.256897	8.375377	0.61260402
4/30/2009 14:11	1905.001	3.625066	22.257874	8.370165	0.6122228
4/30/2009 14:11	1906.001	3.62601	22.257874	8.372345	0.61238225
4/30/2009 14:11	1907.001	3.628483	22.255402	8.378055	0.6127999
4/30/2009 14:11	1908.001	3.626171	22.259308	8.372717	0.61240946
4/30/2009 14:11	1909.001	3.626171	22.257416	8.372717	0.61240946
4/30/2009 14:11	1910.001	3.626337	22.253479	8.373099	0.6124374
4/30/2009 14:11	1911.001	3.626554	22.257874	8.373602	0.61247419
4/30/2009 14:11	1912.001	3.626554	22.254944	8.373602	0.61247419
4/30/2009 14:11	1913.001	3.626891	22.256409	8.374379	0.61253102
4/30/2009 14:11	1914.001	3.627718	22.257416	8.376288	0.61267066
4/30/2009 14:11	1915.001	3.627932	22.257416	8.376781	0.61270672
4/30/2009 14:11	1916.001	3.626994	22.256897	8.374617	0.61254843
4/30/2009 14:11	1917.001	3.627323	22.256409	8.375377	0.61260402
4/30/2009 14:11	1918.001	3.628644	22.257416	8.378427	0.61282711
4/30/2009 14:11	1919.001	3.626994	22.253967	8.374617	0.61254843
4/30/2009 14:12	1920.001	3.627872	22.254944	8.376643	0.61269662
4/30/2009 14:12	1921.001	3.627106	22.255402	8.374875	0.6125673
4/30/2009 14:12	1922.001	3.627379	22.257416	8.375506	0.61261346
4/30/2009 14:12	1923.001	3.628094	22.256897	8.377156	0.61273414
4/30/2009 14:12	1924.001	3.629527	22.254944	8.380466	0.61297625
4/30/2009 14:12	1925.001	3.628261	22.257874	8.377542	0.61276238
4/30/2009 14:12	1926.001	3.62749	22.25589	8.375762	0.61263218
4/30/2009 14:12	1927.001	3.628593	22.256897	8.37831	0.61281855
4/30/2009 14:12	1928.001	3.627932	22.259308	8.376781	0.61270672
4/30/2009 14:12	1929.001	3.626672	22.256409	8.373872	0.61249394
4/30/2009 14:12	1930.001	3.626064	22.257874	8.37247	0.61239139
4/30/2009 14:12	1931.001	3.627988	22.255402	8.376911	0.61271622
4/30/2009 14:12	1932.001	3.628094	22.254944	8.377156	0.61273414
4/30/2009 14:12	1933.001	3.627821	22.256409	8.376526	0.61268806
4/30/2009 14:12	1934.001	3.626994	22.256897	8.374617	0.61254843
4/30/2009 14:12	1935.001	3.628483	22.255402	8.378055	0.6127999
4/30/2009 14:12	1936.001	3.626722	22.258331	8.37399	0.61250257
4/30/2009 14:12	1937.001	3.627656	22.257416	8.376145	0.6126602
4/30/2009 14:12	1938.001	3.629196	22.25589	8.379702	0.61292037
4/30/2009 14:12	1939.001	3.62815	22.25589	8.377286	0.61274365
4/30/2009 14:12	1940.001	3.628705	22.254486	8.378567	0.61283735
4/30/2009 14:12	1941.001	3.628094	22.25589	8.377156	0.61273414
4/30/2009 14:12	1942.001	3.627048	22.256409	8.37474	0.61255743
4/30/2009 14:12	1943.001	3.628429	22.255402	8.377931	0.61279083
4/30/2009 14:12	1944.001	3.628317	22.25589	8.377671	0.61277181
4/30/2009 14:12	1945.001	3.627106	22.25589	8.374875	0.6125673
4/30/2009 14:12	1946.001	3.628759	22.252991	8.378693	0.61284657
4/30/2009 14:12	1947.001	3.628705	22.255402	8.378567	0.61283735

4/30/2009 14:12	1948.001	3.628317	22.256409	8.377671	0.61277181
4/30/2009 14:12	1949.001	3.626506	22.254944	8.373489	0.61246593
4/30/2009 14:12	1950.001	3.627656	22.254486	8.376145	0.6126602
4/30/2009 14:12	1951.001	3.627442	22.25589	8.375651	0.61262406
4/30/2009 14:12	1952.001	3.627106	22.253967	8.374875	0.6125673
4/30/2009 14:12	1953.001	3.628204	22.252991	8.377412	0.61275287
4/30/2009 14:12	1954.001	3.628705	22.255402	8.378567	0.61283735
4/30/2009 14:12	1955.001	3.628593	22.257416	8.37831	0.61281855
4/30/2009 14:12	1956.001	3.626722	22.253967	8.37399	0.61250257
4/30/2009 14:12	1957.001	3.627442	22.254944	8.375651	0.61262406
4/30/2009 14:12	1958.001	3.628816	22.253967	8.378823	0.61285607
4/30/2009 14:12	1959.001	3.628204	22.253479	8.377412	0.61275287
4/30/2009 14:12	1960.001	3.627932	22.25589	8.376781	0.61270672
4/30/2009 14:12	1961.001	3.628261	22.255402	8.377542	0.61276238
4/30/2009 14:12	1962.001	3.628547	22.253479	8.378201	0.61281058
4/30/2009 14:12	1963.001	3.627545	22.253967	8.375891	0.61264162
4/30/2009 14:12	1964.001	3.628261	22.252502	8.377542	0.61276238
4/30/2009 14:12	1965.001	3.628047	22.252502	8.377048	0.61272624
4/30/2009 14:12	1966.001	3.627603	22.252502	8.376021	0.61265113
4/30/2009 14:12	1967.001	3.628816	22.255402	8.378823	0.61285607
4/30/2009 14:12	1968.001	3.628593	22.253479	8.37831	0.61281855
4/30/2009 14:12	1969.001	3.628377	22.252502	8.37781	0.61278198
4/30/2009 14:12	1970.001	3.628261	22.253479	8.377542	0.61276238
4/30/2009 14:12	1971.001	3.627545	22.252991	8.375891	0.61264162
4/30/2009 14:12	1972.001	3.627603	22.256409	8.376021	0.61265113
4/30/2009 14:12	1973.001	3.62892	22.254944	8.379063	0.61287363
4/30/2009 14:12	1974.001	3.627545	22.253967	8.375891	0.61264162
4/30/2009 14:12	1975.001	3.629254	22.252014	8.379836	0.61293017
4/30/2009 14:12	1976.001	3.629084	22.254486	8.379441	0.61290128
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4/30/2009 14:12	1978.001	3.627988	22.252991	8.376911	0.61271622
4/30/2009 14:12	1979.001	3.628317	22.25589	8.377671	0.61277181
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4/30/2009 14:13	1981.001	3.62892	22.255402	8.379063	0.61287363
4/30/2009 14:13	1982.001	3.628204	22.254486	8.377412	0.61275287
4/30/2009 14:13	1983.001	3.628377	22.252502	8.37781	0.61278198
4/30/2009 14:13	1984.001	3.627545	22.252502	8.375891	0.61264162
4/30/2009 14:13	1985.001	3.628644	22.252014	8.378427	0.61282711
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4/30/2009 14:13	1987.001	3.627048	22.252991	8.37474	0.61255743
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4/30/2009 14:13	1992.001	3.627988	22.253967	8.376911	0.61271622
4/30/2009 14:13	1993.001	3.628204	22.253479	8.377412	0.61275287
4/30/2009 14:13	1994.001	3.626228	22.253479	8.372849	0.61241912
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4/30/2009 14:13	1997.001	3.627603	22.253479	8.376021	0.61265113
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4/30/2009 14:13	2005.001	3.627821	22.251068	8.376526	0.61268806
4/30/2009 14:13	2006.001	3.626837	22.251526	8.374254	0.61252188
4/30/2009 14:13	2007.001	3.627106	22.253967	8.374875	0.6125673
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4/30/2009 14:13	2024.001	3.62749	22.252014	8.375762	0.61263218
4/30/2009 14:13	2025.001	3.628047	22.252991	8.377048	0.61272624
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4/30/2009 14:13	2027.001	3.628547	22.252502	8.378201	0.61281058
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4/30/2009 14:13	2033.001	3.628204	22.251526	8.377412	0.61275287
4/30/2009 14:13	2034.001	3.628547	22.251526	8.378201	0.61281058
4/30/2009 14:13	2035.001	3.627656	22.249115	8.376145	0.6126602
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4/30/2009 14:14	2045.001	3.629364	22.250092	8.38009	0.61294875
4/30/2009 14:14	2046.001	3.62749	22.249115	8.375762	0.61263218
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4/30/2009 14:14	2049.001	3.629364	22.252991	8.38009	0.61294875
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4/30/2009 14:14	2054.001	3.628705	22.249115	8.378567	0.61283735
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4/30/2009 14:14	2070.001	3.626837	22.25058	8.374254	0.61252188
4/30/2009 14:14	2071.001	3.627603	22.251526	8.376021	0.61265113
4/30/2009 14:14	2072.001	3.627656	22.250092	8.376145	0.6126602
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4/30/2009 14:14	2074.001	3.627545	22.251068	8.375891	0.61264162
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4/30/2009 14:14	2076.001	3.628094	22.251068	8.377156	0.61273414
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4/30/2009 14:14	2081.001	3.627106	22.24765	8.374875	0.6125673
4/30/2009 14:14	2082.001	3.627718	22.250092	8.376288	0.61267066
4/30/2009 14:14	2083.001	3.628593	22.251068	8.37831	0.61281855
4/30/2009 14:14	2084.001	3.626942	22.252014	8.374496	0.61253958
4/30/2009 14:14	2085.001	3.62815	22.24765	8.377286	0.61274365
4/30/2009 14:14	2086.001	3.629471	22.251068	8.380335	0.61296667
4/30/2009 14:14	2087.001	3.628204	22.249115	8.377412	0.61275287
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4/30/2009 14:14	2090.001	3.627656	22.249603	8.376145	0.6126602
4/30/2009 14:14	2091.001	3.628705	22.249603	8.378567	0.61283735
4/30/2009 14:14	2092.001	3.628047	22.249115	8.377048	0.61272624
4/30/2009 14:14	2093.001	3.629644	22.248627	8.380736	0.612996
4/30/2009 14:14	2094.001	3.627106	22.249115	8.374875	0.6125673
4/30/2009 14:14	2095.001	3.629311	22.249603	8.379966	0.61293968
4/30/2009 14:14	2096.001	3.627442	22.249115	8.375651	0.61262406
4/30/2009 14:14	2097.001	3.629196	22.249603	8.379702	0.61292037
4/30/2009 14:14	2098.001	3.627271	22.248627	8.375256	0.61259517
4/30/2009 14:14	2099.001	3.627656	22.248627	8.376145	0.6126602
4/30/2009 14:15	2100.001	3.628047	22.251068	8.377048	0.61272624
4/30/2009 14:15	2101.001	3.628981	22.248138	8.379204	0.61288394
4/30/2009 14:15	2102.001	3.62749	22.251526	8.375762	0.61263218
4/30/2009 14:15	2103.001	3.626786	22.25058	8.374138	0.6125134
4/30/2009 14:15	2104.001	3.628261	22.249603	8.377542	0.61276238
4/30/2009 14:15	2105.001	3.626942	22.246704	8.374496	0.61253958
4/30/2009 14:15	2106.001	3.628047	22.249115	8.377048	0.61272624
4/30/2009 14:15	2107.001	3.627718	22.248138	8.376288	0.61267066
4/30/2009 14:15	2108.001	3.628981	22.250092	8.379204	0.61288394
4/30/2009 14:15	2109.001	3.627656	22.247192	8.376145	0.6126602

4/30/2009 14:15	2110.001	3.626672	22.249115	8.373872	0.61249394
4/30/2009 14:15	2111.001	3.627988	22.248627	8.376911	0.61271622
4/30/2009 14:15	2112.001	3.628547	22.24765	8.378201	0.61281058
4/30/2009 14:15	2113.001	3.62914	22.24765	8.379572	0.61291086
4/30/2009 14:15	2114.001	3.628593	22.248138	8.37831	0.61281855
4/30/2009 14:15	2115.001	3.628981	22.248138	8.379204	0.61288394
4/30/2009 14:15	2116.001	3.627213	22.24765	8.375121	0.6125853
4/30/2009 14:15	2117.001	3.628593	22.246704	8.37831	0.61281855
4/30/2009 14:15	2118.001	3.628593	22.249603	8.37831	0.61281855
4/30/2009 14:15	2119.001	3.629751	22.246216	8.380982	0.61301399
4/30/2009 14:15	2120.001	3.629471	22.248627	8.380335	0.61296667
4/30/2009 14:15	2121.001	3.629527	22.246216	8.380466	0.61297625
4/30/2009 14:15	2122.001	3.628593	22.250092	8.37831	0.61281855
4/30/2009 14:15	2123.001	3.628429	22.24765	8.377931	0.61279083
4/30/2009 14:15	2124.001	3.62914	22.249115	8.379572	0.61291086
4/30/2009 14:15	2125.001	3.628759	22.24765	8.378693	0.61284657
4/30/2009 14:15	2126.001	3.629751	22.248627	8.380982	0.61301399
4/30/2009 14:15	2127.001	3.629644	22.24765	8.380736	0.612996
4/30/2009 14:15	2128.001	3.628483	22.245239	8.378055	0.6127999
4/30/2009 14:15	2129.001	3.628094	22.250092	8.377156	0.61273414
4/30/2009 14:15	2130.001	3.627821	22.245239	8.376526	0.61268806
4/30/2009 14:15	2131.001	3.630079	22.248627	8.381741	0.61306951
4/30/2009 14:15	2132.001	3.629084	22.248627	8.379441	0.61290128
4/30/2009 14:15	2133.001	3.628377	22.248138	8.37781	0.61278198
4/30/2009 14:15	2134.001	3.630904	22.24765	8.383645	0.61320877
4/30/2009 14:15	2135.001	3.62892	22.249603	8.379063	0.61287363
4/30/2009 14:15	2136.001	3.628204	22.244751	8.377412	0.61275287
4/30/2009 14:15	2137.001	3.629031	22.24765	8.37932	0.61289243
4/30/2009 14:15	2138.001	3.628547	22.247192	8.378201	0.61281058
4/30/2009 14:15	2139.001	3.62892	22.245728	8.379063	0.61287363
4/30/2009 14:15	2140.001	3.628981	22.247192	8.379204	0.61288394
4/30/2009 14:15	2141.001	3.628816	22.245239	8.378823	0.61285607
4/30/2009 14:15	2142.001	3.629471	22.249115	8.380335	0.61296667
4/30/2009 14:15	2143.001	3.631178	22.246216	8.384277	0.613255
4/30/2009 14:15	2144.001	3.62914	22.246216	8.379572	0.61291086
4/30/2009 14:15	2145.001	3.628868	22.246704	8.378944	0.61286492
4/30/2009 14:15	2146.001	3.62892	22.248627	8.379063	0.61287363
4/30/2009 14:15	2147.001	3.629031	22.244751	8.37932	0.61289243
4/30/2009 14:15	2148.001	3.628429	22.248627	8.377931	0.61279083
4/30/2009 14:15	2149.001	3.628816	22.248138	8.378823	0.61285607
4/30/2009 14:15	2150.001	3.627271	22.24765	8.375256	0.61259517
4/30/2009 14:15	2151.001	3.627545	22.245728	8.375891	0.61264162
4/30/2009 14:15	2152.001	3.630576	22.247192	8.382888	0.6131534
4/30/2009 14:15	2153.001	3.62892	22.247192	8.379063	0.61287363
4/30/2009 14:15	2154.001	3.627932	22.249115	8.376781	0.61270672
4/30/2009 14:15	2155.001	3.628483	22.244751	8.378055	0.6127999
4/30/2009 14:15	2156.001	3.628759	22.248138	8.378693	0.61284657
4/30/2009 14:15	2157.001	3.628816	22.24765	8.378823	0.61285607
4/30/2009 14:15	2158.001	3.627988	22.247192	8.376911	0.61271622
4/30/2009 14:15	2159.001	3.629084	22.245239	8.379441	0.61290128
4/30/2009 14:16	2160.001	3.629254	22.246216	8.379836	0.61293017
4/30/2009 14:16	2161.001	3.629903	22.245728	8.381333	0.61303966
4/30/2009 14:16	2162.001	3.629695	22.245239	8.380853	0.61300456
4/30/2009 14:16	2163.001	3.630466	22.248138	8.382632	0.61313468

4/30/2009 14:16	2164.001	3.631787	22.246704	8.385684	0.61335791
4/30/2009 14:16	2165.001	3.631729	22.247192	8.38555	0.61334811
4/30/2009 14:16	2166.001	3.630408	22.244751	8.3825	0.61312502
4/30/2009 14:16	2167.001	3.630904	22.246704	8.383645	0.61320877
4/30/2009 14:16	2168.001	3.629751	22.24765	8.380982	0.61301399
4/30/2009 14:16	2169.001	3.630792	22.245239	8.383386	0.61318983
4/30/2009 14:16	2170.001	3.628759	22.245239	8.378693	0.61284657
4/30/2009 14:16	2171.001	3.630517	22.247192	8.382751	0.61314338
4/30/2009 14:16	2172.001	3.628483	22.246216	8.378055	0.6127999
4/30/2009 14:16	2173.001	3.629364	22.246704	8.38009	0.61294875
4/30/2009 14:16	2174.001	3.629807	22.246216	8.381112	0.6130235
4/30/2009 14:16	2175.001	3.628429	22.245728	8.377931	0.61279083
4/30/2009 14:16	2176.001	3.629471	22.246704	8.380335	0.61296667
4/30/2009 14:16	2177.001	3.628547	22.245728	8.378201	0.61281058
4/30/2009 14:16	2178.001	3.629031	22.246216	8.37932	0.61289243
4/30/2009 14:16	2179.001	3.630134	22.245728	8.381866	0.61307865
4/30/2009 14:16	2180.001	3.630352	22.245728	8.38237	0.61311551
4/30/2009 14:16	2181.001	3.629852	22.245239	8.381216	0.61303111
4/30/2009 14:16	2182.001	3.630517	22.246216	8.382751	0.61314338
4/30/2009 14:16	2183.001	3.62892	22.243805	8.379063	0.61287363
4/30/2009 14:16	2184.001	3.628204	22.247192	8.377412	0.61275287
4/30/2009 14:16	2185.001	3.629084	22.244751	8.379441	0.61290128
4/30/2009 14:16	2186.001	3.628868	22.244232	8.378944	0.61286492
4/30/2009 14:16	2187.001	3.629587	22.244232	8.380605	0.61298642
4/30/2009 14:16	2188.001	3.630241	22.245239	8.382115	0.61309686
4/30/2009 14:16	2189.001	3.629254	22.245239	8.379836	0.61293017
4/30/2009 14:16	2190.001	3.630188	22.245239	8.381991	0.61308779
4/30/2009 14:16	2191.001	3.629695	22.245239	8.380853	0.61300456
4/30/2009 14:16	2192.001	3.629031	22.245728	8.37932	0.61289243
4/30/2009 14:16	2193.001	3.62914	22.243805	8.379572	0.61291086
4/30/2009 14:16	2194.001	3.629311	22.243805	8.379966	0.61293968
4/30/2009 14:16	2195.001	3.627633	22.243805	8.376092	0.61265632
4/30/2009 14:16	2196.001	3.629364	22.246704	8.38009	0.61294875
4/30/2009 14:16	2197.001	3.629031	22.244751	8.37932	0.61289243
4/30/2009 14:16	2198.001	3.628705	22.246704	8.378567	0.61283735
4/30/2009 14:16	2199.001	3.628429	22.244751	8.377931	0.61279083
4/30/2009 14:16	2200.001	3.628429	22.245239	8.377931	0.61279083
4/30/2009 14:16	2201.001	3.627379	22.243805	8.375506	0.61261346
4/30/2009 14:16	2202.001	3.630292	22.246216	8.382232	0.61310542
4/30/2009 14:16	2203.001	3.628705	22.243317	8.378567	0.61283735
4/30/2009 14:16	2204.001	3.629644	22.249115	8.380736	0.612996
4/30/2009 14:16	2205.001	3.629644	22.245239	8.380736	0.612996
4/30/2009 14:16	2206.001	3.630188	22.243317	8.381991	0.61308779
4/30/2009 14:16	2207.001	3.628816	22.242828	8.378823	0.61285607
4/30/2009 14:16	2208.001	3.630241	22.241333	8.382115	0.61309686
4/30/2009 14:16	2209.001	3.629695	22.243805	8.380853	0.61300456
4/30/2009 14:16	2210.001	3.629695	22.244232	8.380853	0.61300456
4/30/2009 14:16	2211.001	3.630241	22.243805	8.382115	0.61309686
4/30/2009 14:16	2212.001	3.629751	22.244751	8.380982	0.61301399
4/30/2009 14:16	2213.001	3.630517	22.244232	8.382751	0.61314338
4/30/2009 14:16	2214.001	3.630188	22.245239	8.381991	0.61308779
4/30/2009 14:16	2215.001	3.630079	22.243317	8.381741	0.61306951
4/30/2009 14:16	2216.001	3.630188	22.240845	8.381991	0.61308779
4/30/2009 14:16	2217.001	3.629967	22.243317	8.381481	0.61305049

4/30/2009 14:16	2218.001	3.628759	22.245728	8.378693	0.61284657
4/30/2009 14:16	2219.001	3.627379	22.244751	8.375506	0.61261346
4/30/2009 14:17	2220.001	3.62914	22.245239	8.379572	0.61291086
4/30/2009 14:17	2221.001	3.628644	22.245728	8.378427	0.61282711
4/30/2009 14:17	2222.001	3.629471	22.244232	8.380335	0.61296667
4/30/2009 14:17	2223.001	3.630679	22.244232	8.383126	0.61317081
4/30/2009 14:17	2224.001	3.629084	22.247192	8.379441	0.61290128
4/30/2009 14:17	2225.001	3.630576	22.245728	8.382888	0.6131534
4/30/2009 14:17	2226.001	3.629311	22.243317	8.379966	0.61293968
4/30/2009 14:17	2227.001	3.629471	22.246704	8.380335	0.61296667
4/30/2009 14:17	2228.001	3.629364	22.245728	8.38009	0.61294875
4/30/2009 14:17	2229.001	3.630679	22.243317	8.383126	0.61317081
4/30/2009 14:17	2230.001	3.628317	22.244751	8.377671	0.61277181
4/30/2009 14:17	2231.001	3.629471	22.243805	8.380335	0.61296667
4/30/2009 14:17	2232.001	3.629967	22.245728	8.381481	0.61305049
4/30/2009 14:17	2233.001	3.630352	22.243317	8.38237	0.61311551
4/30/2009 14:17	2234.001	3.629254	22.246216	8.379836	0.61293017
4/30/2009 14:17	2235.001	3.629852	22.243317	8.381216	0.61303111
4/30/2009 14:17	2236.001	3.630844	22.243317	8.383507	0.61319868
4/30/2009 14:17	2237.001	3.630188	22.241333	8.381991	0.61308779
4/30/2009 14:17	2238.001	3.628759	22.240387	8.378693	0.61284657
4/30/2009 14:17	2239.001	3.627851	22.24234	8.376595	0.61269311
4/30/2009 14:17	2240.001	3.630904	22.243805	8.383645	0.61320877
4/30/2009 14:17	2241.001	3.628261	22.243317	8.377542	0.61276238
4/30/2009 14:17	2242.001	3.629311	22.243805	8.379966	0.61293968
4/30/2009 14:17	2243.001	3.629644	22.244232	8.380736	0.612996
4/30/2009 14:17	2244.001	3.629751	22.244232	8.380982	0.61301399
4/30/2009 14:17	2245.001	3.630241	22.244751	8.382115	0.61309686
4/30/2009 14:17	2246.001	3.628759	22.243317	8.378693	0.61284657
4/30/2009 14:17	2247.001	3.629751	22.243317	8.380982	0.61301399
4/30/2009 14:17	2248.001	3.629418	22.242828	8.380215	0.61295789
4/30/2009 14:17	2249.001	3.630904	22.24234	8.383645	0.61320877
4/30/2009 14:17	2250.001	3.630352	22.243317	8.38237	0.61311551
4/30/2009 14:17	2251.001	3.628547	22.243317	8.378201	0.61281058
4/30/2009 14:17	2252.001	3.629644	22.24234	8.380736	0.612996
4/30/2009 14:17	2253.001	3.630134	22.243805	8.381866	0.61307865
4/30/2009 14:17	2254.001	3.629967	22.241333	8.381481	0.61305049
4/30/2009 14:17	2255.001	3.628204	22.239899	8.377412	0.61275287
4/30/2009 14:17	2256.001	3.630408	22.242828	8.3825	0.61312502
4/30/2009 14:17	2257.001	3.629527	22.242828	8.380466	0.61297625
4/30/2009 14:17	2258.001	3.630134	22.242828	8.381866	0.61307865
4/30/2009 14:17	2259.001	3.629084	22.243805	8.379441	0.61290128
4/30/2009 14:17	2260.001	3.628981	22.240845	8.379204	0.61288394
4/30/2009 14:17	2261.001	3.62892	22.242828	8.379063	0.61287363
4/30/2009 14:17	2262.001	3.62914	22.242828	8.379572	0.61291086
4/30/2009 14:17	2263.001	3.628868	22.240387	8.378944	0.61286492
4/30/2009 14:17	2264.001	3.629903	22.242828	8.381333	0.61303966
4/30/2009 14:17	2265.001	3.627767	22.240845	8.3764	0.61267885
4/30/2009 14:17	2266.001	3.628516	22.241333	8.378132	0.61280553
4/30/2009 14:17	2267.001	3.628816	22.24234	8.378823	0.61285607
4/30/2009 14:17	2268.001	3.627821	22.242828	8.376526	0.61268806
4/30/2009 14:17	2269.001	3.629311	22.241333	8.379966	0.61293968
4/30/2009 14:17	2270.001	3.628981	22.242828	8.379204	0.61288394
4/30/2009 14:17	2271.001	3.628759	22.241333	8.378693	0.61284657

4/30/2009 14:17	2272.001	3.630021	22.242828	8.381606	0.61305963
4/30/2009 14:17	2273.001	3.629084	22.24234	8.379441	0.61290128
4/30/2009 14:17	2274.001	3.628094	22.243805	8.377156	0.61273414
4/30/2009 14:17	2275.001	3.629084	22.239899	8.379441	0.61290128
4/30/2009 14:17	2276.001	3.62914	22.238892	8.379572	0.61291086
4/30/2009 14:17	2277.001	3.630021	22.244751	8.381606	0.61305963
4/30/2009 14:17	2278.001	3.630679	22.241821	8.383126	0.61317081
4/30/2009 14:17	2279.001	3.628047	22.242828	8.377048	0.61272624
4/30/2009 14:18	2280.001	3.629644	22.24234	8.380736	0.612996
4/30/2009 14:18	2281.001	3.629967	22.241821	8.381481	0.61305049
4/30/2009 14:18	2282.001	3.629254	22.239899	8.379836	0.61293017
4/30/2009 14:18	2283.001	3.628047	22.241821	8.377048	0.61272624
4/30/2009 14:18	2284.001	3.628816	22.241821	8.378823	0.61285607
4/30/2009 14:18	2285.001	3.629751	22.241333	8.380982	0.61301399
4/30/2009 14:18	2286.001	3.628705	22.241821	8.378567	0.61283735
4/30/2009 14:18	2287.001	3.629644	22.241333	8.380736	0.612996
4/30/2009 14:18	2288.001	3.627821	22.240845	8.376526	0.61268806
4/30/2009 14:18	2289.001	3.629084	22.240387	8.379441	0.61290128
4/30/2009 14:18	2290.001	3.629852	22.240387	8.381216	0.61303111
4/30/2009 14:18	2291.001	3.62815	22.24234	8.377286	0.61274365
4/30/2009 14:18	2292.001	3.62815	22.240845	8.377286	0.61274365
4/30/2009 14:18	2293.001	3.629644	22.24234	8.380736	0.612996
4/30/2009 14:18	2294.001	3.629852	22.24234	8.381216	0.61303111
4/30/2009 14:18	2295.001	3.630079	22.243317	8.381741	0.61306951
4/30/2009 14:18	2296.001	3.629852	22.239899	8.381216	0.61303111
4/30/2009 14:18	2297.001	3.629418	22.240387	8.380215	0.61295789
4/30/2009 14:18	2298.001	3.62716	22.24234	8.375	0.61257645
4/30/2009 14:18	2299.001	3.629031	22.24234	8.37932	0.61289243
4/30/2009 14:18	2300.001	3.629644	22.240387	8.380736	0.612996
4/30/2009 14:18	2301.001	3.630732	22.240845	8.383246	0.61317959
4/30/2009 14:18	2302.001	3.629471	22.240387	8.380335	0.61296667
4/30/2009 14:18	2303.001	3.630904	22.240845	8.383645	0.61320877
4/30/2009 14:18	2304.001	3.629695	22.241333	8.380853	0.61300456
4/30/2009 14:18	2305.001	3.628317	22.240387	8.377671	0.61277181
4/30/2009 14:18	2306.001	3.62914	22.243317	8.379572	0.61291086
4/30/2009 14:18	2307.001	3.628204	22.240845	8.377412	0.61275287
4/30/2009 14:18	2308.001	3.629695	22.239899	8.380853	0.61300456
4/30/2009 14:18	2309.001	3.629418	22.241333	8.380215	0.61295789
4/30/2009 14:18	2310.001	3.628868	22.241821	8.378944	0.61286492
4/30/2009 14:18	2311.001	3.629967	22.239899	8.381481	0.61305049
4/30/2009 14:18	2312.001	3.628816	22.240845	8.378823	0.61285607
4/30/2009 14:18	2313.001	3.629254	22.241821	8.379836	0.61293017
4/30/2009 14:18	2314.001	3.626942	22.241821	8.374496	0.61253958
4/30/2009 14:18	2315.001	3.629031	22.239899	8.37932	0.61289243
4/30/2009 14:18	2316.001	3.628047	22.240845	8.377048	0.61272624
4/30/2009 14:18	2317.001	3.63063	22.240387	8.383013	0.61316255
4/30/2009 14:18	2318.001	3.628816	22.240845	8.378823	0.61285607
4/30/2009 14:18	2319.001	3.628593	22.243317	8.37831	0.61281855
4/30/2009 14:18	2320.001	3.628547	22.240845	8.378201	0.61281058
4/30/2009 14:18	2321.001	3.628094	22.241821	8.377156	0.61273414
4/30/2009 14:18	2322.001	3.629751	22.240387	8.380982	0.61301399
4/30/2009 14:18	2323.001	3.626448	22.240387	8.373356	0.6124562
4/30/2009 14:18	2324.001	3.629196	22.23941	8.379702	0.61292037
4/30/2009 14:18	2325.001	3.628868	22.240845	8.378944	0.61286492

4/30/2009 14:18	2326.001	3.62815	22.238434	8.377286	0.61274365
4/30/2009 14:18	2327.001	3.629644	22.240387	8.380736	0.612996
4/30/2009 14:18	2328.001	3.629695	22.23941	8.380853	0.61300456
4/30/2009 14:18	2329.001	3.628429	22.238892	8.377931	0.61279083
4/30/2009 14:18	2330.001	3.63063	22.239899	8.383013	0.61316255
4/30/2009 14:18	2331.001	3.628377	22.240387	8.37781	0.61278198
4/30/2009 14:18	2332.001	3.631286	22.241821	8.384526	0.61327321
4/30/2009 14:18	2333.001	3.630188	22.240845	8.381991	0.61308779
4/30/2009 14:18	2334.001	3.628483	22.239899	8.378055	0.6127999
4/30/2009 14:18	2335.001	3.630732	22.237915	8.383246	0.61317959
4/30/2009 14:18	2336.001	3.630732	22.23941	8.383246	0.61317959
4/30/2009 14:18	2337.001	3.630904	22.238434	8.383645	0.61320877
4/30/2009 14:18	2338.001	3.63063	22.238892	8.383013	0.61316255
4/30/2009 14:18	2339.001	3.629644	22.24234	8.380736	0.612996
4/30/2009 14:19	2340.001	3.630241	22.237915	8.382115	0.61309686
4/30/2009 14:19	2341.001	3.629471	22.240387	8.380335	0.61296667
4/30/2009 14:19	2342.001	3.629418	22.240845	8.380215	0.61295789
4/30/2009 14:19	2343.001	3.630079	22.23941	8.381741	0.61306951
4/30/2009 14:19	2344.001	3.62892	22.238892	8.379063	0.61287363
4/30/2009 14:19	2345.001	3.630962	22.23941	8.38378	0.61321865
4/30/2009 14:19	2346.001	3.629644	22.23941	8.380736	0.612996
4/30/2009 14:19	2347.001	3.629903	22.240845	8.381333	0.61303966
4/30/2009 14:19	2348.001	3.631016	22.240387	8.383903	0.61322764
4/30/2009 14:19	2349.001	3.629852	22.239899	8.381216	0.61303111
4/30/2009 14:19	2350.001	3.629196	22.23941	8.379702	0.61292037
4/30/2009 14:19	2351.001	3.630732	22.240387	8.383246	0.61317959
4/30/2009 14:19	2352.001	3.629084	22.240387	8.379441	0.61290128
4/30/2009 14:19	2353.001	3.629967	22.23941	8.381481	0.61305049
4/30/2009 14:19	2354.001	3.628204	22.236481	8.377412	0.61275287
4/30/2009 14:19	2355.001	3.629903	22.23941	8.381333	0.61303966
4/30/2009 14:19	2356.001	3.630241	22.236481	8.382115	0.61309686
4/30/2009 14:19	2357.001	3.629471	22.241821	8.380335	0.61296667
4/30/2009 14:19	2358.001	3.629967	22.240845	8.381481	0.61305049
4/30/2009 14:19	2359.001	3.629031	22.238434	8.37932	0.61289243
4/30/2009 14:19	2360.001	3.630188	22.238434	8.381991	0.61308779
4/30/2009 14:19	2361.001	3.630188	22.238892	8.381991	0.61308779
4/30/2009 14:19	2362.001	3.629967	22.237915	8.381481	0.61305049
4/30/2009 14:19	2363.001	3.629807	22.238892	8.381112	0.6130235
4/30/2009 14:19	2364.001	3.629967	22.237915	8.381481	0.61305049
4/30/2009 14:19	2365.001	3.629587	22.237915	8.380605	0.61298642
4/30/2009 14:19	2366.001	3.630466	22.235016	8.382632	0.61313468
4/30/2009 14:19	2367.001	3.630517	22.23941	8.382751	0.61314338
4/30/2009 14:19	2368.001	3.629903	22.240387	8.381333	0.61303966
4/30/2009 14:19	2369.001	3.630408	22.237915	8.3825	0.61312502
4/30/2009 14:19	2370.001	3.629364	22.238892	8.38009	0.61294875
4/30/2009 14:19	2371.001	3.629311	22.238892	8.379966	0.61293968
4/30/2009 14:19	2372.001	3.626891	22.238434	8.374379	0.61253102
4/30/2009 14:19	2373.001	3.628483	22.237457	8.378055	0.6127999
4/30/2009 14:19	2374.001	3.629418	22.238892	8.380215	0.61295789
4/30/2009 14:19	2375.001	3.629587	22.236481	8.380605	0.61298642
4/30/2009 14:19	2376.001	3.629364	22.235504	8.38009	0.61294875
4/30/2009 14:19	2377.001	3.629471	22.236481	8.380335	0.61296667
4/30/2009 14:19	2378.001	3.628981	22.238892	8.379204	0.61288394
4/30/2009 14:19	2379.001	3.629807	22.238892	8.381112	0.6130235

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4/30/2009 14:19	2382.001	3.629751	22.235504	8.380982	0.61301399
4/30/2009 14:19	2383.001	3.627988	22.236481	8.376911	0.61271622
4/30/2009 14:19	2384.001	3.630352	22.236481	8.38237	0.61311551
4/30/2009 14:19	2385.001	3.629311	22.23941	8.379966	0.61293968
4/30/2009 14:19	2386.001	3.629903	22.236481	8.381333	0.61303966
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4/30/2009 14:19	2388.001	3.628094	22.235504	8.377156	0.61273414
4/30/2009 14:19	2389.001	3.631016	22.239899	8.383903	0.61322764
4/30/2009 14:19	2390.001	3.629254	22.237457	8.379836	0.61293017
4/30/2009 14:19	2391.001	3.630352	22.240387	8.38237	0.61311551
4/30/2009 14:19	2392.001	3.630021	22.238434	8.381606	0.61305963
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4/30/2009 14:19	2395.001	3.62914	22.238892	8.379572	0.61291086
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4/30/2009 14:20	2404.001	3.628981	22.237915	8.379204	0.61288394
4/30/2009 14:20	2405.001	3.630021	22.235992	8.381606	0.61305963
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4/30/2009 14:20	2407.001	3.630241	22.236969	8.382115	0.61309686
4/30/2009 14:20	2408.001	3.629967	22.240387	8.381481	0.61305049
4/30/2009 14:20	2409.001	3.630517	22.238892	8.382751	0.61314338
4/30/2009 14:20	2410.001	3.628816	22.236969	8.378823	0.61285607
4/30/2009 14:20	2411.001	3.630079	22.237457	8.381741	0.61306951
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4/30/2009 14:20	2413.001	3.63112	22.235504	8.384143	0.6132452
4/30/2009 14:20	2414.001	3.630732	22.237457	8.383246	0.61317959
4/30/2009 14:20	2415.001	3.630679	22.238434	8.383126	0.61317081
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4/30/2009 14:20	2418.001	3.629418	22.236969	8.380215	0.61295789
4/30/2009 14:20	2419.001	3.628593	22.235504	8.37831	0.61281855
4/30/2009 14:20	2420.001	3.629751	22.236481	8.380982	0.61301399
4/30/2009 14:20	2421.001	3.629418	22.23941	8.380215	0.61295789
4/30/2009 14:20	2422.001	3.630079	22.236969	8.381741	0.61306951
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4/30/2009 14:20	2427.001	3.629196	22.238434	8.379702	0.61292037
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4/30/2009 14:20	2430.001	3.63063	22.236969	8.383013	0.61316255
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4/30/2009 14:20	2444.001	3.631016	22.234528	8.383903	0.61322764
4/30/2009 14:20	2445.001	3.630079	22.236969	8.381741	0.61306951
4/30/2009 14:20	2446.001	3.630466	22.235992	8.382632	0.61313468
4/30/2009 14:20	2447.001	3.630292	22.233551	8.382232	0.61310542
4/30/2009 14:20	2448.001	3.630021	22.238434	8.381606	0.61305963
4/30/2009 14:20	2449.001	3.631067	22.235016	8.384022	0.61323635
4/30/2009 14:20	2450.001	3.631787	22.237915	8.385684	0.61335791
4/30/2009 14:20	2451.001	3.632384	22.233551	8.387063	0.61345878
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4/30/2009 14:20	2453.001	3.632338	22.233063	8.386954	0.6134508
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4/30/2009 14:20	2456.001	3.631286	22.235504	8.384526	0.61327321
4/30/2009 14:20	2457.001	3.632665	22.234528	8.387711	0.61350617
4/30/2009 14:20	2458.001	3.628705	22.237457	8.378567	0.61283735
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4/30/2009 14:21	2461.001	3.629967	22.235992	8.381481	0.61305049
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4/30/2009 14:21	2464.001	3.630292	22.236969	8.382232	0.61310542
4/30/2009 14:21	2465.001	3.63212	22.234039	8.386453	0.61341416
4/30/2009 14:21	2466.001	3.630021	22.232605	8.381606	0.61305963
4/30/2009 14:21	2467.001	3.630962	22.235992	8.38378	0.61321865
4/30/2009 14:21	2468.001	3.631016	22.237457	8.383903	0.61322764
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4/30/2009 14:21	2470.001	3.631342	22.233551	8.384656	0.61328272
4/30/2009 14:21	2471.001	3.629418	22.235016	8.380215	0.61295789
4/30/2009 14:21	2472.001	3.629471	22.236969	8.380335	0.61296667
4/30/2009 14:21	2473.001	3.630241	22.235992	8.382115	0.61309686
4/30/2009 14:21	2474.001	3.630241	22.234528	8.382115	0.61309686
4/30/2009 14:21	2475.001	3.630732	22.235504	8.383246	0.61317959
4/30/2009 14:21	2476.001	3.630517	22.236481	8.382751	0.61314338
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4/30/2009 14:21	2480.001	3.630517	22.233551	8.382751	0.61314338
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4/30/2009 14:21	2486.001	3.631178	22.235016	8.384277	0.613255
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4/30/2009 14:21	2488.001	3.631398	22.233551	8.384786	0.61329223
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4/30/2009 14:21	2497.001	3.631567	22.235016	8.385176	0.61332075
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4/30/2009 14:21	2500.001	3.629903	22.235992	8.381333	0.61303966
4/30/2009 14:21	2501.001	3.631342	22.233551	8.384656	0.61328272
4/30/2009 14:21	2502.001	3.630352	22.232117	8.38237	0.61311551
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4/30/2009 14:21	2504.001	3.631286	22.233551	8.384526	0.61327321
4/30/2009 14:21	2505.001	3.630466	22.235504	8.382632	0.61313468
4/30/2009 14:21	2506.001	3.629695	22.235016	8.380853	0.61300456
4/30/2009 14:21	2507.001	3.630134	22.234528	8.381866	0.61307865
4/30/2009 14:21	2508.001	3.630408	22.237457	8.3825	0.61312502
4/30/2009 14:21	2509.001	3.631067	22.233551	8.384022	0.61323635
4/30/2009 14:21	2510.001	3.630732	22.234039	8.383246	0.61317959
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4/30/2009 14:21	2512.001	3.632061	22.233063	8.386316	0.61340414
4/30/2009 14:21	2513.001	3.630962	22.233063	8.38378	0.61321865
4/30/2009 14:21	2514.001	3.631618	22.232605	8.385295	0.61332946
4/30/2009 14:21	2515.001	3.630292	22.234528	8.382232	0.61310542
4/30/2009 14:21	2516.001	3.631178	22.234528	8.384277	0.613255
4/30/2009 14:21	2517.001	3.631226	22.234528	8.384388	0.61326312
4/30/2009 14:21	2518.001	3.631342	22.232117	8.384656	0.61328272
4/30/2009 14:21	2519.001	3.631178	22.232117	8.384277	0.613255
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4/30/2009 14:22	2521.001	3.631178	22.233063	8.384277	0.613255
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4/30/2009 14:22	2523.001	3.63063	22.231628	8.383013	0.61316255
4/30/2009 14:22	2524.001	3.629311	22.233551	8.379966	0.61293968
4/30/2009 14:22	2525.001	3.631684	22.233551	8.385447	0.61334058
4/30/2009 14:22	2526.001	3.631016	22.232605	8.383903	0.61322764
4/30/2009 14:22	2527.001	3.631729	22.234039	8.38555	0.61334811
4/30/2009 14:22	2528.001	3.631454	22.233063	8.384915	0.61330166
4/30/2009 14:22	2529.001	3.630352	22.233063	8.38237	0.61311551
4/30/2009 14:22	2530.001	3.629695	22.231628	8.380853	0.61300456
4/30/2009 14:22	2531.001	3.63112	22.233551	8.384143	0.6132452
4/30/2009 14:22	2532.001	3.631398	22.231628	8.384786	0.61329223
4/30/2009 14:22	2533.001	3.631067	22.234528	8.384022	0.61323635
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4/30/2009 14:22	2555.001	3.631398	22.232117	8.384786	0.61329223
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4/30/2009 14:22	2561.001	3.63063	22.232605	8.383013	0.61316255
4/30/2009 14:22	2562.001	3.629311	22.233551	8.379966	0.61293968
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4/30/2009 14:25	2732.001	3.630576	22.226776	8.382888	0.6131534
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4/30/2009 14:29	2943.001	3.631567	22.220947	8.385176	0.61332075
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4/30/2009 15:01	4863.001	3.70767	22.191315	8.560896	0.62617352

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4/30/2009 15:01	4865.001	3.70787	22.193237	8.561357	0.62620724
4/30/2009 15:01	4866.001	3.707942	22.191315	8.561522	0.62621931
4/30/2009 15:01	4867.001	3.706291	22.191315	8.557712	0.62594063
4/30/2009 15:01	4868.001	3.70914	22.190338	8.564289	0.6264217
4/30/2009 15:01	4869.001	3.707012	22.192291	8.559376	0.62606234
4/30/2009 15:01	4870.001	3.707335	22.191315	8.560122	0.62611691
4/30/2009 15:01	4871.001	3.707012	22.18985	8.559376	0.62606234
4/30/2009 15:01	4872.001	3.70969	22.191315	8.565559	0.62651459
4/30/2009 15:01	4873.001	3.707335	22.191803	8.560122	0.62611691
4/30/2009 15:01	4874.001	3.705857	22.192749	8.55671	0.62586734
4/30/2009 15:01	4875.001	3.70936	22.192291	8.564797	0.62645886
4/30/2009 15:01	4876.001	3.708333	22.190826	8.562426	0.62628543
4/30/2009 15:01	4877.001	3.708539	22.191315	8.562901	0.62632018
4/30/2009 15:01	4878.001	3.707289	22.191803	8.560015	0.62610908
4/30/2009 15:01	4879.001	3.7069	22.18985	8.559116	0.62604333
4/30/2009 15:01	4880.001	3.707818	22.190338	8.561237	0.62619846
4/30/2009 15:01	4881.001	3.708651	22.188416	8.563159	0.62633905
4/30/2009 15:01	4882.001	3.70727	22.192291	8.559971	0.62610587
4/30/2009 15:01	4883.001	3.707012	22.18985	8.559376	0.62606234
4/30/2009 15:01	4884.001	3.708982	22.18985	8.563926	0.62639515
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4/30/2009 15:01	4888.001	3.707783	22.191315	8.561156	0.62619254
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4/30/2009 15:01	4890.001	3.70684	22.188873	8.558977	0.62603316
4/30/2009 15:01	4891.001	3.706623	22.190826	8.558477	0.62599659
4/30/2009 15:01	4892.001	3.70707	22.191803	8.559511	0.62607222
4/30/2009 15:01	4893.001	3.70668	22.190338	8.55861	0.62600632
4/30/2009 15:01	4894.001	3.708156	22.194702	8.562016	0.62625544
4/30/2009 15:01	4895.001	3.708753	22.188873	8.563396	0.62635638
4/30/2009 15:01	4896.001	3.706462	22.190338	8.558106	0.62596945
4/30/2009 15:01	4897.001	3.708156	22.190338	8.562016	0.62625544
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4/30/2009 15:01	4899.001	3.706787	22.191803	8.558857	0.62602438
4/30/2009 15:01	4900.001	3.708697	22.191315	8.563267	0.62634695
4/30/2009 15:01	4901.001	3.709192	22.190338	8.56441	0.62643055
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4/30/2009 15:01	4908.001	3.708432	22.188873	8.562655	0.62630218
4/30/2009 15:01	4909.001	3.708042	22.186951	8.561754	0.62623628
4/30/2009 15:01	4910.001	3.706291	22.190826	8.557712	0.62594063
4/30/2009 15:01	4911.001	3.70707	22.191315	8.559511	0.62607222
4/30/2009 15:01	4912.001	3.706175	22.191315	8.557443	0.62592096
4/30/2009 15:01	4913.001	3.707558	22.190338	8.560636	0.62615451
4/30/2009 15:01	4914.001	3.7069	22.190826	8.559116	0.62604333
4/30/2009 15:01	4915.001	3.705912	22.188416	8.556835	0.62587649
4/30/2009 15:01	4916.001	3.70695	22.190338	8.559234	0.62605196
4/30/2009 15:01	4917.001	3.70711	22.190826	8.559604	0.62607902

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4/30/2009 15:01	4919.001	3.70613	22.190826	8.55734	0.62591342
4/30/2009 15:02	4920.001	3.705749	22.18985	8.556458	0.62584891
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4/30/2009 15:02	4922.001	3.706727	22.191315	8.558718	0.62601422
4/30/2009 15:02	4923.001	3.70613	22.191803	8.55734	0.62591342
4/30/2009 15:02	4924.001	3.706398	22.190826	8.557959	0.6259587
4/30/2009 15:02	4925.001	3.706778	22.190826	8.558835	0.62602277
4/30/2009 15:02	4926.001	3.70767	22.190826	8.560896	0.62617352
4/30/2009 15:02	4927.001	3.70695	22.190338	8.559234	0.62605196
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4/30/2009 15:02	4929.001	3.707767	22.191315	8.561118	0.62618976
4/30/2009 15:02	4930.001	3.708097	22.190826	8.561883	0.62624572
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4/30/2009 15:02	4936.001	3.70707	22.18985	8.559511	0.62607222
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4/30/2009 15:02	4938.001	3.705563	22.190338	8.556029	0.62581753
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4/30/2009 15:02	4940.001	3.706513	22.187439	8.558225	0.62597816
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4/30/2009 15:02	4942.001	3.705943	22.191315	8.556908	0.62588183
4/30/2009 15:02	4943.001	3.704588	22.191315	8.553779	0.62565296
4/30/2009 15:02	4944.001	3.70503	22.18985	8.554801	0.62572771
4/30/2009 15:02	4945.001	3.70437	22.190338	8.553277	0.62561624
4/30/2009 15:02	4946.001	3.706175	22.191315	8.557443	0.62592096
4/30/2009 15:02	4947.001	3.706665	22.190338	8.558575	0.62600376
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4/30/2009 15:02	4949.001	3.703981	22.190826	8.552378	0.62555049
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4/30/2009 15:02	4951.001	3.706239	22.188873	8.55759	0.62593171
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4/30/2009 15:02	4959.001	3.703927	22.190338	8.552253	0.62554134
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4/30/2009 15:02	4961.001	3.706832	22.189362	8.55896	0.62603192
4/30/2009 15:02	4962.001	3.704091	22.190338	8.552631	0.62556899
4/30/2009 15:02	4963.001	3.706175	22.191803	8.557443	0.62592096
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4/30/2009 15:02	4970.001	3.703819	22.191315	8.552004	0.62552313
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4/30/2009 15:02	4974.001	3.704259	22.190338	8.553019	0.62559737
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4/30/2009 15:03	5013.001	3.703927	22.186951	8.552253	0.62554134
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4/30/2009 15:04	5057.001	3.702447	22.188873	8.548836	0.62529141
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4/30/2009 15:04	5077.001	3.702479	22.190826	8.54891	0.62529683
4/30/2009 15:04	5078.001	3.702325	22.187439	8.548553	0.62527071
4/30/2009 15:04	5079.001	3.702922	22.189362	8.549932	0.62537158

4/30/2009 15:04	5080.001	3.702922	22.18985	8.549932	0.62537158
4/30/2009 15:04	5081.001	3.701068	22.188873	8.545651	0.62505845
4/30/2009 15:04	5082.001	3.701786	22.188873	8.547309	0.62517972
4/30/2009 15:04	5083.001	3.702887	22.188416	8.54985	0.62536558
4/30/2009 15:04	5084.001	3.701328	22.187927	8.546252	0.62510241
4/30/2009 15:04	5085.001	3.702167	22.186462	8.548187	0.62524394
4/30/2009 15:04	5086.001	3.702003	22.189362	8.547812	0.62521651
4/30/2009 15:04	5087.001	3.700728	22.186951	8.544868	0.62500118
4/30/2009 15:04	5088.001	3.701674	22.188873	8.54705	0.62516078
4/30/2009 15:04	5089.001	3.703091	22.187439	8.550322	0.6254001
4/30/2009 15:04	5090.001	3.703918	22.189362	8.552231	0.62553973
4/30/2009 15:04	5091.001	3.703205	22.187927	8.550586	0.62541941
4/30/2009 15:04	5092.001	3.700678	22.190338	8.54475	0.62499255
4/30/2009 15:04	5093.001	3.702606	22.187927	8.549203	0.62531826
4/30/2009 15:04	5094.001	3.701068	22.189362	8.545651	0.62505845
4/30/2009 15:04	5095.001	3.712444	22.187439	8.571918	0.62697971
4/30/2009 15:04	5096.001	3.717228	22.187439	8.582964	0.62778765
4/30/2009 15:04	5097.001	3.710627	22.189362	8.567722	0.6266728
4/30/2009 15:04	5098.001	3.69731	22.18985	8.536976	0.62442393
4/30/2009 15:04	5099.001	3.70017	22.188416	8.543576	0.62490668
4/30/2009 15:05	5100.001	3.700514	22.190338	8.544372	0.6249649
4/30/2009 15:05	5101.001	3.698755	22.189362	8.540312	0.62466794
4/30/2009 15:05	5102.001	3.699533	22.188873	8.542106	0.62479916
4/30/2009 15:05	5103.001	3.702044	22.18985	8.547904	0.62522324
4/30/2009 15:05	5104.001	3.701507	22.188416	8.546664	0.62513255
4/30/2009 15:05	5105.001	3.684181	22.189362	8.50666	0.62220651
4/30/2009 15:05	5106.001	3.67934	22.187439	8.495483	0.62138899
4/30/2009 15:05	5107.001	3.686053	22.188416	8.510983	0.62252271
4/30/2009 15:05	5108.001	3.690837	22.188873	8.522028	0.62333058
4/30/2009 15:05	5109.444	3.696378	22.204895	8.534822	0.62426638
4/30/2009 15:05	5110.211	3.698177	22.21756	8.538977	0.62457029
4/30/2009 15:05	5111.001	3.69884	22.201965	8.540507	0.6246822
4/30/2009 15:05	5112.001	3.698855	22.19519	8.540543	0.62468483
4/30/2009 15:05	5113.001	3.698028	22.193237	8.538631	0.62454498
4/30/2009 15:05	5114.001	3.700782	22.194214	8.544991	0.62501018
4/30/2009 15:05	5115.001	3.70215	22.190338	8.54815	0.62524124
4/30/2009 15:05	5116.001	3.702044	22.190338	8.547904	0.62522324
4/30/2009 15:05	5117.001	3.699637	22.190826	8.542349	0.62481693
4/30/2009 15:05	5118.001	3.701003	22.192291	8.545502	0.62504755
4/30/2009 15:05	5119.001	3.70215	22.190338	8.54815	0.62524124
4/30/2009 15:05	5120.001	3.702868	22.190338	8.549806	0.62536236
4/30/2009 15:05	5121.001	3.701878	22.193726	8.547521	0.62519523
4/30/2009 15:05	5122.001	3.704848	22.18985	8.554379	0.62569685
4/30/2009 15:05	5123.001	3.703691	22.187927	8.551707	0.62550141
4/30/2009 15:05	5124.001	3.704408	22.191315	8.553363	0.62562253
4/30/2009 15:05	5125.001	3.703807	22.190338	8.551975	0.62552101
4/30/2009 15:05	5126.001	3.702541	22.190338	8.549053	0.62530728
4/30/2009 15:05	5127.001	3.701654	22.192291	8.547006	0.62515756
4/30/2009 15:05	5128.001	3.701674	22.190338	8.54705	0.62516078
4/30/2009 15:05	5129.001	3.703313	22.191803	8.550835	0.62543763
4/30/2009 15:05	5130.001	3.70435	22.18985	8.55323	0.62561281
4/30/2009 15:05	5131.001	3.704177	22.190338	8.55283	0.62558355
4/30/2009 15:05	5132.001	3.702594	22.189362	8.549174	0.62531614
4/30/2009 15:05	5133.001	3.70215	22.188873	8.54815	0.62524124

4/30/2009 15:05	5134.001	3.70232	22.191315	8.548543	0.62526998
4/30/2009 15:05	5135.001	3.701608	22.191803	8.546897	0.62514959
4/30/2009 15:05	5136.001	3.703091	22.192291	8.550322	0.6254001
4/30/2009 15:05	5137.001	3.702594	22.18985	8.549174	0.62531614
4/30/2009 15:05	5138.001	3.702056	22.190826	8.547933	0.62522536
4/30/2009 15:05	5139.002	3.702427	22.189362	8.548789	0.62528797
4/30/2009 15:05	5140.001	3.703037	22.191803	8.550199	0.62539111
4/30/2009 15:05	5141.001	3.706665	22.190826	8.558575	0.62600376
4/30/2009 15:05	5142.001	3.702795	22.229675	8.549639	0.62535015
4/30/2009 15:05	5143.001	3.701932	22.201965	8.547646	0.62520437
4/30/2009 15:05	5144.001	3.702427	22.196625	8.548789	0.62528797
4/30/2009 15:05	5145.006	3.703091	22.192749	8.550322	0.6254001
4/30/2009 15:05	5146.001	3.702696	22.192749	8.54941	0.6253334
4/30/2009 15:05	5147.001	3.70017	22.192291	8.543576	0.62490668
4/30/2009 15:05	5148.001	3.702913	22.238434	8.549911	0.62537004
4/30/2009 15:05	5149.045	3.701488	22.205902	8.54662	0.62512933
4/30/2009 15:05	5150.001	3.703013	22.200531	8.550143	0.62538701
4/30/2009 15:05	5151.001	3.702795	22.193237	8.549639	0.62535015
4/30/2009 15:05	5152.001	3.705	22.195679	8.554729	0.62572245
4/30/2009 15:05	5153.065	3.705167	22.208801	8.555116	0.62575075
4/30/2009 15:05	5154.001	3.705167	22.199554	8.555116	0.62575075
4/30/2009 15:05	5155.001	3.70342	22.19519	8.551081	0.62545562
4/30/2009 15:05	5156.001	3.701232	22.19812	8.546029	0.6250861
4/30/2009 15:05	5157.003	3.706104	22.237915	8.557281	0.62590911
4/30/2009 15:05	5158.002	3.704342	22.205383	8.55321	0.62561134
4/30/2009 15:05	5159.001	3.703351	22.198578	8.550923	0.62544406
4/30/2009 15:06	5160.001	3.704233	22.196625	8.552959	0.62559298
4/30/2009 15:06	5161.001	3.705281	22.23941	8.555379	0.62576999
4/30/2009 15:06	5162.013	3.705826	22.207825	8.556637	0.625862
4/30/2009 15:06	5163.001	3.702594	22.201965	8.549174	0.62531614
4/30/2009 15:06	5164.001	3.70452	22.19812	8.553622	0.62564148
4/30/2009 15:06	5165.001	3.706378	22.196625	8.557911	0.62595519
4/30/2009 15:06	5166.056	3.702144	22.209778	8.548135	0.62524014
4/30/2009 15:06	5167.001	3.703956	22.202484	8.552319	0.62554617
4/30/2009 15:06	5168.001	3.704233	22.200531	8.552959	0.62559298
4/30/2009 15:06	5169.001	3.704082	22.200531	8.552612	0.6255676
4/30/2009 15:06	5170.001	3.703037	22.199097	8.550199	0.62539111
4/30/2009 15:06	5171.001	3.700611	22.197601	8.544596	0.62498128
4/30/2009 15:06	5172.001	3.702379	22.19812	8.548679	0.62527993
4/30/2009 15:06	5173.001	3.704137	22.199554	8.552737	0.62557675
4/30/2009 15:06	5174.001	3.703469	22.195679	8.551196	0.62546403
4/30/2009 15:06	5175.001	3.701012	22.199097	8.545521	0.62504894
4/30/2009 15:06	5176.001	3.702209	22.196167	8.548285	0.62525111
4/30/2009 15:06	5177.001	3.703091	22.199097	8.550322	0.6254001
4/30/2009 15:06	5178.001	3.705014	22.198578	8.554763	0.62572493
4/30/2009 15:06	5179.017	3.703807	22.198578	8.551975	0.62552101
4/30/2009 15:06	5180.001	3.704137	22.198578	8.552737	0.62557675
4/30/2009 15:06	5181.001	3.704082	22.199554	8.552612	0.6255676
4/30/2009 15:06	5182.001	3.70452	22.19812	8.553622	0.62564148
4/30/2009 15:06	5183.001	3.702761	22.199097	8.54956	0.62534437
4/30/2009 15:06	5184.001	3.704242	22.19812	8.552979	0.62559445
4/30/2009 15:06	5185.001	3.704197	22.199554	8.552876	0.62558691
4/30/2009 15:06	5186.001	3.703405	22.19812	8.551048	0.62545321
4/30/2009 15:06	5187.001	3.700513	22.195679	8.54437	0.62496475

4/30/2009 15:06	5188.001	3.703584	22.200012	8.551459	0.62548327
4/30/2009 15:06	5189.001	3.702594	22.200531	8.549174	0.62531614
4/30/2009 15:06	5190.001	3.702167	22.198578	8.548187	0.62524394
4/30/2009 15:06	5191.001	3.704575	22.200012	8.553747	0.62565062
4/30/2009 15:06	5192.001	3.701488	22.201965	8.54662	0.62512933
4/30/2009 15:06	5193.001	3.702479	22.200531	8.54891	0.62529683
4/30/2009 15:06	5194.001	3.702975	22.198578	8.550055	0.62538057
4/30/2009 15:06	5195.001	3.701932	22.200531	8.547646	0.62520437
4/30/2009 15:06	5196.001	3.703751	22.200012	8.551846	0.62551157
				13.671763	1

Report Date:	5/4/2009 10:50
Report User Name:	bengard
Report Computer Nam	CA3L-BENGARD2

Log File Properties

File Name	HVW-5 ST HVW-5 2009-04-30 15.04.03.wsl
Create Date	4/30/2009 15:03

Device Properties

Device	Level TROLL® 700
Site	TSA
Device Name	
Serial Number	133140
Firmware Version	2.07
Hardware Version	2

Log Configuration

Log Name	HVW-5 ST HVW-5
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Versio	5.5.7.0
Create Date	4/30/2009 13:24
Notes Size(bytes)	4096
Type	Fast Linear
Overwrite when fu	Disabled
Scheduled Start T	4/30/2009 13:40
Scheduled Stop T	No Stop Time
Interval	Days: 0 hrs: 00 mins: 00 secs: 01

Level Reference Settings At Log Creation

Level Measu	Depth
Specific (	0.999

Log Notes:

Date and Time	Note
4/30/2009 14:38	Log Download - Used Battery: 4% Used Memory: 14% Name: Unknown
4/30/2009 15:02	Suspend Command
4/30/2009 15:02	Log Download - Used Battery: 4% Used Memory: 14% Name: Unknown

Log Data:

Record Count 4944

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 133140 Pressure (PSI)	Sensor: Pres 69 SN#: 133140 Temperature	Sensor: Pres 69ft SN#: 133140 Depth (ft)	Normalized
4/30/2009 13:40	0	2.748051	22.202209	6.345164	0.48740148
4/30/2009 13:40	1	2.747337	22.205597	6.343517	0.48727496
4/30/2009 13:40	2	2.747943	22.208527	6.344915	0.48738235

4/30/2009 13:40	3	2.747337	22.211914	6.343517	0.48727496
4/30/2009 13:40	4	2.747012	22.211914	6.342766	0.48721728
4/30/2009 13:40	5	2.747282	22.210938	6.343389	0.48726513
4/30/2009 13:40	6	2.747317	22.211914	6.343471	0.48727143
4/30/2009 13:40	7	2.747833	22.212891	6.344662	0.48736292
4/30/2009 13:40	8	2.746894	22.210938	6.342493	0.48719631
4/30/2009 13:40	9	2.747475	22.213379	6.343834	0.48729931
4/30/2009 13:40	10	2.747032	22.210938	6.342812	0.48722081
4/30/2009 13:40	11	2.745476	22.212891	6.339219	0.48694481
4/30/2009 13:40	12	2.747087	22.213867	6.34294	0.48723064
4/30/2009 13:40	13	2.746714	22.213867	6.342077	0.48716435
4/30/2009 13:40	14	2.746157	22.210449	6.340791	0.48706557
4/30/2009 13:40	15	2.746734	22.213379	6.342123	0.48716788
4/30/2009 13:40	16	2.745773	22.212402	6.339906	0.48699759
4/30/2009 13:40	17	2.747087	22.210938	6.34294	0.48723064
4/30/2009 13:40	18	2.745254	22.213867	6.338705	0.48690533
4/30/2009 13:40	19	2.747475	22.209961	6.343834	0.48729931
4/30/2009 13:40	20	2.746598	22.209015	6.34181	0.48714384
4/30/2009 13:40	21	2.747253	22.210449	6.343323	0.48726006
4/30/2009 13:40	22	2.744953	22.209961	6.338012	0.4868521
4/30/2009 13:40	23	2.744592	22.214355	6.337177	0.48678796
4/30/2009 13:40	24	2.746214	22.20755	6.340923	0.48707571
4/30/2009 13:40	25	2.745829	22.208038	6.340033	0.48700734
4/30/2009 13:40	26	2.745773	22.208527	6.339906	0.48699759
4/30/2009 13:40	27	2.746653	22.210449	6.341936	0.48715352
4/30/2009 13:40	28	2.745887	22.209015	6.340168	0.48701771
4/30/2009 13:40	29	2.746056	22.210449	6.340558	0.48704767
4/30/2009 13:40	30	2.746544	22.208038	6.341685	0.48713424
4/30/2009 13:40	31	2.746544	22.207062	6.341685	0.48713424
4/30/2009 13:40	32	2.746056	22.204132	6.340558	0.48704767
4/30/2009 13:40	33	2.74687	22.209473	6.342438	0.48719208
4/30/2009 13:40	34	2.746714	22.20755	6.342077	0.48716435
4/30/2009 13:40	35	2.747691	22.208527	6.344334	0.48733772
4/30/2009 13:40	36	2.746157	22.205597	6.340791	0.48706557
4/30/2009 13:40	37	2.745912	22.206085	6.340225	0.48702209
4/30/2009 13:40	38	2.746078	22.206573	6.340608	0.48705151
4/30/2009 13:40	39	2.745773	22.203644	6.339906	0.48699759
4/30/2009 13:40	40	2.746214	22.20462	6.340923	0.48707571
4/30/2009 13:40	41	2.745799	22.206573	6.339965	0.48700212
4/30/2009 13:40	42	2.746214	22.207062	6.340923	0.48707571
4/30/2009 13:40	43	2.746056	22.201721	6.340558	0.48704767
4/30/2009 13:40	44	2.746486	22.204132	6.34155	0.48712387
4/30/2009 13:40	45	2.747317	22.204132	6.343471	0.48727143
4/30/2009 13:40	46	2.746544	22.201233	6.341685	0.48713424
4/30/2009 13:40	47	2.746598	22.20462	6.34181	0.48714384
4/30/2009 13:40	48	2.745864	22.201233	6.340115	0.48701364
4/30/2009 13:40	49	2.74539	22.202698	6.339021	0.48692961
4/30/2009 13:40	50	2.745912	22.199768	6.340225	0.48702209
4/30/2009 13:40	51	2.74539	22.201233	6.339021	0.48692961
4/30/2009 13:40	52	2.74539	22.200256	6.339021	0.48692961
4/30/2009 13:40	53	2.745364	22.201233	6.338961	0.486925
4/30/2009 13:40	54	2.745284	22.201233	6.338776	0.48691079
4/30/2009 13:40	55	2.745581	22.199768	6.339461	0.4869634
4/30/2009 13:40	56	2.746928	22.202698	6.342572	0.48720237

4/30/2009 13:40	57	2.746325	22.200256	6.341178	0.48709529
4/30/2009 13:40	58	2.747643	22.199768	6.344224	0.48732927
4/30/2009 13:40	59	2.745667	22.199768	6.339661	0.48697877
4/30/2009 13:41	60	2.745172	22.197815	6.338516	0.48689081
4/30/2009 13:41	61	2.74638	22.195892	6.341306	0.48710513
4/30/2009 13:41	62	2.746598	22.195404	6.34181	0.48714384
4/30/2009 13:41	63	2.74687	22.199768	6.342438	0.48719208
4/30/2009 13:41	64	2.747317	22.197357	6.343471	0.48727143
4/30/2009 13:41	65	2.745527	22.198303	6.339338	0.48695396
4/30/2009 13:41	66	2.746214	22.193939	6.340923	0.48707571
4/30/2009 13:41	67	2.745581	22.196869	6.339461	0.4869634
4/30/2009 13:41	68	2.7461	22.195892	6.340661	0.48705558
4/30/2009 13:41	69	2.747475	22.195404	6.343834	0.48729931
4/30/2009 13:41	70	2.747148	22.193451	6.343079	0.48724132
4/30/2009 13:41	71	2.747087	22.193939	6.34294	0.48723064
4/30/2009 13:41	72	2.746714	22.19104	6.342077	0.48716435
4/30/2009 13:41	73	2.746078	22.195892	6.340608	0.48705151
4/30/2009 13:41	74	2.745441	22.191986	6.339139	0.48693867
4/30/2009 13:41	75	2.74687	22.194427	6.342438	0.48719208
4/30/2009 13:41	76	2.747087	22.19104	6.34294	0.48723064
4/30/2009 13:41	77	2.745581	22.193939	6.339461	0.4869634
4/30/2009 13:41	78	2.746214	22.190552	6.340923	0.48707571
4/30/2009 13:41	79	2.747148	22.190063	6.343079	0.48724132
4/30/2009 13:41	80	2.745527	22.19104	6.339338	0.48695396
4/30/2009 13:41	81	2.745887	22.18811	6.340168	0.48701771
4/30/2009 13:41	82	2.746434	22.187622	6.341432	0.48711481
4/30/2009 13:41	83	2.746761	22.186646	6.342187	0.4871728
4/30/2009 13:41	84	2.746653	22.190063	6.341936	0.48715352
4/30/2009 13:41	85	2.746349	22.188599	6.341235	0.48709967
4/30/2009 13:41	86	2.746714	22.187622	6.342077	0.48716435
4/30/2009 13:41	87	2.746214	22.186646	6.340923	0.48707571
4/30/2009 13:41	88	2.74539	22.187134	6.339021	0.48692961
4/30/2009 13:41	89	2.745204	22.187622	6.338591	0.48689657
4/30/2009 13:41	90	2.744898	22.184723	6.337884	0.48684227
4/30/2009 13:41	91	2.745864	22.185669	6.340115	0.48701364
4/30/2009 13:41	92	2.747317	22.18811	6.343471	0.48727143
4/30/2009 13:41	93	2.746265	22.183746	6.341042	0.48708485
4/30/2009 13:41	94	2.74457	22.185211	6.337127	0.48678412
4/30/2009 13:41	95	2.746817	22.181305	6.342314	0.48718256
4/30/2009 13:41	96	2.74457	22.184235	6.337127	0.48678412
4/30/2009 13:41	97	2.746157	22.180817	6.340791	0.48706557
4/30/2009 13:41	98	2.746653	22.182281	6.341936	0.48715352
4/30/2009 13:41	99	2.745254	22.180817	6.338705	0.48690533
4/30/2009 13:41	100	2.747971	22.182281	6.344979	0.48738727
4/30/2009 13:41	101	2.747367	22.17984	6.343585	0.48728019
4/30/2009 13:41	102	2.746181	22.180328	6.340846	0.48706979
4/30/2009 13:41	103	2.745944	22.181305	6.3403	0.48702785
4/30/2009 13:41	104	2.745416	22.182281	6.33908	0.48693414
4/30/2009 13:41	105	2.746544	22.17984	6.341685	0.48713424
4/30/2009 13:41	106	2.746953	22.180328	6.342629	0.48720675
4/30/2009 13:41	107	2.744209	22.17984	6.336295	0.48672021
4/30/2009 13:41	108	2.745723	22.176453	6.339789	0.4869886
4/30/2009 13:41	109	2.746434	22.177429	6.341432	0.48711481
4/30/2009 13:41	110	2.7472	22.176453	6.343199	0.48725054

4/30/2009 13:41	111	2.747643	22.178894	6.344224	0.48732927
4/30/2009 13:41	112	2.74561	22.177917	6.339529	0.48696863
4/30/2009 13:41	113	2.74539	22.178406	6.339021	0.48692961
4/30/2009 13:41	114	2.746817	22.175964	6.342314	0.48718256
4/30/2009 13:41	115	2.745748	22.177917	6.339846	0.48699298
4/30/2009 13:41	116	2.744348	22.175476	6.336614	0.48674471
4/30/2009 13:41	117	2.745035	22.174011	6.338201	0.48686662
4/30/2009 13:41	118	2.745864	22.1745	6.340115	0.48701364
4/30/2009 13:41	119	2.746486	22.173553	6.34155	0.48712387
4/30/2009 13:42	120	2.746295	22.172577	6.34111	0.48709007
4/30/2009 13:42	121	2.745773	22.1745	6.339906	0.48699759
4/30/2009 13:42	122	2.7461	22.1716	6.340661	0.48705558
4/30/2009 13:42	123	2.744923	22.173065	6.337942	0.48684672
4/30/2009 13:42	124	2.747418	22.170135	6.343704	0.48728933
4/30/2009 13:42	125	2.74638	22.172089	6.341306	0.48710513
4/30/2009 13:42	126	2.74687	22.169159	6.342438	0.48719208
4/30/2009 13:42	127	2.744592	22.167236	6.337177	0.48678796
4/30/2009 13:42	128	2.747253	22.169647	6.343323	0.48726006
4/30/2009 13:42	129	2.745696	22.169159	6.339727	0.48698384
4/30/2009 13:42	130	2.745364	22.169159	6.338961	0.486925
4/30/2009 13:42	131	2.747643	22.168182	6.344224	0.48732927
4/30/2009 13:42	132	2.745944	22.168182	6.3403	0.48702785
4/30/2009 13:42	133	2.745527	22.164795	6.339338	0.48695396
4/30/2009 13:42	134	2.746544	22.165283	6.341685	0.48713424
4/30/2009 13:42	135	2.746349	22.168671	6.341235	0.48709967
4/30/2009 13:42	136	2.746434	22.168671	6.341432	0.48711481
4/30/2009 13:42	137	2.747367	22.169159	6.343585	0.48728019
4/30/2009 13:42	138	2.745559	22.166748	6.33941	0.48695949
4/30/2009 13:42	139	2.745912	22.162842	6.340225	0.48702209
4/30/2009 13:42	140	2.746295	22.164307	6.34111	0.48709007
4/30/2009 13:42	141	2.748132	22.164795	6.345351	0.48741584
4/30/2009 13:42	142	2.746653	22.16626	6.341936	0.48715352
4/30/2009 13:42	143	2.748022	22.161865	6.345098	0.48739641
4/30/2009 13:42	144	2.747148	22.161407	6.343079	0.48724132
4/30/2009 13:42	145	2.748516	22.160919	6.346239	0.48748405
4/30/2009 13:42	146	2.747012	22.162354	6.342766	0.48721728
4/30/2009 13:42	147	2.747367	22.162842	6.343585	0.48728019
4/30/2009 13:42	148	2.747032	22.162354	6.342812	0.48722081
4/30/2009 13:42	149	2.746403	22.161407	6.341359	0.4871092
4/30/2009 13:42	150	2.74679	22.159943	6.342253	0.48717787
4/30/2009 13:42	151	2.746679	22.159943	6.341997	0.48715821
4/30/2009 13:42	152	2.744706	22.157013	6.337441	0.48680824
4/30/2009 13:42	153	2.746349	22.158478	6.341235	0.48709967
4/30/2009 13:42	154	2.745864	22.160431	6.340115	0.48701364
4/30/2009 13:42	155	2.746181	22.156525	6.340846	0.48706979
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4/30/2009 13:42	161	2.745254	22.15509	6.338705	0.48690533
4/30/2009 13:42	162	2.744706	22.153625	6.337441	0.48680824
4/30/2009 13:42	163	2.744706	22.15509	6.337441	0.48680824
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4/30/2009 13:42	171	2.745559	22.152161	6.33941	0.48695949
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4/30/2009 13:42	176	2.74602	22.150696	6.340476	0.48704137
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4/30/2009 13:42	178	2.74602	22.14975	6.340476	0.48704137
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4/30/2009 13:43	183	2.745204	22.146332	6.338591	0.48689657
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4/30/2009 13:43	185	2.745864	22.147797	6.340115	0.48701364
4/30/2009 13:43	186	2.74432	22.148773	6.336549	0.48673972
4/30/2009 13:43	187	2.747087	22.14682	6.34294	0.48723064
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4/30/2009 13:53	796	3.459311	22.004059	7.987442	0.61355247
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4/30/2009 13:57	1026	3.193221	21.991943	7.373048	0.56635802
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4/30/2009 14:00	1241	3.052628	21.98465	7.048423	0.54142206
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4/30/2009 14:00	1244	3.052243	21.981689	7.047535	0.54135385

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4/30/2009 14:00	1252	3.048161	21.982697	7.038109	0.5406298
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4/30/2009 14:00	1254	3.046431	21.982208	7.034113	0.54032285
4/30/2009 14:00	1255	3.045146	21.983673	7.031148	0.54009509
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4/30/2009 14:01	1266	3.040453	21.979309	7.020312	0.53926273
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4/30/2009 14:01	1269	3.039517	21.980713	7.018151	0.53909673
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4/30/2009 14:01	1280	3.033706	21.982697	7.004733	0.53806603
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4/30/2009 14:01	1305	3.021046	21.979309	6.975501	0.53582059
4/30/2009 14:01	1306	3.02272	21.980713	6.979368	0.53611763
4/30/2009 14:01	1307	3.021954	21.980713	6.977597	0.53598159
4/30/2009 14:01	1308	3.020606	21.979797	6.974486	0.53574262
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4/30/2009 14:01	1310	3.01978	21.979309	6.972579	0.53559613
4/30/2009 14:01	1311	3.019236	21.980713	6.971321	0.5354995
4/30/2009 14:01	1312	3.01797	21.980225	6.9684	0.53527513
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4/30/2009 14:01	1316	3.017481	21.977875	6.96727	0.53518832
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4/30/2009 14:02	1320	3.015942	21.981689	6.963716	0.53491533
4/30/2009 14:02	1321	3.013912	21.979309	6.959029	0.5345553
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4/30/2009 14:02	1325	3.013807	21.979797	6.958787	0.53453671
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4/30/2009 14:04	1464	2.96347	21.975891	6.842562	0.52560893
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4/30/2009 14:04	1468	2.961111	21.97348	6.837114	0.52519044
4/30/2009 14:04	1469	2.961487	21.974426	6.837982	0.52525711
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4/30/2009 14:04	1471	2.961236	21.976868	6.837402	0.52521256
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4/30/2009 14:04	1473	2.959628	21.976379	6.83369	0.52492743
4/30/2009 14:04	1474	2.958863	21.974915	6.831923	0.52479169
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4/30/2009 14:04	1489	2.955569	21.975403	6.824317	0.52420744
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4/30/2009 14:08	1689	2.905946	21.967651	6.709739	0.51540617
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4/30/2009 14:11	1907	2.868224	21.961365	6.62264	0.5087157
4/30/2009 14:11	1908	2.868988	21.963287	6.624405	0.50885127
4/30/2009 14:11	1909	2.869154	21.960876	6.624787	0.50888062
4/30/2009 14:11	1910	2.868937	21.961823	6.624288	0.50884229
4/30/2009 14:11	1911	2.868714	21.963287	6.623773	0.50880273
4/30/2009 14:11	1912	2.868163	21.963287	6.622499	0.50870487
4/30/2009 14:11	1913	2.868385	21.962799	6.623013	0.50874435
4/30/2009 14:11	1914	2.868937	21.961365	6.624288	0.50884229
4/30/2009 14:11	1915	2.868556	21.960876	6.623406	0.50877454
4/30/2009 14:11	1916	2.869206	21.962311	6.624908	0.50888991
4/30/2009 14:11	1917	2.868385	21.962311	6.623013	0.50874435
4/30/2009 14:11	1918	2.867837	21.964264	6.621747	0.5086471
4/30/2009 14:11	1919	2.86811	21.960876	6.622376	0.50869542
4/30/2009 14:12	1920	2.867455	21.958435	6.620866	0.50857943
4/30/2009 14:12	1921	2.868937	21.960876	6.624288	0.50884229
4/30/2009 14:12	1922	2.867175	21.962799	6.620218	0.50852965
4/30/2009 14:12	1923	2.867622	21.961823	6.621252	0.50860908
4/30/2009 14:12	1924	2.867562	21.961365	6.621112	0.50859832
4/30/2009 14:12	1925	2.867014	21.961365	6.619847	0.50850115
4/30/2009 14:12	1926	2.867893	21.957947	6.621876	0.50865701
4/30/2009 14:12	1927	2.867294	21.962311	6.620494	0.50855085
4/30/2009 14:12	1928	2.865041	21.960388	6.61529	0.50815111
4/30/2009 14:12	1929	2.86767	21.960876	6.621361	0.50861745
4/30/2009 14:12	1930	2.86553	21.959412	6.61642	0.50823791
4/30/2009 14:12	1931	2.866461	21.9599	6.618568	0.50840291
4/30/2009 14:12	1932	2.867455	21.960388	6.620866	0.50857943
4/30/2009 14:12	1933	2.867394	21.962799	6.620725	0.5085686
4/30/2009 14:12	1934	2.867345	21.960876	6.62061	0.50855976
4/30/2009 14:12	1935	2.865589	21.963287	6.616557	0.50824843
4/30/2009 14:12	1936	2.865755	21.960876	6.616939	0.50827778
4/30/2009 14:12	1937	2.864765	21.960388	6.614654	0.50810225
4/30/2009 14:12	1938	2.86367	21.962799	6.612126	0.50790807
4/30/2009 14:12	1939	2.865426	21.960876	6.61618	0.50821947
4/30/2009 14:12	1940	2.865426	21.961823	6.61618	0.50821947
4/30/2009 14:12	1941	2.866241	21.962799	6.618063	0.50836412
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4/30/2009 14:12	1943	2.864492	21.959412	6.614024	0.50805386
4/30/2009 14:12	1944	2.865477	21.960876	6.616296	0.50822838
4/30/2009 14:12	1945	2.865805	21.960876	6.617054	0.50828661
4/30/2009 14:12	1946	2.86515	21.960388	6.615543	0.50817054

4/30/2009 14:12	1947	2.865589	21.962799	6.616557	0.50824843
4/30/2009 14:12	1948	2.864765	21.960876	6.614654	0.50810225
4/30/2009 14:12	1949	2.865198	21.958923	6.615654	0.50817907
4/30/2009 14:12	1950	2.86427	21.963287	6.613512	0.50801453
4/30/2009 14:12	1951	2.864433	21.962799	6.613888	0.50804341
4/30/2009 14:12	1952	2.86367	21.963287	6.612126	0.50790807
4/30/2009 14:12	1953	2.862793	21.961823	6.6101	0.50775244
4/30/2009 14:12	1954	2.86427	21.960876	6.613512	0.50801453
4/30/2009 14:12	1955	2.863612	21.960388	6.611992	0.50789777
4/30/2009 14:12	1956	2.86427	21.960876	6.613512	0.50801453
4/30/2009 14:12	1957	2.86263	21.959412	6.609724	0.50772356
4/30/2009 14:12	1958	2.863503	21.957947	6.611741	0.50787849
4/30/2009 14:12	1959	2.862844	21.960388	6.610217	0.50776143
4/30/2009 14:12	1960	2.861148	21.9599	6.606302	0.5074607
4/30/2009 14:12	1961	2.861694	21.960876	6.607563	0.50755756
4/30/2009 14:12	1962	2.862354	21.958435	6.609087	0.50767463
4/30/2009 14:12	1963	2.861808	21.960876	6.607825	0.50757769
4/30/2009 14:12	1964	2.862844	21.962311	6.610217	0.50776143
4/30/2009 14:12	1965	2.860761	21.959412	6.605407	0.50739195
4/30/2009 14:12	1966	2.861863	21.9599	6.607953	0.50758752
4/30/2009 14:12	1967	2.861916	21.961365	6.608075	0.50759689
4/30/2009 14:12	1968	2.860874	21.961365	6.60567	0.50741215
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4/30/2009 14:12	1970	2.860599	21.960388	6.605033	0.50736322
4/30/2009 14:12	1971	2.860979	21.960388	6.605912	0.50743074
4/30/2009 14:12	1972	2.862074	21.963287	6.60844	0.50762493
4/30/2009 14:12	1973	2.861694	21.958923	6.607563	0.50755756
4/30/2009 14:12	1974	2.861367	21.958435	6.606808	0.50749957
4/30/2009 14:12	1975	2.863722	21.958923	6.612245	0.50791721
4/30/2009 14:12	1976	2.861469	21.958435	6.607044	0.5075177
4/30/2009 14:12	1977	2.861307	21.961365	6.606669	0.50748889
4/30/2009 14:12	1978	2.861091	21.959412	6.606169	0.50745048
4/30/2009 14:12	1979	2.860817	21.955048	6.605538	0.50740201
4/30/2009 14:13	1980	2.860544	21.960388	6.604908	0.50735362
4/30/2009 14:13	1981	2.860652	21.959412	6.605157	0.50737275
4/30/2009 14:13	1982	2.860109	21.958923	6.603904	0.5072765
4/30/2009 14:13	1983	2.860212	21.960388	6.604142	0.50729478
4/30/2009 14:13	1984	2.860703	21.961823	6.605276	0.50738189
4/30/2009 14:13	1985	2.860153	21.960388	6.604005	0.50728426
4/30/2009 14:13	1986	2.858947	21.9599	6.601219	0.50707025
4/30/2009 14:13	1987	2.860544	21.958923	6.604908	0.50735362
4/30/2009 14:13	1988	2.860045	21.959412	6.603756	0.50726513
4/30/2009 14:13	1989	2.858846	21.9599	6.600986	0.50705235
4/30/2009 14:13	1990	2.860599	21.958435	6.605033	0.50736322
4/30/2009 14:13	1991	2.859776	21.957947	6.603135	0.50721743
4/30/2009 14:13	1992	2.859663	21.958923	6.602873	0.5071973
4/30/2009 14:13	1993	2.858349	21.961365	6.599839	0.50696425
4/30/2009 14:13	1994	2.858459	21.957947	6.600094	0.50698383
4/30/2009 14:13	1995	2.859776	21.9599	6.603135	0.50721743
4/30/2009 14:13	1996	2.859776	21.958923	6.603135	0.50721743
4/30/2009 14:13	1997	2.859941	21.957947	6.603514	0.50724654
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4/30/2009 14:13	1999	2.858243	21.958923	6.599595	0.5069455
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4/30/2009 14:13	2005	2.85813	21.9599	6.599332	0.5069253
4/30/2009 14:13	2006	2.858839	21.95697	6.600971	0.5070512
4/30/2009 14:13	2007	2.858021	21.958435	6.599082	0.5069061
4/30/2009 14:13	2008	2.85813	21.957458	6.599332	0.5069253
4/30/2009 14:13	2009	2.858078	21.95697	6.599213	0.50691616
4/30/2009 14:13	2010	2.858186	21.957947	6.599463	0.50693536
4/30/2009 14:13	2011	2.855942	21.959412	6.594281	0.50653731
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4/30/2009 14:13	2014	2.855227	21.961365	6.592629	0.50641041
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4/30/2009 14:13	2016	2.856596	21.95697	6.595791	0.5066533
4/30/2009 14:13	2017	2.857362	21.955994	6.597559	0.50678911
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4/30/2009 14:13	2022	2.856378	21.962311	6.595287	0.50661459
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4/30/2009 14:13	2026	2.857472	21.958435	6.597816	0.50680885
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4/30/2009 14:15	2137	2.846723	21.955505	6.572995	0.50490223
4/30/2009 14:15	2138	2.847494	21.958435	6.574776	0.50503904
4/30/2009 14:15	2139	2.846675	21.955994	6.572884	0.50489371
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4/30/2009 14:15	2141	2.846228	21.955505	6.571852	0.50481443
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4/30/2009 14:15	2143	2.847215	21.955505	6.574131	0.50498949
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4/30/2009 14:15	2150	2.84536	21.957947	6.569848	0.5046605
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4/30/2009 14:19	2359	2.831759	21.950653	6.538445	0.50224829
4/30/2009 14:19	2360	2.831596	21.949677	6.538068	0.50221933
4/30/2009 14:19	2361	2.833177	21.949188	6.541717	0.50249963
4/30/2009 14:19	2362	2.83181	21.947266	6.538561	0.5022572
4/30/2009 14:19	2363	2.830878	21.949188	6.53641	0.50209197
4/30/2009 14:19	2364	2.831046	21.949677	6.536798	0.50212177
4/30/2009 14:19	2365	2.832193	21.946777	6.539447	0.50232526
4/30/2009 14:19	2366	2.832908	21.952118	6.541096	0.50245192
4/30/2009 14:19	2367	2.831643	21.945313	6.538176	0.50222762
4/30/2009 14:19	2368	2.831537	21.950165	6.537931	0.5022088
4/30/2009 14:19	2369	2.831203	21.950653	6.537158	0.50214943
4/30/2009 14:19	2370	2.831704	21.95163	6.538317	0.50223846
4/30/2009 14:19	2371	2.831643	21.952118	6.538176	0.50222762
4/30/2009 14:19	2372	2.830937	21.947754	6.536547	0.50210249
4/30/2009 14:19	2373	2.83148	21.950165	6.5378	0.50219874
4/30/2009 14:19	2374	2.830987	21.950653	6.536661	0.50211125
4/30/2009 14:19	2375	2.831429	21.949188	6.537681	0.5021896
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4/30/2009 14:19	2377	2.830326	21.951141	6.535135	0.50199403
4/30/2009 14:19	2378	2.829945	21.948242	6.534254	0.50192636

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4/30/2009 14:19	2381	2.830444	21.950165	6.535408	0.502015
4/30/2009 14:19	2382	2.8294	21.948242	6.532997	0.5018298
4/30/2009 14:19	2383	2.829835	21.95163	6.534001	0.50190692
4/30/2009 14:19	2384	2.830767	21.950165	6.536153	0.50207223
4/30/2009 14:19	2385	2.831377	21.95163	6.537562	0.50218046
4/30/2009 14:19	2386	2.830276	21.949188	6.535018	0.50198504
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4/30/2009 14:19	2388	2.828575	21.950165	6.531093	0.50168355
4/30/2009 14:19	2389	2.82945	21.952606	6.533112	0.50183864
4/30/2009 14:19	2390	2.8294	21.949677	6.532997	0.5018298
4/30/2009 14:19	2391	2.829894	21.951141	6.534138	0.50191745
4/30/2009 14:19	2392	2.829835	21.951141	6.534001	0.50190692
4/30/2009 14:19	2393	2.830937	21.947266	6.536547	0.50210249
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4/30/2009 14:19	2397	2.8294	21.949677	6.532997	0.5018298
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4/30/2009 14:20	2405	2.829347	21.95163	6.532874	0.50182035
4/30/2009 14:20	2406	2.829617	21.949677	6.533497	0.50186821
4/30/2009 14:20	2407	2.829505	21.95163	6.533239	0.50184839
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4/30/2009 14:20	2412	2.82918	21.949188	6.532488	0.5017907
4/30/2009 14:20	2413	2.827253	21.94873	6.52804	0.50144903
4/30/2009 14:20	2414	2.82885	21.950165	6.531726	0.50173217
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4/30/2009 14:20	2418	2.828789	21.947754	6.531586	0.50172142
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4/30/2009 14:20	2422	2.828408	21.95163	6.530707	0.5016539
4/30/2009 14:20	2423	2.828953	21.950653	6.531964	0.50175045
4/30/2009 14:20	2424	2.828131	21.950165	6.530066	0.50160466
4/30/2009 14:20	2425	2.828953	21.950165	6.531964	0.50175045
4/30/2009 14:20	2426	2.827699	21.948242	6.529069	0.50152807
4/30/2009 14:20	2427	2.827155	21.946289	6.527813	0.50143159
4/30/2009 14:20	2428	2.827642	21.947754	6.528939	0.50151809
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4/30/2009 14:20	2430	2.827362	21.948242	6.528291	0.50146831
4/30/2009 14:20	2431	2.82808	21.94873	6.529949	0.50159567
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4/30/2009 14:20	2434	2.827752	21.945801	6.529192	0.50153752
4/30/2009 14:20	2435	2.827098	21.948242	6.527681	0.50142145
4/30/2009 14:20	2436	2.828683	21.948242	6.531341	0.5017026
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4/30/2009 14:20	2445	2.827098	21.949677	6.527681	0.50142145
4/30/2009 14:20	2446	2.827699	21.946289	6.529069	0.50152807
4/30/2009 14:20	2447	2.827642	21.947266	6.528939	0.50151809
4/30/2009 14:20	2448	2.827318	21.949677	6.52819	0.50146055
4/30/2009 14:20	2449	2.826324	21.947754	6.525894	0.50128419
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4/30/2009 14:23	2581	2.820128	21.946777	6.511589	0.50018535
4/30/2009 14:23	2582	2.819852	21.944824	6.510951	0.50013635
4/30/2009 14:23	2583	2.820516	21.945313	6.512483	0.50025403
4/30/2009 14:23	2584	2.819852	21.946289	6.510951	0.50013635
4/30/2009 14:23	2585	2.820079	21.947266	6.511475	0.5001766
4/30/2009 14:23	2586	2.820843	21.94046	6.513238	0.50031202
4/30/2009 14:23	2587	2.820683	21.945801	6.512868	0.5002836
4/30/2009 14:23	2588	2.818927	21.943848	6.508815	0.49997227
4/30/2009 14:23	2589	2.818375	21.944824	6.50754	0.49987433
4/30/2009 14:23	2590	2.820354	21.945313	6.512111	0.50022545
4/30/2009 14:23	2591	2.818323	21.945801	6.507421	0.49986519
4/30/2009 14:23	2592	2.820738	21.944824	6.512997	0.50029351
4/30/2009 14:23	2593	2.819254	21.944824	6.50957	0.50003026
4/30/2009 14:23	2594	2.819083	21.946777	6.509176	0.5

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4/30/2009 14:23	2597	2.81947	21.944336	6.51007	0.50006867
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4/30/2009 14:23	2603	2.820022	21.944336	6.511343	0.50016646
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4/30/2009 14:23	2605	2.8198	21.946777	6.510832	0.50012721
4/30/2009 14:23	2606	2.817496	21.945801	6.505511	0.49971847
4/30/2009 14:23	2607	2.819199	21.945801	6.509442	0.50002043
4/30/2009 14:23	2608	2.8198	21.945313	6.510832	0.50012721
4/30/2009 14:23	2609	2.819852	21.944336	6.510951	0.50013635
4/30/2009 14:23	2610	2.820354	21.943359	6.512111	0.50022545
4/30/2009 14:23	2611	2.820184	21.947754	6.511717	0.50019519
4/30/2009 14:23	2612	2.819308	21.942871	6.509696	0.50003994
4/30/2009 14:23	2613	2.819032	21.947266	6.509057	0.49999086
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4/30/2009 14:23	2615	2.818162	21.945313	6.507049	0.49983662
4/30/2009 14:23	2616	2.819199	21.945313	6.509442	0.50002043
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4/30/2009 14:23	2619	2.818704	21.947754	6.5083	0.49993271
4/30/2009 14:23	2620	2.8198	21.945313	6.510832	0.50012721
4/30/2009 14:23	2621	2.819413	21.947266	6.509938	0.50005853
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4/30/2009 14:23	2625	2.819915	21.944824	6.511096	0.50014748
4/30/2009 14:23	2626	2.818162	21.946289	6.507049	0.49983662
4/30/2009 14:23	2627	2.817991	21.945313	6.506654	0.49980627
4/30/2009 14:23	2628	2.819143	21.944336	6.509315	0.50001068
4/30/2009 14:23	2629	2.817714	21.946777	6.506014	0.49975711
4/30/2009 14:23	2630	2.818426	21.946777	6.507658	0.4998834
4/30/2009 14:23	2631	2.820184	21.943848	6.511717	0.50019519
4/30/2009 14:23	2632	2.819032	21.945313	6.509057	0.49999086
4/30/2009 14:23	2633	2.815577	21.946289	6.501079	0.49937803
4/30/2009 14:23	2634	2.818487	21.945313	6.5078	0.4998943
4/30/2009 14:23	2635	2.81788	21.946289	6.506397	0.49978653
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4/30/2009 14:23	2638	2.817831	21.943359	6.506284	0.49977785
4/30/2009 14:23	2639	2.81777	21.944824	6.506144	0.4997671
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4/30/2009 14:24	2644	2.818487	21.944824	6.5078	0.4998943
4/30/2009 14:24	2645	2.817831	21.942871	6.506284	0.49977785
4/30/2009 14:24	2646	2.818979	21.945313	6.508935	0.49998149
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4/30/2009 14:24	2650	2.818375	21.946289	6.50754	0.49987433
4/30/2009 14:24	2651	2.818813	21.944336	6.508553	0.49995214
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4/30/2009 14:24	2656	2.817389	21.945313	6.505265	0.49969958
4/30/2009 14:24	2657	2.81777	21.943848	6.506144	0.4997671
4/30/2009 14:24	2658	2.817117	21.946289	6.504635	0.49965118
4/30/2009 14:24	2659	2.818162	21.944336	6.507049	0.49983662
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4/30/2009 14:24	2664	2.818757	21.944824	6.508423	0.49994216
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4/30/2009 14:24	2666	2.816841	21.944824	6.503999	0.49960233
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4/30/2009 14:24	2669	2.817991	21.943848	6.506654	0.49980627
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4/30/2009 14:24	2672	2.816563	21.942871	6.503356	0.49955294
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4/30/2009 14:24	2675	2.817006	21.944824	6.50438	0.4996316
4/30/2009 14:24	2676	2.81777	21.944824	6.506144	0.4997671
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4/30/2009 14:26	2803	2.8113	21.942871	6.491205	0.49861956
4/30/2009 14:26	2804	2.812284	21.941925	6.493478	0.49879416
4/30/2009 14:26	2805	2.812284	21.939972	6.493478	0.49879416
4/30/2009 14:26	2806	2.812945	21.942413	6.495004	0.49891138
4/30/2009 14:26	2807	2.812349	21.942413	6.493627	0.49880561
4/30/2009 14:26	2808	2.81207	21.941437	6.492982	0.49875606
4/30/2009 14:26	2809	2.812894	21.939972	6.494884	0.49890217
4/30/2009 14:26	2810	2.81207	21.942871	6.492982	0.49875606

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4/30/2009 14:26	2812	2.811418	21.940948	6.491476	0.49864038
4/30/2009 14:26	2813	2.811962	21.939484	6.492733	0.49873694
4/30/2009 14:26	2814	2.812673	21.942413	6.494374	0.49886299
4/30/2009 14:26	2815	2.810703	21.94046	6.489827	0.49851371
4/30/2009 14:26	2816	2.811574	21.941925	6.491837	0.49866811
4/30/2009 14:26	2817	2.812453	21.94046	6.493867	0.49882404
4/30/2009 14:26	2818	2.811251	21.940948	6.491091	0.49861081
4/30/2009 14:26	2819	2.812284	21.941925	6.493478	0.49879416
4/30/2009 14:27	2820	2.810645	21.94046	6.489692	0.49850334
4/30/2009 14:27	2821	2.81103	21.940948	6.490582	0.49857171
4/30/2009 14:27	2822	2.811136	21.941925	6.490827	0.49859053
4/30/2009 14:27	2823	2.810582	21.943359	6.489547	0.49849221
4/30/2009 14:27	2824	2.812349	21.940948	6.493627	0.49880561
4/30/2009 14:27	2825	2.812453	21.94046	6.493867	0.49882404
4/30/2009 14:27	2826	2.811465	21.940948	6.491586	0.49864883
4/30/2009 14:27	2827	2.810253	21.939972	6.488788	0.4984339
4/30/2009 14:27	2828	2.811847	21.941925	6.492467	0.4987165
4/30/2009 14:27	2829	2.812564	21.939484	6.494123	0.49884371
4/30/2009 14:27	2830	2.813	21.941437	6.495129	0.49892098
4/30/2009 14:27	2831	2.81278	21.941437	6.494623	0.49888212
4/30/2009 14:27	2832	2.810913	21.939484	6.490312	0.49855097
4/30/2009 14:27	2833	2.810089	21.940948	6.488409	0.49840479
4/30/2009 14:27	2834	2.812224	21.939484	6.493339	0.49878349
4/30/2009 14:27	2835	2.810039	21.939484	6.488292	0.4983958
4/30/2009 14:27	2836	2.81251	21.938019	6.493999	0.49883418
4/30/2009 14:27	2837	2.811847	21.940948	6.492467	0.4987165
4/30/2009 14:27	2838	2.811088	21.944824	6.490715	0.49858192
4/30/2009 14:27	2839	2.810913	21.941437	6.490312	0.49855097
4/30/2009 14:27	2840	2.81163	21.943848	6.491967	0.4986781
4/30/2009 14:27	2841	2.81251	21.937531	6.493999	0.49883418
4/30/2009 14:27	2842	2.810537	21.938995	6.489444	0.49848429
4/30/2009 14:27	2843	2.809545	21.940948	6.487151	0.49830816
4/30/2009 14:27	2844	2.812564	21.938995	6.494123	0.49884371
4/30/2009 14:27	2845	2.813168	21.939484	6.495517	0.49895079
4/30/2009 14:27	2846	2.808672	21.941925	6.485137	0.49815345
4/30/2009 14:27	2847	2.811358	21.939484	6.491339	0.49862986
4/30/2009 14:27	2848	2.811465	21.938995	6.491586	0.49864883
4/30/2009 14:27	2849	2.810703	21.940948	6.489827	0.49851371
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4/30/2009 14:27	2851	2.811358	21.94046	6.491339	0.49862986
4/30/2009 14:27	2852	2.81119	21.94046	6.49095	0.49859998
4/30/2009 14:27	2853	2.811465	21.939972	6.491586	0.49864883
4/30/2009 14:27	2854	2.809821	21.939484	6.48779	0.49835724
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4/30/2009 14:27	2857	2.811801	21.94046	6.492361	0.49870836
4/30/2009 14:27	2858	2.810426	21.942871	6.489186	0.49846448
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4/30/2009 14:27	2864	2.811801	21.94046	6.492361	0.49870836

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4/30/2009 14:27	2867	2.811465	21.939972	6.491586	0.49864883
4/30/2009 14:27	2868	2.809821	21.939972	6.48779	0.49835724
4/30/2009 14:27	2869	2.812123	21.938507	6.493105	0.49876551
4/30/2009 14:27	2870	2.810703	21.938507	6.489827	0.49851371
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4/30/2009 14:27	2872	2.811847	21.939972	6.492467	0.4987165
4/30/2009 14:27	2873	2.81163	21.939484	6.491967	0.4986781
4/30/2009 14:27	2874	2.810863	21.938995	6.490197	0.49854213
4/30/2009 14:27	2875	2.811358	21.938507	6.491339	0.49862986
4/30/2009 14:27	2876	2.810582	21.939484	6.489547	0.49849221
4/30/2009 14:27	2877	2.810089	21.938019	6.488409	0.49840479
4/30/2009 14:27	2878	2.810039	21.94046	6.488292	0.4983958
4/30/2009 14:27	2879	2.809545	21.938995	6.487151	0.49830816
4/30/2009 14:28	2880	2.808839	21.940948	6.485522	0.49818303
4/30/2009 14:28	2881	2.810703	21.938995	6.489827	0.49851371
4/30/2009 14:28	2882	2.810645	21.939972	6.489692	0.49850334
4/30/2009 14:28	2883	2.809442	21.939484	6.486914	0.49828995
4/30/2009 14:28	2884	2.810863	21.938995	6.490197	0.49854213
4/30/2009 14:28	2885	2.811801	21.940948	6.492361	0.49870836
4/30/2009 14:28	2886	2.810703	21.938995	6.489827	0.49851371
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4/30/2009 14:28	2888	2.810426	21.938507	6.489186	0.49846448
4/30/2009 14:28	2889	2.810373	21.938507	6.489065	0.49845518
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4/30/2009 14:28	2891	2.810205	21.938995	6.488677	0.49842538
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4/30/2009 14:28	2893	2.808998	21.938019	6.485889	0.49821122
4/30/2009 14:28	2894	2.810703	21.938995	6.489827	0.49851371
4/30/2009 14:28	2895	2.810253	21.94046	6.488788	0.4984339
4/30/2009 14:28	2896	2.809442	21.942871	6.486914	0.49828995
4/30/2009 14:28	2897	2.810582	21.938019	6.489547	0.49849221
4/30/2009 14:28	2898	2.81081	21.939484	6.490073	0.49853261
4/30/2009 14:28	2899	2.810426	21.94046	6.489186	0.49846448
4/30/2009 14:28	2900	2.810253	21.94046	6.488788	0.4984339
4/30/2009 14:28	2901	2.809607	21.941437	6.487295	0.49831922
4/30/2009 14:28	2902	2.811519	21.942871	6.491709	0.49865828
4/30/2009 14:28	2903	2.809442	21.94046	6.486914	0.49828995
4/30/2009 14:28	2904	2.810152	21.938995	6.488554	0.49841593
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4/30/2009 14:28	2923	2.808505	21.938995	6.484751	0.4981238
4/30/2009 14:28	2924	2.809442	21.941925	6.486914	0.49828995
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4/30/2009 14:28	2931	2.80779	21.94046	6.483099	0.4979969
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4/30/2009 14:28	2934	2.805666	21.941437	6.478196	0.49762028
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4/30/2009 14:29	2987	2.808394	21.938995	6.484496	0.49810421
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4/30/2009 14:30	3010	2.807027	21.938019	6.481339	0.49786171
4/30/2009 14:30	3011	2.805822	21.936584	6.478557	0.49764801
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4/30/2009 14:30	3013	2.806759	21.939484	6.480719	0.49781409
4/30/2009 14:30	3014	2.806206	21.938507	6.479442	0.49771599
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4/30/2009 14:30	3020	2.80752	21.937042	6.482476	0.49794905
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4/30/2009 14:30	3028	2.805272	21.937042	6.477286	0.49755038
4/30/2009 14:30	3029	2.805272	21.93512	6.477286	0.49755038
4/30/2009 14:30	3030	2.805707	21.936096	6.478291	0.49762758
4/30/2009 14:30	3031	2.806255	21.937042	6.479557	0.49772483
4/30/2009 14:30	3032	2.805707	21.936584	6.478291	0.49762758
4/30/2009 14:30	3033	2.805927	21.936584	6.478799	0.4976666
4/30/2009 14:30	3034	2.806206	21.938995	6.479442	0.49771599
4/30/2009 14:30	3035	2.806481	21.936584	6.480078	0.49776485
4/30/2009 14:30	3036	2.806861	21.937531	6.480955	0.49783221
4/30/2009 14:30	3037	2.806641	21.938507	6.480446	0.49779312
4/30/2009 14:30	3038	2.805429	21.93512	6.47765	0.49757834
4/30/2009 14:30	3039	2.804014	21.937042	6.474382	0.49732731
4/30/2009 14:30	3040	2.805546	21.935608	6.477919	0.497599
4/30/2009 14:30	3041	2.804727	21.937531	6.476027	0.49745367
4/30/2009 14:30	3042	2.805161	21.938995	6.477031	0.49753079
4/30/2009 14:30	3043	2.805981	21.935608	6.478922	0.49767605
4/30/2009 14:30	3044	2.805822	21.937531	6.478557	0.49764801
4/30/2009 14:30	3045	2.805927	21.939484	6.478799	0.4976666
4/30/2009 14:30	3046	2.806641	21.936584	6.480446	0.49779312
4/30/2009 14:30	3047	2.805981	21.93512	6.478922	0.49767605
4/30/2009 14:30	3048	2.806698	21.938507	6.480578	0.49780325
4/30/2009 14:30	3049	2.807244	21.935608	6.48184	0.4979002
4/30/2009 14:30	3050	2.806531	21.934143	6.480193	0.49777368
4/30/2009 14:30	3051	2.806759	21.936096	6.480719	0.49781409
4/30/2009 14:30	3052	2.805655	21.937531	6.478171	0.49761836
4/30/2009 14:30	3053	2.8056	21.938995	6.478044	0.49760861
4/30/2009 14:30	3054	2.806314	21.935608	6.479693	0.49773527
4/30/2009 14:30	3055	2.805766	21.93512	6.478427	0.49763803
4/30/2009 14:30	3056	2.805218	21.937042	6.477161	0.49754078
4/30/2009 14:30	3057	2.806094	21.93512	6.479185	0.49769625
4/30/2009 14:30	3058	2.805429	21.937042	6.47765	0.49757834
4/30/2009 14:30	3059	2.804991	21.936096	6.476637	0.49750053
4/30/2009 14:31	3060	2.804727	21.936096	6.476027	0.49745367
4/30/2009 14:31	3061	2.806094	21.936584	6.479185	0.49769625
4/30/2009 14:31	3062	2.805161	21.934631	6.477031	0.49753079
4/30/2009 14:31	3063	2.805707	21.936096	6.478291	0.49762758
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4/30/2009 14:31	3066	2.805707	21.938019	6.478291	0.49762758
4/30/2009 14:31	3067	2.804942	21.934631	6.476524	0.49749185
4/30/2009 14:31	3068	2.804942	21.93512	6.476524	0.49749185
4/30/2009 14:31	3069	2.806698	21.935608	6.480578	0.49780325
4/30/2009 14:31	3070	2.806368	21.935608	6.479816	0.49774472
4/30/2009 14:31	3071	2.805161	21.93512	6.477031	0.49753079
4/30/2009 14:31	3072	2.807188	21.936096	6.48171	0.49789021
4/30/2009 14:31	3073	2.805218	21.935608	6.477161	0.49754078
4/30/2009 14:31	3074	2.804669	21.938019	6.475895	0.49744353
4/30/2009 14:31	3075	2.805655	21.936584	6.478171	0.49761836
4/30/2009 14:31	3076	2.805766	21.938019	6.478427	0.49763803
4/30/2009 14:31	3077	2.804669	21.936096	6.475895	0.49744353
4/30/2009 14:31	3078	2.804123	21.936584	6.474633	0.49734659
4/30/2009 14:31	3079	2.805546	21.937042	6.477919	0.497599
4/30/2009 14:31	3080	2.802588	21.937042	6.47109	0.49707444

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4/30/2009 14:31	3082	2.805218	21.93512	6.477161	0.49754078
4/30/2009 14:31	3083	2.806094	21.938019	6.479185	0.49769625
4/30/2009 14:31	3084	2.803735	21.937042	6.473737	0.49727777
4/30/2009 14:31	3085	2.803957	21.936584	6.474249	0.4973171
4/30/2009 14:31	3086	2.805106	21.938019	6.476903	0.49752096
4/30/2009 14:31	3087	2.803514	21.934143	6.473228	0.49723867
4/30/2009 14:31	3088	2.805218	21.938507	6.477161	0.49754078
4/30/2009 14:31	3089	2.80368	21.938507	6.473611	0.49726809
4/30/2009 14:31	3090	2.803957	21.934143	6.474249	0.4973171
4/30/2009 14:31	3091	2.803074	21.940948	6.472211	0.49716055
4/30/2009 14:31	3092	2.804445	21.938019	6.475377	0.49740374
4/30/2009 14:31	3093	2.805822	21.936584	6.478557	0.49764801
4/30/2009 14:31	3094	2.803303	21.937531	6.47274	0.49720118
4/30/2009 14:31	3095	2.803735	21.938507	6.473737	0.49727777
4/30/2009 14:31	3096	2.80385	21.935608	6.474003	0.4972982
4/30/2009 14:31	3097	2.804172	21.937042	6.474745	0.4973552
4/30/2009 14:31	3098	2.80385	21.935608	6.474003	0.4972982
4/30/2009 14:31	3099	2.803303	21.936096	6.47274	0.49720118
4/30/2009 14:31	3100	2.804123	21.93512	6.474633	0.49734659
4/30/2009 14:31	3101	2.802801	21.936584	6.471581	0.49711215
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4/30/2009 14:31	3103	2.803893	21.937531	6.474102	0.4973058
4/30/2009 14:31	3104	2.803621	21.938995	6.473475	0.49725764
4/30/2009 14:31	3105	2.804445	21.933167	6.475377	0.49740374
4/30/2009 14:31	3106	2.803575	21.933655	6.473367	0.49724934
4/30/2009 14:31	3107	2.803405	21.937531	6.472975	0.49721923
4/30/2009 14:31	3108	2.804991	21.935608	6.476637	0.49750053
4/30/2009 14:31	3109	2.804123	21.933167	6.474633	0.49734659
4/30/2009 14:31	3110	2.804123	21.936096	6.474633	0.49734659
4/30/2009 14:31	3111	2.80385	21.93512	6.474003	0.4972982
4/30/2009 14:31	3112	2.804064	21.93512	6.474496	0.49733607
4/30/2009 14:31	3113	2.80461	21.935608	6.475758	0.49743301
4/30/2009 14:31	3114	2.804831	21.933655	6.476267	0.49747211
4/30/2009 14:31	3115	2.805052	21.936096	6.476778	0.49751136
4/30/2009 14:31	3116	2.803018	21.936584	6.472081	0.49715056
4/30/2009 14:31	3117	2.803349	21.934631	6.472847	0.4972094
4/30/2009 14:31	3118	2.804831	21.935608	6.476267	0.49747211
4/30/2009 14:31	3119	2.803893	21.936096	6.474102	0.4973058
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4/30/2009 14:32	3122	2.80286	21.934631	6.471717	0.4971226
4/30/2009 14:32	3123	2.80385	21.936584	6.474003	0.4972982
4/30/2009 14:32	3124	2.804014	21.936584	6.474382	0.49732731
4/30/2009 14:32	3125	2.80368	21.933655	6.473611	0.49726809
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4/30/2009 14:32	3127	2.804669	21.935608	6.475895	0.49744353
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4/30/2009 14:32	3143	2.80461	21.934143	6.475758	0.49743301
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4/30/2009 14:32	3145	2.80379	21.937042	6.473864	0.49728752
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4/30/2009 14:32	3147	2.802748	21.937531	6.471457	0.49710263
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4/30/2009 14:32	3150	2.803405	21.933655	6.472975	0.49721923
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4/30/2009 14:34	3255	2.801209	21.932678	6.467906	0.49682986
4/30/2009 14:34	3256	2.80198	21.931702	6.469685	0.49696651
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4/30/2009 14:37	3477	2.796534	21.94873	6.457109	0.49600049
4/30/2009 14:37	3478	2.797139	21.942871	6.458508	0.49610796
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4/30/2009 14:38	3481	2.79622	21.938995	6.456385	0.49594488
4/30/2009 14:38	3482	2.794743	21.937531	6.452974	0.49568286
4/30/2009 14:38	3483	2.795567	21.937531	6.454876	0.49582897
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4/30/2009 14:38	3487	2.797095	21.935608	6.458406	0.49610012
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4/30/2009 14:41	3697	2.792824	21.937042	6.448544	0.49534257
4/30/2009 14:41	3698	2.792881	21.938019	6.448676	0.49535271
4/30/2009 14:41	3699	2.793591	21.942871	6.450316	0.49547869
4/30/2009 14:41	3700	2.792936	21.941437	6.448803	0.49536247
4/30/2009 14:41	3701	2.7937	21.939972	6.450567	0.49549797
4/30/2009 14:41	3702	2.792276	21.938995	6.44728	0.49524548
4/30/2009 14:41	3703	2.792602	21.938995	6.44803	0.49530309
4/30/2009 14:41	3704	2.79222	21.938995	6.44715	0.4952355
4/30/2009 14:41	3705	2.792987	21.94046	6.44892	0.49537146
4/30/2009 14:41	3706	2.79211	21.938019	6.446897	0.49521606
4/30/2009 14:41	3707	2.792824	21.937531	6.448544	0.49534257
4/30/2009 14:41	3708	2.792936	21.938507	6.448803	0.49536247
4/30/2009 14:41	3709	2.793648	21.941437	6.450447	0.49548875
4/30/2009 14:41	3710	2.792987	21.936584	6.44892	0.49537146
4/30/2009 14:41	3711	2.792936	21.938507	6.448803	0.49536247
4/30/2009 14:41	3712	2.790854	21.937042	6.443995	0.49499315
4/30/2009 14:41	3713	2.791613	21.938507	6.445747	0.49512772
4/30/2009 14:41	3714	2.79239	21.938507	6.447542	0.49526561
4/30/2009 14:41	3715	2.791727	21.939972	6.446011	0.495148
4/30/2009 14:41	3716	2.793376	21.936096	6.449819	0.49544051
4/30/2009 14:41	3717	2.792768	21.938507	6.448416	0.49533274
4/30/2009 14:41	3718	2.792276	21.940948	6.44728	0.49524548
4/30/2009 14:41	3719	2.792768	21.936584	6.448416	0.49533274
4/30/2009 14:42	3720	2.793268	21.94046	6.44957	0.49542139
4/30/2009 14:42	3721	2.791839	21.937531	6.446269	0.49516782
4/30/2009 14:42	3722	2.791952	21.938507	6.446531	0.49518795
4/30/2009 14:42	3723	2.791348	21.935608	6.445137	0.49508087
4/30/2009 14:42	3724	2.791068	21.939972	6.444489	0.49503109
4/30/2009 14:42	3725	2.791348	21.940948	6.445137	0.49508087
4/30/2009 14:42	3726	2.7914	21.938995	6.445256	0.49509001
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4/30/2009 14:42	3731	2.791509	21.939972	6.445507	0.49510929
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4/30/2009 14:42	3736	2.792056	21.937042	6.446771	0.49520638
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4/30/2009 14:42	3740	2.7908	21.938019	6.443871	0.49498362
4/30/2009 14:42	3741	2.791839	21.93512	6.446269	0.49516782
4/30/2009 14:42	3742	2.791283	21.938019	6.444985	0.49506919
4/30/2009 14:42	3743	2.79145	21.937042	6.445371	0.49509884
4/30/2009 14:42	3744	2.79222	21.935608	6.44715	0.4952355
4/30/2009 14:42	3745	2.7908	21.935608	6.443871	0.49498362
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4/30/2009 14:42	3752	2.79239	21.936096	6.447542	0.49526561
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4/30/2009 14:42	3756	2.792661	21.933655	6.448167	0.49531362
4/30/2009 14:42	3757	2.79211	21.937042	6.446897	0.49521606
4/30/2009 14:42	3758	2.791892	21.935608	6.446392	0.49517727
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4/30/2009 14:42	3762	2.791068	21.933655	6.444489	0.49503109
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4/30/2009 14:42	3765	2.791562	21.937531	6.44563	0.49511874
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4/30/2009 14:42	3767	2.79222	21.93219	6.44715	0.4952355
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4/30/2009 14:42	3774	2.79239	21.937042	6.447542	0.49526561
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4/30/2009 14:42	3776	2.792768	21.936584	6.448416	0.49533274
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4/30/2009 14:43	3782	2.790083	21.936096	6.442215	0.49485642

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4/30/2009 14:43	3796	2.791562	21.93512	6.44563	0.49511874
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4/30/2009 14:43	3820	2.791509	21.932678	6.445507	0.49510929
4/30/2009 14:43	3821	2.792164	21.93219	6.44702	0.49522551
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4/30/2009 14:45	3921	2.791952	21.929291	6.446531	0.49518795
4/30/2009 14:45	3922	2.788819	21.928314	6.439298	0.49463235
4/30/2009 14:45	3923	2.790518	21.930756	6.443219	0.49493354
4/30/2009 14:45	3924	2.790131	21.928314	6.442325	0.49486486
4/30/2009 14:45	3925	2.789922	21.930267	6.441843	0.49482784
4/30/2009 14:45	3926	2.789481	21.928802	6.440825	0.49474964
4/30/2009 14:45	3927	2.788597	21.925415	6.438785	0.49459294
4/30/2009 14:45	3928	2.789368	21.930756	6.440564	0.49472959
4/30/2009 14:45	3929	2.790682	21.928314	6.443598	0.49496265
4/30/2009 14:45	3930	2.790736	21.931244	6.443723	0.49497225
4/30/2009 14:45	3931	2.790299	21.928314	6.442715	0.49489482
4/30/2009 14:45	3932	2.789042	21.930756	6.439813	0.49467191
4/30/2009 14:45	3933	2.789922	21.928802	6.441843	0.49482784
4/30/2009 14:45	3934	2.790083	21.928314	6.442215	0.49485642
4/30/2009 14:45	3935	2.790682	21.927826	6.443598	0.49496265
4/30/2009 14:45	3936	2.78926	21.928802	6.440315	0.49471047
4/30/2009 14:45	3937	2.789696	21.931244	6.441321	0.49478774
4/30/2009 14:45	3938	2.79019	21.931702	6.442461	0.49487531
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4/30/2009 14:45	3940	2.789481	21.930267	6.440825	0.49474964
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4/30/2009 14:45	3942	2.788713	21.929291	6.439051	0.49461337
4/30/2009 14:45	3943	2.790131	21.929779	6.442325	0.49486486
4/30/2009 14:45	3944	2.7908	21.926361	6.443871	0.49498362

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4/30/2009 14:45	3946	2.789428	21.927338	6.440702	0.49474019
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4/30/2009 14:45	3948	2.78997	21.927826	6.441955	0.49483644
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4/30/2009 14:45	3951	2.788713	21.927826	6.439051	0.49461337
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4/30/2009 14:45	3957	2.791997	21.927338	6.446635	0.49519594
4/30/2009 14:45	3958	2.788984	21.927338	6.439679	0.49466161
4/30/2009 14:45	3959	2.7908	21.929291	6.443871	0.49498362
4/30/2009 14:46	3960	2.791509	21.929779	6.445507	0.49510929
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4/30/2009 14:46	3963	2.790518	21.929779	6.443219	0.49493354
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4/30/2009 14:46	3973	2.79063	21.929291	6.443479	0.49495351
4/30/2009 14:46	3974	2.790083	21.929779	6.442215	0.49485642
4/30/2009 14:46	3975	2.789922	21.928314	6.441843	0.49482784
4/30/2009 14:46	3976	2.79058	21.926361	6.443362	0.49494452
4/30/2009 14:46	3977	2.791016	21.928802	6.444368	0.4950218
4/30/2009 14:46	3978	2.79025	21.927826	6.4426	0.49488599
4/30/2009 14:46	3979	2.7914	21.928314	6.445256	0.49509001
4/30/2009 14:46	3980	2.789809	21.929779	6.441583	0.49480787
4/30/2009 14:46	3981	2.79019	21.927338	6.442461	0.49487531
4/30/2009 14:46	3982	2.791234	21.928314	6.444873	0.49506059
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4/30/2009 14:46	3993	2.790083	21.928314	6.442215	0.49485642
4/30/2009 14:46	3994	2.78926	21.927826	6.440315	0.49471047
4/30/2009 14:46	3995	2.788876	21.929291	6.439427	0.49464226
4/30/2009 14:46	3996	2.790412	21.927826	6.442975	0.49491479
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4/30/2009 14:46	3998	2.789534	21.927826	6.440947	0.49475901

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4/30/2009 14:46	4008	2.789428	21.930756	6.440702	0.49474019
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4/30/2009 14:49	4142	2.788005	21.925415	6.437417	0.49448786
4/30/2009 14:49	4143	2.78926	21.92395	6.440315	0.49471047
4/30/2009 14:49	4144	2.789042	21.92395	6.439813	0.49467191
4/30/2009 14:49	4145	2.789481	21.925415	6.440825	0.49474964
4/30/2009 14:49	4146	2.788876	21.924896	6.439427	0.49464226
4/30/2009 14:49	4147	2.787832	21.924896	6.437018	0.49445721
4/30/2009 14:49	4148	2.788933	21.925415	6.439559	0.4946524
4/30/2009 14:49	4149	2.787506	21.922516	6.436265	0.49439937
4/30/2009 14:49	4150	2.789481	21.921539	6.440825	0.49474964
4/30/2009 14:49	4151	2.788819	21.927338	6.439298	0.49463235
4/30/2009 14:49	4152	2.789809	21.924896	6.441583	0.49480787
4/30/2009 14:49	4153	2.789696	21.925415	6.441321	0.49478774
4/30/2009 14:49	4154	2.789696	21.925873	6.441321	0.49478774
4/30/2009 14:49	4155	2.790024	21.926849	6.442078	0.49484589
4/30/2009 14:49	4156	2.790736	21.926361	6.443723	0.49497225
4/30/2009 14:49	4157	2.790299	21.923492	6.442715	0.49489482
4/30/2009 14:49	4158	2.790353	21.925415	6.442838	0.49490427
4/30/2009 14:49	4159	2.79025	21.927338	6.4426	0.49488599
4/30/2009 14:49	4160	2.789644	21.927826	6.441202	0.4947786

4/30/2009 14:49	4161	2.790083	21.925415	6.442215	0.49485642
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4/30/2009 14:49	4163	2.788005	21.927338	6.437417	0.49448786
4/30/2009 14:49	4164	2.789368	21.92395	6.440564	0.49472959
4/30/2009 14:49	4165	2.78926	21.92395	6.440315	0.49471047
4/30/2009 14:49	4166	2.788766	21.925415	6.439174	0.49462282
4/30/2009 14:49	4167	2.789042	21.927338	6.439813	0.49467191
4/30/2009 14:49	4168	2.78926	21.925415	6.440315	0.49471047
4/30/2009 14:49	4169	2.789751	21.922516	6.441449	0.49479757
4/30/2009 14:49	4170	2.788273	21.921539	6.438036	0.49453541
4/30/2009 14:49	4171	2.788005	21.92395	6.437417	0.49448786
4/30/2009 14:49	4172	2.789809	21.924408	6.441583	0.49480787
4/30/2009 14:49	4173	2.789696	21.927338	6.441321	0.49478774
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4/30/2009 14:49	4175	2.788597	21.927338	6.438785	0.49459294
4/30/2009 14:49	4176	2.78997	21.923004	6.441955	0.49483644
4/30/2009 14:49	4177	2.790024	21.924896	6.442078	0.49484589
4/30/2009 14:49	4178	2.7869	21.926361	6.434865	0.49429183
4/30/2009 14:49	4179	2.789696	21.924896	6.441321	0.49478774
4/30/2009 14:49	4180	2.788713	21.92395	6.439051	0.49461337
4/30/2009 14:49	4181	2.788216	21.924896	6.437903	0.49452519
4/30/2009 14:49	4182	2.789314	21.925873	6.44044	0.49472007
4/30/2009 14:49	4183	2.789199	21.922516	6.440174	0.49469964
4/30/2009 14:49	4184	2.787832	21.925873	6.437018	0.49445721
4/30/2009 14:49	4185	2.789589	21.928314	6.441075	0.49476885
4/30/2009 14:49	4186	2.788381	21.92395	6.438284	0.49455446
4/30/2009 14:49	4187	2.789042	21.924896	6.439813	0.49467191
4/30/2009 14:49	4188	2.789861	21.926361	6.441702	0.49481701
4/30/2009 14:49	4189	2.79025	21.924408	6.4426	0.49488599
4/30/2009 14:49	4190	2.788766	21.924408	6.439174	0.49462282
4/30/2009 14:49	4191	2.789481	21.922028	6.440825	0.49474964
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4/30/2009 14:49	4194	2.79025	21.921051	6.4426	0.49488599
4/30/2009 14:49	4195	2.79058	21.926361	6.443362	0.49494452
4/30/2009 14:49	4196	2.788216	21.924896	6.437903	0.49452519
4/30/2009 14:49	4197	2.790854	21.926361	6.443995	0.49499315
4/30/2009 14:49	4198	2.789481	21.926361	6.440825	0.49474964
4/30/2009 14:49	4199	2.789481	21.923004	6.440825	0.49474964
4/30/2009 14:50	4200	2.789481	21.92395	6.440825	0.49474964
4/30/2009 14:50	4201	2.79019	21.923492	6.442461	0.49487531
4/30/2009 14:50	4202	2.79025	21.921539	6.4426	0.49488599
4/30/2009 14:50	4203	2.789861	21.924896	6.441702	0.49481701
4/30/2009 14:50	4204	2.789644	21.92395	6.441202	0.4947786
4/30/2009 14:50	4205	2.788492	21.921539	6.438542	0.49457427
4/30/2009 14:50	4206	2.789147	21.923492	6.440055	0.4946905
4/30/2009 14:50	4207	2.790353	21.924896	6.442838	0.49490427
4/30/2009 14:50	4208	2.788654	21.923492	6.438917	0.49460308
4/30/2009 14:50	4209	2.790083	21.922028	6.442215	0.49485642
4/30/2009 14:50	4210	2.788492	21.922028	6.438542	0.49457427
4/30/2009 14:50	4211	2.789861	21.924408	6.441702	0.49481701
4/30/2009 14:50	4212	2.789861	21.925415	6.441702	0.49481701
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4/30/2009 14:50	4217	2.789147	21.925415	6.440055	0.4946905
4/30/2009 14:50	4218	2.789922	21.92395	6.441843	0.49482784
4/30/2009 14:50	4219	2.787722	21.925873	6.436763	0.49443762
4/30/2009 14:50	4220	2.788876	21.925415	6.439427	0.49464226
4/30/2009 14:50	4221	2.79063	21.925415	6.443479	0.49495351
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4/30/2009 14:50	4226	2.789861	21.924896	6.441702	0.49481701
4/30/2009 14:50	4227	2.789428	21.925873	6.440702	0.49474019
4/30/2009 14:50	4228	2.79019	21.921539	6.442461	0.49487531
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4/30/2009 14:50	4230	2.788984	21.923004	6.439679	0.49466161
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4/30/2009 14:50	4232	2.78997	21.923492	6.441955	0.49483644
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4/30/2009 14:50	4248	2.78843	21.923004	6.438399	0.49456329
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4/30/2009 14:50	4256	2.790468	21.924408	6.443105	0.49492478
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4/30/2009 14:51	4265	2.788819	21.923492	6.439298	0.49463235
4/30/2009 14:51	4266	2.78843	21.921051	6.438399	0.49456329
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4/30/2009 14:52	4333	2.788381	21.922516	6.438284	0.49455446
4/30/2009 14:52	4334	2.788005	21.924408	6.437417	0.49448786
4/30/2009 14:52	4335	2.788876	21.924896	6.439427	0.49464226
4/30/2009 14:52	4336	2.788549	21.923004	6.438674	0.49458441
4/30/2009 14:52	4337	2.788381	21.921539	6.438284	0.49455446
4/30/2009 14:52	4338	2.788933	21.92395	6.439559	0.4946524
4/30/2009 14:52	4339	2.788216	21.922028	6.437903	0.49452519
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4/30/2009 14:52	4359	2.788713	21.921539	6.439051	0.49461337
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4/30/2009 14:52	4363	2.787566	21.922516	6.436404	0.49441005
4/30/2009 14:52	4364	2.787506	21.924408	6.436265	0.49439937
4/30/2009 14:52	4365	2.78843	21.923492	6.438399	0.49456329
4/30/2009 14:52	4366	2.788005	21.923004	6.437417	0.49448786
4/30/2009 14:52	4367	2.788005	21.923492	6.437417	0.49448786
4/30/2009 14:52	4368	2.788984	21.920563	6.439679	0.49466161
4/30/2009 14:52	4369	2.789809	21.923004	6.441583	0.49480787
4/30/2009 14:52	4370	2.789314	21.925415	6.44044	0.49472007
4/30/2009 14:52	4371	2.78997	21.923004	6.441955	0.49483644
4/30/2009 14:52	4372	2.789147	21.921051	6.440055	0.4946905
4/30/2009 14:52	4373	2.790131	21.923004	6.442325	0.49486486
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4/30/2009 14:52	4375	2.787785	21.921539	6.436908	0.49444876
4/30/2009 14:52	4376	2.789199	21.923004	6.440174	0.49469964

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4/30/2009 14:53	4381	2.78843	21.924896	6.438399	0.49456329
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4/30/2009 14:53	4389	2.787506	21.922516	6.436265	0.49439937
4/30/2009 14:53	4390	2.788053	21.925415	6.437527	0.49449631
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4/30/2009 14:53	4393	2.788933	21.924896	6.439559	0.4946524
4/30/2009 14:53	4394	2.788273	21.921539	6.438036	0.49453541
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4/30/2009 14:53	4396	2.788216	21.922028	6.437903	0.49452519
4/30/2009 14:53	4397	2.786371	21.922028	6.433645	0.49419811
4/30/2009 14:53	4398	2.788164	21.92395	6.437785	0.49451613
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4/30/2009 14:53	4401	2.788984	21.92395	6.439679	0.49466161
4/30/2009 14:53	4402	2.788713	21.92395	6.439051	0.49461337
4/30/2009 14:53	4403	2.788597	21.921539	6.438785	0.49459294
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4/30/2009 14:53	4421	2.788597	21.921539	6.438785	0.49459294
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4/30/2009 14:53	4436	2.788654	21.920074	6.438917	0.49460308
4/30/2009 14:53	4437	2.788492	21.918579	6.438542	0.49457427
4/30/2009 14:53	4438	2.788005	21.921051	6.437417	0.49448786
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4/30/2009 14:54	4475	2.7869	21.921539	6.434865	0.49429183
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4/30/2009 14:54	4481	2.787336	21.921539	6.435873	0.49436926
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4/30/2009 14:54	4487	2.787336	21.920074	6.435873	0.49436926
4/30/2009 14:54	4488	2.788329	21.922516	6.438166	0.49454539
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4/30/2009 14:54	4491	2.78723	21.925873	6.435629	0.49435051
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4/30/2009 14:56	4583	2.787665	21.920074	6.436633	0.49442764
4/30/2009 14:56	4584	2.788005	21.920074	6.437417	0.49448786
4/30/2009 14:56	4585	2.787336	21.921051	6.435873	0.49436926
4/30/2009 14:56	4586	2.788549	21.921051	6.438674	0.49458441
4/30/2009 14:56	4587	2.786685	21.920074	6.434369	0.49425373
4/30/2009 14:56	4588	2.788549	21.921539	6.438674	0.49458441
4/30/2009 14:56	4589	2.787566	21.918579	6.436404	0.49441005
4/30/2009 14:56	4590	2.78641	21.921051	6.433735	0.49420503
4/30/2009 14:56	4591	2.788216	21.918579	6.437903	0.49452519
4/30/2009 14:56	4592	2.7891	21.919067	6.439945	0.49468205

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4/30/2009 14:56	4594	2.787566	21.922028	6.436404	0.49441005
4/30/2009 14:56	4595	2.787175	21.920074	6.435501	0.49434068
4/30/2009 14:56	4596	2.786246	21.921051	6.433357	0.49417599
4/30/2009 14:56	4597	2.787722	21.919586	6.436763	0.49443762
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4/30/2009 14:56	4599	2.788492	21.919067	6.438542	0.49457427
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4/30/2009 14:56	4612	2.789368	21.924896	6.440564	0.49472959
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4/30/2009 14:56	4615	2.787613	21.917175	6.436512	0.49441834
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4/30/2009 15:00	4801	2.786627	21.916687	6.434235	0.49424343
4/30/2009 15:00	4802	2.787059	21.920563	6.435233	0.4943201
4/30/2009 15:00	4803	2.788381	21.919067	6.438284	0.49455446
4/30/2009 15:00	4804	2.787566	21.920563	6.436404	0.49441005
4/30/2009 15:00	4805	2.787948	21.919067	6.437285	0.49447772
4/30/2009 15:00	4806	2.787665	21.920563	6.436633	0.49442764
4/30/2009 15:00	4807	2.788381	21.916199	6.438284	0.49455446
4/30/2009 15:00	4808	2.788053	21.919067	6.437527	0.49449631

4/30/2009 15:00	4809	2.788766	21.919067	6.439174	0.49462282
4/30/2009 15:00	4810	2.787722	21.917664	6.436763	0.49443762
4/30/2009 15:00	4811	2.786846	21.919586	6.434741	0.4942823
4/30/2009 15:00	4812	2.78843	21.919586	6.438399	0.49456329
4/30/2009 15:00	4813	2.78843	21.918579	6.438399	0.49456329
4/30/2009 15:00	4814	2.788766	21.917175	6.439174	0.49462282
4/30/2009 15:00	4815	2.788597	21.917175	6.438785	0.49459294
4/30/2009 15:00	4816	2.788216	21.918579	6.437903	0.49452519
4/30/2009 15:00	4817	2.787665	21.917175	6.436633	0.49442764
4/30/2009 15:00	4818	2.788273	21.920563	6.438036	0.49453541
4/30/2009 15:00	4819	2.788492	21.917664	6.438542	0.49457427
4/30/2009 15:00	4820	2.787282	21.917175	6.435748	0.49435965
4/30/2009 15:00	4821	2.788984	21.918579	6.439679	0.49466161
4/30/2009 15:00	4822	2.787948	21.917175	6.437285	0.49447772
4/30/2009 15:00	4823	2.7891	21.919067	6.439945	0.49468205
4/30/2009 15:00	4824	2.788053	21.918579	6.437527	0.49449631
4/30/2009 15:00	4825	2.788819	21.919067	6.439298	0.49463235
4/30/2009 15:00	4826	2.786573	21.919067	6.434112	0.49423399
4/30/2009 15:00	4827	2.788654	21.915741	6.438917	0.49460308
4/30/2009 15:00	4828	2.787722	21.920074	6.436763	0.49443762
4/30/2009 15:00	4829	2.789368	21.919586	6.440564	0.49472959
4/30/2009 15:00	4830	2.788819	21.918579	6.439298	0.49463235
4/30/2009 15:00	4831	2.787785	21.917664	6.436908	0.49444876
4/30/2009 15:00	4832	2.787566	21.920074	6.436404	0.49441005
4/30/2009 15:00	4833	2.788381	21.918091	6.438284	0.49455446
4/30/2009 15:00	4834	2.790083	21.916199	6.442215	0.49485642
4/30/2009 15:00	4835	2.788654	21.915741	6.438917	0.49460308
4/30/2009 15:00	4836	2.788713	21.920074	6.439051	0.49461337
4/30/2009 15:00	4837	2.788876	21.915741	6.439427	0.49464226
4/30/2009 15:00	4838	2.791016	21.917664	6.444368	0.4950218
4/30/2009 15:00	4839	2.790854	21.920563	6.443995	0.49499315
4/30/2009 15:00	4840	2.789368	21.918091	6.440564	0.49472959
4/30/2009 15:00	4841	2.787397	21.919586	6.436014	0.49438009
4/30/2009 15:00	4842	2.788005	21.917664	6.437417	0.49448786
4/30/2009 15:00	4843	2.786188	21.918579	6.433222	0.49416562
4/30/2009 15:00	4844	2.762993	21.919067	6.379665	0.49005166
4/30/2009 15:00	4845	2.771714	21.920563	6.399802	0.49159848
4/30/2009 15:00	4846	2.777189	21.919586	6.412444	0.49256957
4/30/2009 15:00	4847.002	2.781469	21.915741	6.422327	0.49332873
4/30/2009 15:00	4848.516	2.784362	21.939484	6.429005	0.49384169
4/30/2009 15:00	4849.113	2.78686	21.936584	6.434775	0.49428491
4/30/2009 15:00	4850	2.789223	21.929779	6.440229	0.49470386
4/30/2009 15:00	4851	2.786021	21.923004	6.432837	0.49413605
4/30/2009 15:00	4852	2.78679	21.923492	6.434612	0.49427239
4/30/2009 15:00	4853	2.787506	21.923004	6.436265	0.49439937
4/30/2009 15:00	4854	2.788492	21.921539	6.438542	0.49457427
4/30/2009 15:00	4855	2.788005	21.919067	6.437417	0.49448786
4/30/2009 15:00	4856	2.787336	21.924896	6.435873	0.49436926
4/30/2009 15:00	4857	2.789042	21.922028	6.439813	0.49467191
4/30/2009 15:00	4858	2.78723	21.922028	6.435629	0.49435051
4/30/2009 15:00	4859	2.787832	21.921051	6.437018	0.49445721
4/30/2009 15:01	4860	2.787885	21.921051	6.43714	0.49446658
4/30/2009 15:01	4861	2.789042	21.921539	6.439813	0.49467191
4/30/2009 15:01	4862	2.788549	21.919067	6.438674	0.49458441

4/30/2009 15:01	4863	2.787665	21.920563	6.436633	0.49442764
4/30/2009 15:01	4864	2.787336	21.920074	6.435873	0.49436926
4/30/2009 15:01	4865	2.78843	21.923004	6.438399	0.49456329
4/30/2009 15:01	4866	2.791145	21.919586	6.444668	0.49504484
4/30/2009 15:01	4867.066	2.790945	21.930267	6.444206	0.49500935
4/30/2009 15:01	4868	2.791367	21.925415	6.445179	0.49508409
4/30/2009 15:01	4869	2.791469	21.920563	6.445415	0.49510222
4/30/2009 15:01	4870	2.787566	21.921539	6.436404	0.49441005
4/30/2009 15:01	4871	2.789314	21.922516	6.44044	0.49472007
4/30/2009 15:01	4872	2.788492	21.922516	6.438542	0.49457427
4/30/2009 15:01	4873	2.78926	21.922028	6.440315	0.49471047
4/30/2009 15:01	4874	2.789147	21.923004	6.440055	0.4946905
4/30/2009 15:01	4875	2.788273	21.922516	6.438036	0.49453541
4/30/2009 15:01	4876	2.787059	21.916687	6.435233	0.4943201
4/30/2009 15:01	4877	2.798289	21.920074	6.461163	0.4963119
4/30/2009 15:01	4878	2.788329	21.923492	6.438166	0.49454539
4/30/2009 15:01	4879	2.787785	21.920563	6.436908	0.49444876
4/30/2009 15:01	4880	2.788654	21.922028	6.438917	0.49460308
4/30/2009 15:01	4881	2.787175	21.923492	6.435501	0.49434068
4/30/2009 15:01	4882.015	2.789199	21.919586	6.440174	0.49469964
4/30/2009 15:01	4883	2.789481	21.923004	6.440825	0.49474964
4/30/2009 15:01	4884	2.787722	21.922028	6.436763	0.49443762
4/30/2009 15:01	4885	2.788053	21.920563	6.437527	0.49449631
4/30/2009 15:01	4886	2.788273	21.925873	6.438036	0.49453541
4/30/2009 15:01	4887	2.789147	21.924408	6.440055	0.4946905
4/30/2009 15:01	4888	2.788984	21.921051	6.439679	0.49466161
4/30/2009 15:01	4889	2.787397	21.92395	6.436014	0.49438009
4/30/2009 15:01	4890	2.788549	21.921051	6.438674	0.49458441
4/30/2009 15:01	4891	2.78997	21.921539	6.441955	0.49483644
4/30/2009 15:01	4892	2.788424	21.923492	6.438386	0.49456229
4/30/2009 15:01	4893	2.790448	21.920563	6.443058	0.49492117
4/30/2009 15:01	4894.091	2.790719	21.920074	6.443684	0.49496926
4/30/2009 15:01	4895.012	2.790536	21.923004	6.443261	0.49493676
4/30/2009 15:01	4896	2.789883	21.921051	6.441752	0.49482085
4/30/2009 15:01	4897	2.790317	21.922516	6.442754	0.49489782
4/30/2009 15:01	4898	2.791367	21.967651	6.445179	0.49508409
4/30/2009 15:01	4899.029	2.789821	21.933167	6.441609	0.49480987
4/30/2009 15:01	4900	2.789937	21.927826	6.441878	0.49483053
4/30/2009 15:01	4901	2.79087	21.926361	6.444031	0.49499591
4/30/2009 15:01	4902	2.797139	21.926361	6.458508	0.49610796
4/30/2009 15:01	4903.033	2.790377	21.936096	6.442893	0.4949085
4/30/2009 15:01	4904	2.790653	21.925873	6.443532	0.49495758
4/30/2009 15:01	4905	2.790817	21.927338	6.443911	0.49498669
4/30/2009 15:01	4906	2.800469	21.926361	6.466197	0.49669858
4/30/2009 15:01	4907.036	2.790099	21.934143	6.442253	0.49485933
4/30/2009 15:01	4908	2.79001	21.928802	6.442048	0.49484359
4/30/2009 15:01	4909	2.789773	21.926849	6.441499	0.49480142
4/30/2009 15:01	4910	2.788654	21.927338	6.438917	0.49460308
4/30/2009 15:01	4911	2.790554	21.922516	6.443303	0.49493999
4/30/2009 15:01	4912	2.790667	21.929291	6.443563	0.49495996
4/30/2009 15:01	4913	2.788778	21.924896	6.439203	0.49462505
4/30/2009 15:01	4914	2.790719	21.92395	6.443684	0.49496926
4/30/2009 15:01	4915	2.791367	21.968628	6.445179	0.49508409
4/30/2009 15:01	4916	2.791198	21.937042	6.444789	0.49505414

4/30/2009 15:01	4917	2.788492	21.93219	6.438542	0.49457427
4/30/2009 15:01	4918	2.789922	21.926849	6.441843	0.49482784
4/30/2009 15:01	4919	2.788713	21.926361	6.439051	0.49461337
4/30/2009 15:02	4920	2.788876	21.928802	6.439427	0.49464226
4/30/2009 15:02	4921	2.788101	21.929291	6.437639	0.49450491
4/30/2009 15:02	4922	2.788053	21.927826	6.437527	0.49449631
4/30/2009 15:02	4923	2.788053	21.928314	6.437527	0.49449631
4/30/2009 15:02	4924	2.79063	21.927338	6.443479	0.49495351
4/30/2009 15:02	4925	2.788492	21.926361	6.438542	0.49457427
4/30/2009 15:02	4926	2.788216	21.928314	6.437903	0.49452519
4/30/2009 15:02	4927	2.787397	21.928314	6.436014	0.49438009
4/30/2009 15:02	4928	2.788549	21.929291	6.438674	0.49458441
4/30/2009 15:02	4929	2.790226	21.927826	6.442545	0.49488176
4/30/2009 15:02	4930	2.787885	21.931244	6.43714	0.49446658
4/30/2009 15:02	4931	2.789677	21.926849	6.441277	0.49478436
4/30/2009 15:02	4932.038	2.791249	21.92395	6.444908	0.49506328
4/30/2009 15:02	4933	2.790226	21.929291	6.442545	0.49488176
4/30/2009 15:02	4934	2.7891	21.924408	6.439945	0.49468205
4/30/2009 15:02	4935	2.790995	21.927338	6.44432	0.49501811
4/30/2009 15:02	4936	2.788216	21.928314	6.437903	0.49452519
4/30/2009 15:02	4937	2.788597	21.927826	6.438785	0.49459294
4/30/2009 15:02	4938	2.79019	21.927826	6.442461	0.49487531
4/30/2009 15:02	4939	2.788381	21.925415	6.438284	0.49455446
4/30/2009 15:02	4940	2.788984	21.926849	6.439679	0.49466161
4/30/2009 15:02	4941	2.787885	21.927826	6.43714	0.49446658
4/30/2009 15:02	4942.005	2.797781	21.929291	6.45999	0.4962218
4/30/2009 15:02	4943	2.789589	21.930756	6.441075	0.49476885
				13.018352	1

Report Date:	5/4/2009 10:50
Report User Name:	bengard
Report Computer Name:	CA3L-BENGARD2

Log File Properties

File Name	HVW-5 ST HVW-6 2009-04-30 15.00.09.wsl
Create Date	4/30/2009 15:00

Device Properties

Device	Level TROLL® 700
Site	TSA
Device Name	
Serial Number	134251
Firmware Version	2.07
Hardware Version	3

Log Configuration

Log Name	HVW-5 ST HVW-6
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Version	5.5.7.0
Create Date	############
Notes Size(bytes)	4096
Type	Fast Linear
Overwrite when full	Disabled
Scheduled Start Time	############
Scheduled Stop Time	No Stop Time
Interval	Days: 0 hrs: 00 mins: 00 secs: 01

Level Reference Settings At Log Creation

Level Measuren	Depth
Specific Gra	0.999

Log Notes:

Date and Time	Note
4/30/2009 14:58	Suspend Command
4/30/2009 14:58	Log Download - Used Battery: 7% Used Memory: 17% Name: Unknown

Log Data:

Record Count 4720

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 134251 Pressure (PSI)	Sensor: Pres 69 SN#: 134251 Temperature	Sensor: Pres 69ft SN#: 134251 Depth (ft)	Normalized
4/30/2009 13:40	0	2.729984	22.832489	6.303449	0.9956737
4/30/2009 13:40	1	2.73193	22.837341	6.307941	0.9963833
4/30/2009 13:40	2	2.731071	22.832916	6.30596	0.9960703
4/30/2009 13:40	3	2.730143	22.830994	6.303815	0.9957315

4/30/2009 13:40	4	2.73052	22.826172	6.304687	0.9958693
4/30/2009 13:40	5	2.729656	22.82663	6.302692	0.9955541
4/30/2009 13:40	6	2.732073	22.820801	6.308271	0.9964354
4/30/2009 13:40	7	2.730822	22.815491	6.305383	0.9959792
4/30/2009 13:40	8	2.729771	22.815491	6.302956	0.9955958
4/30/2009 13:40	9	2.72917	22.808685	6.301569	0.9953768
4/30/2009 13:40	10	2.730202	22.807709	6.303951	0.995753
4/30/2009 13:40	11	2.728849	22.800934	6.300828	0.9952597
4/30/2009 13:40	12	2.730364	22.795593	6.304326	0.9958122
4/30/2009 13:40	13	2.730875	22.791199	6.305506	0.9959986
4/30/2009 13:40	14	2.729439	22.788269	6.30219	0.9954748
4/30/2009 13:40	15	2.731199	22.783936	6.306254	0.9961168
4/30/2009 13:40	16	2.729229	22.781494	6.301705	0.9953982
4/30/2009 13:40	17	2.730907	22.777649	6.305581	0.9960105
4/30/2009 13:40	18	2.727919	22.77179	6.29868	0.9949204
4/30/2009 13:40	19	2.729876	22.769348	6.303198	0.9956341
4/30/2009 13:40	20	2.729818	22.768372	6.303066	0.9956132
4/30/2009 13:40	21	2.729771	22.761597	6.302956	0.9955958
4/30/2009 13:40	22	2.730303	22.758698	6.304184	0.9957898
4/30/2009 13:40	23	2.728867	22.753845	6.300869	0.9952662
4/30/2009 13:40	24	2.729006	22.748993	6.30119	0.9953169
4/30/2009 13:40	25	2.729929	22.743652	6.303321	0.9956535
4/30/2009 13:40	26	2.729948	22.741699	6.303366	0.9956606
4/30/2009 13:40	27	2.728706	22.735901	6.300498	0.9952076
4/30/2009 13:40	28	2.731152	22.734436	6.306145	0.9960996
4/30/2009 13:40	29	2.729771	22.729584	6.302956	0.9955958
4/30/2009 13:40	30	2.728565	22.725189	6.300172	0.9951561
4/30/2009 13:40	31	2.730173	22.721802	6.303885	0.9957426
4/30/2009 13:40	32	2.728197	22.716492	6.299323	0.995022
4/30/2009 13:40	33	2.729113	22.715485	6.301437	0.9953559
4/30/2009 13:40	34	2.727703	22.713562	6.298182	0.9948418
4/30/2009 13:40	35	2.731419	22.70578	6.306761	0.9961969
4/30/2009 13:40	36	2.728363	22.7034	6.299706	0.9950825
4/30/2009 13:40	37	2.728895	22.699982	6.300934	0.9952765
4/30/2009 13:40	38	2.728849	22.695587	6.300828	0.9952597
4/30/2009 13:40	39	2.729357	22.693695	6.302001	0.995445
4/30/2009 13:40	40	2.728817	22.688354	6.300754	0.995248
4/30/2009 13:40	41	2.73098	22.684448	6.305748	0.9960369
4/30/2009 13:40	42	2.729576	22.680573	6.302506	0.9955248
4/30/2009 13:40	43	2.730875	22.677643	6.305506	0.9959986
4/30/2009 13:40	44	2.728849	22.676697	6.300828	0.9952597
4/30/2009 13:40	45	2.729513	22.668945	6.302361	0.9955019
4/30/2009 13:40	46	2.727837	22.669403	6.29849	0.9948904
4/30/2009 13:40	47	2.730228	22.662628	6.304013	0.9957628
4/30/2009 13:40	48	2.729898	22.655334	6.303251	0.9956424
4/30/2009 13:40	49	2.728979	22.654846	6.301128	0.9953071
4/30/2009 13:40	50	2.728598	22.652893	6.300248	0.9951681
4/30/2009 13:40	51	2.728651	22.648529	6.300371	0.9951875
4/30/2009 13:40	52	2.729734	22.645142	6.302872	0.9955826
4/30/2009 13:40	53	2.730385	22.639343	6.304374	0.9958198
4/30/2009 13:40	54	2.729818	22.638367	6.303066	0.9956132
4/30/2009 13:40	55	2.729357	22.633514	6.302001	0.995445
4/30/2009 13:40	56	2.728676	22.630585	6.300428	0.9951965
4/30/2009 13:40	57	2.729031	22.626251	6.301247	0.9953259

4/30/2009 13:40	58	2.728676	22.622833	6.300428	0.9951965
4/30/2009 13:40	59	2.730059	22.62088	6.303621	0.9957009
4/30/2009 13:41	60	2.728243	22.61554	6.299428	0.9950386
4/30/2009 13:41	61	2.728756	22.613129	6.300613	0.9952258
4/30/2009 13:41	62	2.727432	22.60733	6.297556	0.9947429
4/30/2009 13:41	63	2.729734	22.602936	6.302872	0.9955826
4/30/2009 13:41	64	2.729143	22.601013	6.301507	0.995367
4/30/2009 13:41	65	2.728733	22.598602	6.30056	0.9952174
4/30/2009 13:41	66	2.727886	22.59613	6.298604	0.9949084
4/30/2009 13:41	67	2.728434	22.595184	6.299869	0.9951082
4/30/2009 13:41	68	2.728033	22.589325	6.298944	0.9949621
4/30/2009 13:41	69	2.728268	22.586426	6.299486	0.9950477
4/30/2009 13:41	70	2.729031	22.583038	6.301247	0.9953259
4/30/2009 13:41	71	2.727488	22.578217	6.297685	0.9947633
4/30/2009 13:41	72	2.728268	22.574341	6.299486	0.9950477
4/30/2009 13:41	73	2.729305	22.571411	6.301881	0.995426
4/30/2009 13:41	74	2.729439	22.570953	6.30219	0.9954748
4/30/2009 13:41	75	2.728706	22.564148	6.300498	0.9952076
4/30/2009 13:41	76	2.729082	22.557343	6.301366	0.9953447
4/30/2009 13:41	77	2.727871	22.560242	6.29857	0.994903
4/30/2009 13:41	78	2.728321	22.556396	6.299609	0.9950672
4/30/2009 13:41	79	2.728706	22.552002	6.300498	0.9952076
4/30/2009 13:41	80	2.727999	22.550568	6.298864	0.9949495
4/30/2009 13:41	81	2.728817	22.544739	6.300754	0.995248
4/30/2009 13:41	82	2.726372	22.539886	6.295108	0.9943562
4/30/2009 13:41	83	2.727407	22.539886	6.2975	0.994734
4/30/2009 13:41	84	2.728321	22.5336	6.299609	0.9950672
4/30/2009 13:41	85	2.727999	22.530182	6.298864	0.9949495
4/30/2009 13:41	86	2.729031	22.528748	6.301247	0.9953259
4/30/2009 13:41	87	2.728434	22.524841	6.299869	0.9951082
4/30/2009 13:41	88	2.728651	22.52243	6.300371	0.9951875
4/30/2009 13:41	89	2.728918	22.520477	6.300987	0.9952848
4/30/2009 13:41	90	2.72925	22.51709	6.301754	0.995406
4/30/2009 13:41	91	2.727451	22.512726	6.297601	0.99475
4/30/2009 13:41	92	2.727077	22.514679	6.296738	0.9946137
4/30/2009 13:41	93	2.727737	22.507385	6.298261	0.9948542
4/30/2009 13:41	94	2.728706	22.504974	6.300498	0.9952076
4/30/2009 13:41	95	2.728918	22.497681	6.300987	0.9952848
4/30/2009 13:41	96	2.729408	22.498657	6.302119	0.9954636
4/30/2009 13:41	97	2.727407	22.494324	6.2975	0.994734
4/30/2009 13:41	98	2.727375	22.490906	6.297424	0.994722
4/30/2009 13:41	99	2.727886	22.490448	6.298604	0.9949084
4/30/2009 13:41	100	2.729898	22.486053	6.303251	0.9956424
4/30/2009 13:41	101	2.729408	22.483643	6.302119	0.9954636
4/30/2009 13:41	102	2.727737	22.479736	6.298261	0.9948542
4/30/2009 13:41	103	2.727133	22.481201	6.296865	0.9946337
4/30/2009 13:41	104	2.726479	22.474915	6.295355	0.9943952
4/30/2009 13:41	105	2.728384	22.471039	6.299754	0.9950901
4/30/2009 13:41	106	2.727737	22.467621	6.298261	0.9948542
4/30/2009 13:41	107	2.727673	22.463745	6.298111	0.9948305
4/30/2009 13:41	108	2.727184	22.46228	6.296984	0.9946525
4/30/2009 13:41	109	2.728481	22.457916	6.299979	0.9951256
4/30/2009 13:41	110	2.728598	22.455505	6.300248	0.9951681
4/30/2009 13:41	111	2.729082	22.453583	6.301366	0.9953447

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4/30/2009 13:41	113	2.729408	22.447754	6.302119	0.9954636
4/30/2009 13:41	114	2.728979	22.446777	6.301128	0.9953071
4/30/2009 13:41	115	2.728788	22.441925	6.300688	0.9952376
4/30/2009 13:41	116	2.729734	22.440002	6.302872	0.9955826
4/30/2009 13:41	117	2.728918	22.438049	6.300987	0.9952848
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4/30/2009 13:42	121	2.728918	22.423981	6.300987	0.9952848
4/30/2009 13:42	122	2.728706	22.422516	6.300498	0.9952076
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4/30/2009 13:42	130	2.726839	22.402679	6.296187	0.9945266
4/30/2009 13:42	131	2.727432	22.400208	6.297556	0.9947429
4/30/2009 13:42	132	2.728979	22.395874	6.301128	0.9953071
4/30/2009 13:42	133	2.728651	22.394409	6.300371	0.9951875
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4/30/2009 13:42	135	2.728268	22.39151	6.299486	0.9950477
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4/30/2009 13:42	141	2.726479	22.375519	6.295355	0.9943952
4/30/2009 13:42	142	2.728733	22.373108	6.30056	0.9952174
4/30/2009 13:42	143	2.727737	22.370667	6.298261	0.9948542
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4/30/2009 13:42	145	2.727757	22.366333	6.298306	0.9948613
4/30/2009 13:42	146	2.727161	22.363861	6.296931	0.9946442
4/30/2009 13:42	147	2.728384	22.361481	6.299754	0.9950901
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4/30/2009 13:42	152	2.728218	22.346405	6.299371	0.9950296
4/30/2009 13:42	153	2.728867	22.345459	6.300869	0.9952662
4/30/2009 13:42	154	2.727104	22.342072	6.296799	0.9946233
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4/30/2009 13:42	163	2.726803	22.322174	6.296103	0.9945134
4/30/2009 13:42	164	2.728308	22.320251	6.299578	0.9950623
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4/30/2009 13:44	284	2.725691	22.116272	6.293536	0.9941079
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4/30/2009 13:44	289	2.725481	22.112396	6.293051	0.9940313
4/30/2009 13:44	290	2.725691	22.109467	6.293536	0.9941079
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4/30/2009 13:45	304	2.725481	22.092987	6.293051	0.9940313
4/30/2009 13:45	305	2.725639	22.093506	6.293417	0.9940891
4/30/2009 13:45	306	2.725311	22.090576	6.292659	0.9939694
4/30/2009 13:45	307	2.724398	22.089081	6.29055	0.9936362
4/30/2009 13:45	308	2.725861	22.086182	6.293928	0.9941698
4/30/2009 13:45	309	2.723848	22.084747	6.289281	0.9934358
4/30/2009 13:45	310	2.726786	22.085236	6.296064	0.9945072
4/30/2009 13:45	311	2.725639	22.084259	6.293417	0.9940891
4/30/2009 13:45	312	2.725916	22.081848	6.294055	0.9941899
4/30/2009 13:45	313	2.725756	22.082336	6.293685	0.9941314
4/30/2009 13:45	314	2.726509	22.080383	6.295425	0.9944063
4/30/2009 13:45	315	2.726786	22.078949	6.296064	0.9945072
4/30/2009 13:45	316	2.725534	22.080902	6.293174	0.9940507
4/30/2009 13:45	317	2.725155	22.078003	6.292298	0.9939123
4/30/2009 13:45	318	2.7251	22.076538	6.292171	0.9938923
4/30/2009 13:45	319	2.727104	22.075104	6.296799	0.9946233
4/30/2009 13:45	320	2.7251	22.076996	6.292171	0.9938923
4/30/2009 13:45	321	2.725916	22.075104	6.294055	0.9941899
4/30/2009 13:45	322	2.725691	22.071198	6.293536	0.9941079
4/30/2009 13:45	323	2.724936	22.071198	6.291791	0.9938323
4/30/2009 13:45	324	2.725534	22.069733	6.293174	0.9940507
4/30/2009 13:45	325	2.724771	22.069733	6.291413	0.9937725
4/30/2009 13:45	326	2.724182	22.069275	6.290052	0.9935576
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4/30/2009 13:45	331	2.725481	22.064423	6.293051	0.9940313
4/30/2009 13:45	332	2.725481	22.063446	6.293051	0.9940313
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4/30/2009 13:45	334	2.7251	22.060547	6.292171	0.9938923
4/30/2009 13:45	335	2.722059	22.057648	6.285151	0.9927834
4/30/2009 13:45	336	2.72624	22.058136	6.294805	0.9943083
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4/30/2009 13:45	338	2.725639	22.057129	6.293417	0.9940891
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4/30/2009 13:45	342	2.724665	22.052307	6.291166	0.9937335
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4/30/2009 13:49	543	2.725565	21.921082	6.293245	0.9940619

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4/30/2009 13:49	545	2.726671	21.92157	6.295799	0.9944653
4/30/2009 13:49	546	2.725565	21.92157	6.293245	0.9940619
4/30/2009 13:49	547	2.727543	21.920593	6.297812	0.9947833
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4/30/2009 13:49	551	2.726862	21.920105	6.29624	0.994535
4/30/2009 13:49	552	2.725729	21.916229	6.293624	0.9941218
4/30/2009 13:49	553	2.725992	21.914795	6.294231	0.9942177
4/30/2009 13:49	554	2.725729	21.918671	6.293624	0.9941218
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4/30/2009 13:52	778	2.729635	21.857147	6.302643	0.9955464
4/30/2009 13:52	779	2.730345	21.855713	6.304282	0.9958053
4/30/2009 13:53	780	2.729961	21.855225	6.303397	0.9956655
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4/30/2009 13:53	782	2.731697	21.854248	6.307404	0.9962984
4/30/2009 13:53	783	2.730497	21.853302	6.304634	0.9958609
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4/30/2009 13:53	787	2.730614	21.854248	6.304903	0.9959034
4/30/2009 13:53	788	2.73023	21.853821	6.304017	0.9957634
4/30/2009 13:53	789	2.731211	21.852844	6.306281	0.9961211
4/30/2009 13:53	790	2.729961	21.854767	6.303397	0.9956655
4/30/2009 13:53	791	2.729309	21.855713	6.30189	0.9954275
4/30/2009 13:53	792	2.729473	21.850891	6.302269	0.9954873
4/30/2009 13:53	793	2.730661	21.853302	6.305013	0.9959208
4/30/2009 13:53	794	2.730722	21.854767	6.305153	0.9959429
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4/30/2009 13:53	797	2.730284	21.853821	6.304141	0.995783
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4/30/2009 13:56	1009	2.729902	21.824738	6.30326	0.9956439
4/30/2009 13:56	1010	2.731916	21.823761	6.30791	0.9963784
4/30/2009 13:56	1011	2.731211	21.822784	6.306281	0.9961211
4/30/2009 13:56	1012	2.731373	21.821838	6.306655	0.9961801
4/30/2009 13:56	1013	2.731916	21.827179	6.30791	0.9963784
4/30/2009 13:56	1014	2.729195	21.824249	6.301626	0.9953858
4/30/2009 13:56	1015	2.730881	21.823273	6.305519	0.9960007
4/30/2009 13:56	1016	2.731041	21.823273	6.305889	0.9960591
4/30/2009 13:56	1017	2.732243	21.823761	6.308663	0.9964973
4/30/2009 13:56	1018	2.730284	21.822296	6.304141	0.995783
4/30/2009 13:56	1019	2.731754	21.82132	6.307536	0.9963193
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4/30/2009 13:57	1021	2.731588	21.822784	6.307153	0.9962588
4/30/2009 13:57	1022	2.732344	21.818939	6.308897	0.9965343
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4/30/2009 13:57	1024	2.730774	21.82132	6.305272	0.9959617
4/30/2009 13:57	1025	2.731859	21.818939	6.307778	0.9963575
4/30/2009 13:57	1026	2.730827	21.823273	6.305396	0.9959813
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4/30/2009 13:57	1028	2.730064	21.820374	6.303634	0.9957029
4/30/2009 13:57	1029	2.731476	21.819397	6.306893	0.9962177

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4/30/2009 14:00	1231	2.733219	21.805878	6.310918	0.9968535
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4/30/2009 14:00	1237	2.731153	21.804443	6.306149	0.9961002
4/30/2009 14:00	1238	2.732407	21.806366	6.309042	0.9965572
4/30/2009 14:00	1239	2.732729	21.805389	6.309786	0.9966747
4/30/2009 14:00	1240	2.732458	21.804443	6.309161	0.996576
4/30/2009 14:00	1241	2.730934	21.803925	6.305642	0.9960201
4/30/2009 14:00	1242	2.73251	21.803925	6.30928	0.9965948
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4/30/2009 14:00	1247	2.730827	21.804901	6.305396	0.9959813
4/30/2009 14:00	1248	2.731373	21.804443	6.306655	0.9961801
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4/30/2009 14:00	1250	2.731264	21.804443	6.306404	0.9961405
4/30/2009 14:00	1251	2.731527	21.802979	6.307012	0.9962365
4/30/2009 14:00	1252	2.731527	21.803436	6.307012	0.9962365
4/30/2009 14:00	1253	2.730555	21.80249	6.304766	0.9958817
4/30/2009 14:00	1254	2.730497	21.802979	6.304634	0.9958609
4/30/2009 14:00	1255	2.732618	21.803436	6.309531	0.9966344
4/30/2009 14:00	1256	2.730722	21.802979	6.305153	0.9959429
4/30/2009 14:00	1257	2.731373	21.805389	6.306655	0.9961801
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4/30/2009 14:01	1261	2.730986	21.801544	6.305761	0.9960389
4/30/2009 14:01	1262	2.730497	21.80249	6.304634	0.9958609
4/30/2009 14:01	1263	2.731153	21.800537	6.306149	0.9961002
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4/30/2009 14:01	1269	2.731319	21.801544	6.306532	0.9961607
4/30/2009 14:01	1270	2.731264	21.801544	6.306404	0.9961405
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4/30/2009 14:01	1272	2.731527	21.80249	6.307012	0.9962365
4/30/2009 14:01	1273	2.732025	21.803436	6.308161	0.996418
4/30/2009 14:01	1274	2.731968	21.801971	6.308029	0.9963972
4/30/2009 14:01	1275	2.732025	21.80249	6.308161	0.996418
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4/30/2009 14:01	1278	2.731104	21.801025	6.306034	0.996082
4/30/2009 14:01	1279	2.731426	21.799072	6.306778	0.9961996
4/30/2009 14:01	1280	2.732944	21.801971	6.310284	0.9967534
4/30/2009 14:01	1281	2.730774	21.801971	6.305272	0.9959617
4/30/2009 14:01	1282	2.730986	21.802979	6.305761	0.9960389
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4/30/2009 14:01	1285	2.730661	21.801971	6.305013	0.9959208
4/30/2009 14:01	1286	2.732567	21.801544	6.309412	0.9966156
4/30/2009 14:01	1287	2.73229	21.802979	6.308774	0.9965148
4/30/2009 14:01	1288	2.731104	21.799591	6.306034	0.996082
4/30/2009 14:01	1289	2.732567	21.803925	6.309412	0.9966156
4/30/2009 14:01	1290	2.730827	21.801971	6.305396	0.9959813
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4/30/2009 14:01	1292	2.731264	21.801544	6.306404	0.9961405
4/30/2009 14:01	1293	2.729902	21.801971	6.30326	0.9956439
4/30/2009 14:01	1294	2.732243	21.798615	6.308663	0.9964973
4/30/2009 14:01	1295	2.732407	21.799591	6.309042	0.9965572
4/30/2009 14:01	1296	2.731476	21.801544	6.306893	0.9962177
4/30/2009 14:01	1297	2.731426	21.799072	6.306778	0.9961996
4/30/2009 14:01	1298	2.730827	21.801971	6.305396	0.9959813
4/30/2009 14:01	1299	2.731636	21.800537	6.307263	0.9962762

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4/30/2009 14:01	1309	2.731211	21.798126	6.306281	0.9961211
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4/30/2009 14:01	1315	2.730614	21.800049	6.304903	0.9959034
4/30/2009 14:01	1316	2.73229	21.800537	6.308774	0.9965148
4/30/2009 14:01	1317	2.731373	21.799591	6.306655	0.9961801
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4/30/2009 14:02	1324	2.731802	21.798615	6.307646	0.9963367
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4/30/2009 14:02	1338	2.730934	21.798615	6.305642	0.9960201
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4/30/2009 14:02	1362	2.732407	21.800537	6.309042	0.9965572
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4/30/2009 14:02	1365	2.731588	21.799591	6.307153	0.9962588
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4/30/2009 14:03	1421	2.730934	21.79715	6.305642	0.9960201
4/30/2009 14:03	1422	2.731153	21.795685	6.306149	0.9961002
4/30/2009 14:03	1423	2.732243	21.795685	6.308663	0.9964973
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4/30/2009 14:03	1425	2.731211	21.796173	6.306281	0.9961211
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4/30/2009 14:04	1456	2.730402	21.798126	6.304413	0.995826
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4/30/2009 14:04	1462	2.731859	21.796661	6.307778	0.9963575
4/30/2009 14:04	1463	2.731754	21.792786	6.307536	0.9963193
4/30/2009 14:04	1464	2.731968	21.793762	6.308029	0.9963972
4/30/2009 14:04	1465	2.731476	21.794708	6.306893	0.9962177
4/30/2009 14:04	1466	2.73229	21.795685	6.308774	0.9965148
4/30/2009 14:04	1467	2.730497	21.795685	6.304634	0.9958609
4/30/2009 14:04	1468	2.730284	21.797638	6.304141	0.995783
4/30/2009 14:04	1469	2.731802	21.796661	6.307646	0.9963367
4/30/2009 14:04	1470	2.732883	21.792786	6.310143	0.9967311
4/30/2009 14:04	1471	2.731319	21.794708	6.306532	0.9961607
4/30/2009 14:04	1472	2.730722	21.795227	6.305153	0.9959429
4/30/2009 14:04	1473	2.731697	21.796661	6.307404	0.9962984
4/30/2009 14:04	1474	2.731754	21.79425	6.307536	0.9963193
4/30/2009 14:04	1475	2.731588	21.793274	6.307153	0.9962588
4/30/2009 14:04	1476	2.730934	21.796173	6.305642	0.9960201
4/30/2009 14:04	1477	2.730774	21.795227	6.305272	0.9959617
4/30/2009 14:04	1478	2.731264	21.797638	6.306404	0.9961405
4/30/2009 14:04	1479	2.731636	21.793762	6.307263	0.9962762
4/30/2009 14:04	1480	2.730827	21.792786	6.305396	0.9959813
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4/30/2009 14:04	1483	2.730555	21.796173	6.304766	0.9958817
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4/30/2009 14:04	1485	2.731319	21.795685	6.306532	0.9961607
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4/30/2009 14:04	1487	2.732618	21.795227	6.309531	0.9966344
4/30/2009 14:04	1488	2.730774	21.79425	6.305272	0.9959617
4/30/2009 14:04	1489	2.732944	21.794708	6.310284	0.9967534
4/30/2009 14:04	1490	2.731319	21.794708	6.306532	0.9961607
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4/30/2009 14:04	1493	2.730774	21.795685	6.305272	0.9959617
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4/30/2009 14:08	1689	2.731802	21.789429	6.307646	0.9963367
4/30/2009 14:08	1690	2.730497	21.790863	6.304634	0.9958609
4/30/2009 14:08	1691	2.731319	21.787476	6.306532	0.9961607
4/30/2009 14:08	1692	2.731697	21.789856	6.307404	0.9962984
4/30/2009 14:08	1693	2.731264	21.789856	6.306404	0.9961405
4/30/2009 14:08	1694	2.732183	21.791809	6.308527	0.9964758
4/30/2009 14:08	1695	2.730064	21.78891	6.303634	0.9957029
4/30/2009 14:08	1696	2.73023	21.790863	6.304017	0.9957634
4/30/2009 14:08	1697	2.732077	21.790375	6.30828	0.9964368
4/30/2009 14:08	1698	2.732077	21.791809	6.30828	0.9964368
4/30/2009 14:08	1699	2.732243	21.79425	6.308663	0.9964973
4/30/2009 14:08	1700	2.732567	21.791321	6.309412	0.9966156
4/30/2009 14:08	1701	2.730986	21.790375	6.305761	0.9960389
4/30/2009 14:08	1702	2.731041	21.790863	6.305889	0.9960591
4/30/2009 14:08	1703	2.730402	21.789856	6.304413	0.995826
4/30/2009 14:08	1704	2.732025	21.788422	6.308161	0.996418
4/30/2009 14:08	1705	2.732025	21.791321	6.308161	0.996418
4/30/2009 14:08	1706	2.731754	21.791321	6.307536	0.9963193
4/30/2009 14:08	1707	2.73229	21.789856	6.308774	0.9965148
4/30/2009 14:08	1708	2.731264	21.790375	6.306404	0.9961405
4/30/2009 14:08	1709	2.732077	21.790863	6.30828	0.9964368
4/30/2009 14:08	1710	2.730448	21.790375	6.304519	0.9958427
4/30/2009 14:08	1711	2.731802	21.790375	6.307646	0.9963367
4/30/2009 14:08	1712	2.731527	21.789429	6.307012	0.9962365
4/30/2009 14:08	1713	2.731968	21.788422	6.308029	0.9963972
4/30/2009 14:08	1714	2.732243	21.792328	6.308663	0.9964973
4/30/2009 14:08	1715	2.732077	21.790375	6.30828	0.9964368
4/30/2009 14:08	1716	2.731104	21.787476	6.306034	0.996082
4/30/2009 14:08	1717	2.73023	21.789856	6.304017	0.9957634
4/30/2009 14:08	1718	2.731802	21.790863	6.307646	0.9963367
4/30/2009 14:08	1719	2.731527	21.789856	6.307012	0.9962365
4/30/2009 14:08	1720	2.731754	21.787933	6.307536	0.9963193
4/30/2009 14:08	1721	2.732407	21.790863	6.309042	0.9965572
4/30/2009 14:08	1722	2.730986	21.792328	6.305761	0.9960389
4/30/2009 14:08	1723	2.732407	21.789856	6.309042	0.9965572
4/30/2009 14:08	1724	2.730986	21.789429	6.305761	0.9960389
4/30/2009 14:08	1725	2.730555	21.790375	6.304766	0.9958817
4/30/2009 14:08	1726	2.730555	21.791321	6.304766	0.9958817
4/30/2009 14:08	1727	2.73251	21.78891	6.30928	0.9965948
4/30/2009 14:08	1728	2.730934	21.78891	6.305642	0.9960201
4/30/2009 14:08	1729	2.731802	21.789856	6.307646	0.9963367
4/30/2009 14:08	1730	2.731697	21.790375	6.307404	0.9962984
4/30/2009 14:08	1731	2.731697	21.791809	6.307404	0.9962984

4/30/2009 14:08	1732	2.731527	21.787476	6.307012	0.9962365
4/30/2009 14:08	1733	2.731104	21.792328	6.306034	0.996082
4/30/2009 14:08	1734	2.731041	21.78891	6.305889	0.9960591
4/30/2009 14:08	1735	2.732243	21.78891	6.308663	0.9964973
4/30/2009 14:08	1736	2.731636	21.790375	6.307263	0.9962762
4/30/2009 14:08	1737	2.732077	21.789429	6.30828	0.9964368
4/30/2009 14:08	1738	2.730448	21.792328	6.304519	0.9958427
4/30/2009 14:08	1739	2.731636	21.791321	6.307263	0.9962762
4/30/2009 14:09	1740	2.731527	21.790375	6.307012	0.9962365
4/30/2009 14:09	1741	2.732183	21.791321	6.308527	0.9964758
4/30/2009 14:09	1742	2.729961	21.78891	6.303397	0.9956655
4/30/2009 14:09	1743	2.732407	21.789429	6.309042	0.9965572
4/30/2009 14:09	1744	2.732567	21.792328	6.309412	0.9966156
4/30/2009 14:09	1745	2.732883	21.789856	6.310143	0.9967311
4/30/2009 14:09	1746	2.731636	21.792328	6.307263	0.9962762
4/30/2009 14:09	1747	2.733219	21.789429	6.310918	0.9968535
4/30/2009 14:09	1748	2.73251	21.789429	6.30928	0.9965948
4/30/2009 14:09	1749	2.731373	21.793274	6.306655	0.9961801
4/30/2009 14:09	1750	2.73229	21.788422	6.308774	0.9965148
4/30/2009 14:09	1751	2.732128	21.790375	6.308399	0.9964556
4/30/2009 14:09	1752	2.731426	21.790863	6.306778	0.9961996
4/30/2009 14:09	1753	2.732128	21.790375	6.308399	0.9964556
4/30/2009 14:09	1754	2.731264	21.790863	6.306404	0.9961405
4/30/2009 14:09	1755	2.730497	21.787476	6.304634	0.9958609
4/30/2009 14:09	1756	2.731041	21.790375	6.305889	0.9960591
4/30/2009 14:09	1757	2.731373	21.788422	6.306655	0.9961801
4/30/2009 14:09	1758	2.730661	21.78891	6.305013	0.9959208
4/30/2009 14:09	1759	2.732183	21.791321	6.308527	0.9964758
4/30/2009 14:09	1760	2.73316	21.78891	6.310781	0.9968319
4/30/2009 14:09	1761	2.731041	21.78891	6.305889	0.9960591
4/30/2009 14:09	1762	2.732567	21.787476	6.309412	0.9966156
4/30/2009 14:09	1763	2.731527	21.790375	6.307012	0.9962365
4/30/2009 14:09	1764	2.732883	21.789429	6.310143	0.9967311
4/30/2009 14:09	1765	2.73251	21.790863	6.30928	0.9965948
4/30/2009 14:09	1766	2.731802	21.78891	6.307646	0.9963367
4/30/2009 14:09	1767	2.73229	21.788422	6.308774	0.9965148
4/30/2009 14:09	1768	2.73229	21.789856	6.308774	0.9965148
4/30/2009 14:09	1769	2.731859	21.791321	6.307778	0.9963575
4/30/2009 14:09	1770	2.73251	21.789856	6.30928	0.9965948
4/30/2009 14:09	1771	2.731319	21.791809	6.306532	0.9961607
4/30/2009 14:09	1772	2.732458	21.789429	6.309161	0.996576
4/30/2009 14:09	1773	2.732782	21.790375	6.30991	0.9966943
4/30/2009 14:09	1774	2.731754	21.793762	6.307536	0.9963193
4/30/2009 14:09	1775	2.732344	21.787476	6.308897	0.9965343
4/30/2009 14:09	1776	2.732025	21.788422	6.308161	0.996418
4/30/2009 14:09	1777	2.733219	21.791809	6.310918	0.9968535
4/30/2009 14:09	1778	2.731041	21.788422	6.305889	0.9960591
4/30/2009 14:09	1779	2.732668	21.786499	6.309646	0.9966526
4/30/2009 14:09	1780	2.732618	21.789429	6.309531	0.9966344
4/30/2009 14:09	1781	2.731476	21.787933	6.306893	0.9962177
4/30/2009 14:09	1782	2.731373	21.791321	6.306655	0.9961801
4/30/2009 14:09	1783	2.732077	21.789429	6.30828	0.9964368
4/30/2009 14:09	1784	2.732025	21.790375	6.308161	0.996418
4/30/2009 14:09	1785	2.729742	21.787476	6.30289	0.9955854

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4/30/2009 14:09	1787	2.733706	21.789856	6.312042	0.997031
4/30/2009 14:09	1788	2.731859	21.789429	6.307778	0.9963575
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4/30/2009 14:09	1790	2.73283	21.790863	6.31002	0.9967117
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4/30/2009 14:09	1793	2.731104	21.790375	6.306034	0.996082
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4/30/2009 14:09	1795	2.73023	21.789856	6.304017	0.9957634
4/30/2009 14:09	1796	2.731754	21.784576	6.307536	0.9963193
4/30/2009 14:09	1797	2.732128	21.787476	6.308399	0.9964556
4/30/2009 14:09	1798	2.732025	21.787933	6.308161	0.996418
4/30/2009 14:09	1799	2.730555	21.791321	6.304766	0.9958817
4/30/2009 14:10	1800	2.730345	21.78891	6.304282	0.9958053
4/30/2009 14:10	1801	2.733374	21.78891	6.311275	0.9969099
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4/30/2009 14:10	1803	2.732128	21.78891	6.308399	0.9964556
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4/30/2009 14:10	1805	2.732344	21.787476	6.308897	0.9965343
4/30/2009 14:10	1806	2.730934	21.786957	6.305642	0.9960201
4/30/2009 14:10	1807	2.730284	21.789856	6.304141	0.995783
4/30/2009 14:10	1808	2.730934	21.78891	6.305642	0.9960201
4/30/2009 14:10	1809	2.733	21.787933	6.310412	0.9967736
4/30/2009 14:10	1810	2.732243	21.787933	6.308663	0.9964973
4/30/2009 14:10	1811	2.732077	21.787933	6.30828	0.9964368
4/30/2009 14:10	1812	2.732243	21.786499	6.308663	0.9964973
4/30/2009 14:10	1813	2.730774	21.786957	6.305272	0.9959617
4/30/2009 14:10	1814	2.731527	21.790375	6.307012	0.9962365
4/30/2009 14:10	1815	2.730614	21.787476	6.304903	0.9959034
4/30/2009 14:10	1816	2.732025	21.786499	6.308161	0.996418
4/30/2009 14:10	1817	2.731968	21.790375	6.308029	0.9963972
4/30/2009 14:10	1818	2.732183	21.786957	6.308527	0.9964758
4/30/2009 14:10	1819	2.733219	21.787476	6.310918	0.9968535
4/30/2009 14:10	1820	2.730934	21.790375	6.305642	0.9960201
4/30/2009 14:10	1821	2.732243	21.785522	6.308663	0.9964973
4/30/2009 14:10	1822	2.73229	21.78891	6.308774	0.9965148
4/30/2009 14:10	1823	2.731968	21.787933	6.308029	0.9963972
4/30/2009 14:10	1824	2.731916	21.787476	6.30791	0.9963784
4/30/2009 14:10	1825	2.731373	21.787933	6.306655	0.9961801
4/30/2009 14:10	1826	2.732243	21.789429	6.308663	0.9964973
4/30/2009 14:10	1827	2.73251	21.788422	6.30928	0.9965948
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4/30/2009 14:10	1830	2.730482	21.786957	6.304599	0.9958554
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4/30/2009 14:10	1832	2.730934	21.786957	6.305642	0.9960201
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4/30/2009 14:10	1837	2.731588	21.787933	6.307153	0.9962588
4/30/2009 14:10	1838	2.731426	21.784576	6.306778	0.9961996
4/30/2009 14:10	1839	2.732618	21.790375	6.309531	0.9966344

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4/30/2009 14:10	1841	2.732618	21.789856	6.309531	0.9966344
4/30/2009 14:10	1842	2.732344	21.787476	6.308897	0.9965343
4/30/2009 14:10	1843	2.732344	21.790375	6.308897	0.9965343
4/30/2009 14:10	1844	2.732883	21.787933	6.310143	0.9967311
4/30/2009 14:10	1845	2.730774	21.789429	6.305272	0.9959617
4/30/2009 14:10	1846	2.732025	21.786957	6.308161	0.996418
4/30/2009 14:10	1847	2.732458	21.786957	6.309161	0.996576
4/30/2009 14:10	1848	2.73251	21.787933	6.30928	0.9965948
4/30/2009 14:10	1849	2.733109	21.786499	6.310663	0.9968132
4/30/2009 14:10	1850	2.730774	21.788422	6.305272	0.9959617
4/30/2009 14:10	1851	2.732128	21.786011	6.308399	0.9964556
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4/30/2009 14:10	1853	2.732944	21.785522	6.310284	0.9967534
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4/30/2009 14:10	1855	2.732458	21.787476	6.309161	0.996576
4/30/2009 14:10	1856	2.733435	21.789429	6.311416	0.9969322
4/30/2009 14:10	1857	2.732025	21.786957	6.308161	0.996418
4/30/2009 14:10	1858	2.732344	21.786011	6.308897	0.9965343
4/30/2009 14:10	1859	2.731859	21.78891	6.307778	0.9963575
4/30/2009 14:11	1860	2.732407	21.787933	6.309042	0.9965572
4/30/2009 14:11	1861	2.732668	21.787933	6.309646	0.9966526
4/30/2009 14:11	1862	2.732668	21.78891	6.309646	0.9966526
4/30/2009 14:11	1863	2.731859	21.788422	6.307778	0.9963575
4/30/2009 14:11	1864	2.730183	21.788422	6.303907	0.9957461
4/30/2009 14:11	1865	2.730934	21.787933	6.305642	0.9960201
4/30/2009 14:11	1866	2.73023	21.787476	6.304017	0.9957634
4/30/2009 14:11	1867	2.732077	21.789856	6.30828	0.9964368
4/30/2009 14:11	1868	2.73023	21.788422	6.304017	0.9957634
4/30/2009 14:11	1869	2.732077	21.789429	6.30828	0.9964368
4/30/2009 14:11	1870	2.731426	21.788422	6.306778	0.9961996
4/30/2009 14:11	1871	2.731476	21.788422	6.306893	0.9962177
4/30/2009 14:11	1872	2.731636	21.787476	6.307263	0.9962762
4/30/2009 14:11	1873	2.733047	21.789429	6.310522	0.9967909
4/30/2009 14:11	1874	2.729902	21.790375	6.30326	0.9956439
4/30/2009 14:11	1875	2.731211	21.786957	6.306281	0.9961211
4/30/2009 14:11	1876	2.731859	21.789856	6.307778	0.9963575
4/30/2009 14:11	1877	2.73251	21.787476	6.30928	0.9965948
4/30/2009 14:11	1878	2.730614	21.786499	6.304903	0.9959034
4/30/2009 14:11	1879	2.732077	21.788422	6.30828	0.9964368
4/30/2009 14:11	1880	2.731527	21.789856	6.307012	0.9962365
4/30/2009 14:11	1881	2.732077	21.78891	6.30828	0.9964368
4/30/2009 14:11	1882	2.732883	21.789429	6.310143	0.9967311
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4/30/2009 14:11	1884	2.730284	21.78891	6.304141	0.995783
4/30/2009 14:11	1885	2.731754	21.789429	6.307536	0.9963193
4/30/2009 14:11	1886	2.731916	21.78891	6.30791	0.9963784
4/30/2009 14:11	1887	2.731636	21.787933	6.307263	0.9962762
4/30/2009 14:11	1888	2.731041	21.786957	6.305889	0.9960591
4/30/2009 14:11	1889	2.73229	21.787933	6.308774	0.9965148
4/30/2009 14:11	1890	2.732344	21.787476	6.308897	0.9965343
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4/30/2009 14:11	1892	2.732243	21.787476	6.308663	0.9964973
4/30/2009 14:11	1893	2.73283	21.78891	6.31002	0.9967117

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4/30/2009 14:11	1896	2.730881	21.787476	6.305519	0.9960007
4/30/2009 14:11	1897	2.731754	21.786499	6.307536	0.9963193
4/30/2009 14:11	1898	2.730009	21.789429	6.303506	0.9956827
4/30/2009 14:11	1899	2.731916	21.786499	6.30791	0.9963784
4/30/2009 14:11	1900	2.732407	21.787933	6.309042	0.9965572
4/30/2009 14:11	1901	2.731588	21.789429	6.307153	0.9962588
4/30/2009 14:11	1902	2.732668	21.787476	6.309646	0.9966526
4/30/2009 14:11	1903	2.731588	21.790375	6.307153	0.9962588
4/30/2009 14:11	1904	2.732183	21.789429	6.308527	0.9964758
4/30/2009 14:11	1905	2.731636	21.788422	6.307263	0.9962762
4/30/2009 14:11	1906	2.731264	21.787933	6.306404	0.9961405
4/30/2009 14:11	1907	2.73283	21.790863	6.31002	0.9967117
4/30/2009 14:11	1908	2.731153	21.786957	6.306149	0.9961002
4/30/2009 14:11	1909	2.732025	21.788422	6.308161	0.996418
4/30/2009 14:11	1910	2.732344	21.786957	6.308897	0.9965343
4/30/2009 14:11	1911	2.732883	21.789429	6.310143	0.9967311
4/30/2009 14:11	1912	2.731754	21.78891	6.307536	0.9963193
4/30/2009 14:11	1913	2.732243	21.785522	6.308663	0.9964973
4/30/2009 14:11	1914	2.730497	21.78891	6.304634	0.9958609
4/30/2009 14:11	1915	2.730934	21.78891	6.305642	0.9960201
4/30/2009 14:11	1916	2.732883	21.789429	6.310143	0.9967311
4/30/2009 14:11	1917	2.731476	21.788422	6.306893	0.9962177
4/30/2009 14:11	1918	2.730934	21.786957	6.305642	0.9960201
4/30/2009 14:11	1919	2.732458	21.787933	6.309161	0.996576
4/30/2009 14:12	1920	2.731476	21.789856	6.306893	0.9962177
4/30/2009 14:12	1921	2.731859	21.788422	6.307778	0.9963575
4/30/2009 14:12	1922	2.731153	21.786957	6.306149	0.9961002
4/30/2009 14:12	1923	2.731859	21.788422	6.307778	0.9963575
4/30/2009 14:12	1924	2.730934	21.786957	6.305642	0.9960201
4/30/2009 14:12	1925	2.732025	21.786011	6.308161	0.996418
4/30/2009 14:12	1926	2.731153	21.786957	6.306149	0.9961002
4/30/2009 14:12	1927	2.731916	21.78891	6.30791	0.9963784
4/30/2009 14:12	1928	2.731104	21.786011	6.306034	0.996082
4/30/2009 14:12	1929	2.732183	21.786499	6.308527	0.9964758
4/30/2009 14:12	1930	2.731104	21.787476	6.306034	0.996082
4/30/2009 14:12	1931	2.732729	21.788422	6.309786	0.9966747
4/30/2009 14:12	1932	2.731041	21.788422	6.305889	0.9960591
4/30/2009 14:12	1933	2.732344	21.790863	6.308897	0.9965343
4/30/2009 14:12	1934	2.731636	21.786499	6.307263	0.9962762
4/30/2009 14:12	1935	2.731104	21.786499	6.306034	0.996082
4/30/2009 14:12	1936	2.732344	21.786499	6.308897	0.9965343
4/30/2009 14:12	1937	2.732407	21.787933	6.309042	0.9965572
4/30/2009 14:12	1938	2.732077	21.787476	6.30828	0.9964368
4/30/2009 14:12	1939	2.731565	21.786499	6.3071	0.9962504
4/30/2009 14:12	1940	2.730614	21.788422	6.304903	0.9959034
4/30/2009 14:12	1941	2.731697	21.787476	6.307404	0.9962984
4/30/2009 14:12	1942	2.732458	21.788422	6.309161	0.996576
4/30/2009 14:12	1943	2.732183	21.788422	6.308527	0.9964758
4/30/2009 14:12	1944	2.731916	21.786011	6.30791	0.9963784
4/30/2009 14:12	1945	2.730614	21.786957	6.304903	0.9959034
4/30/2009 14:12	1946	2.730614	21.785522	6.304903	0.9959034
4/30/2009 14:12	1947	2.73229	21.786499	6.308774	0.9965148

4/30/2009 14:12	1948	2.731476	21.786957	6.306893	0.9962177
4/30/2009 14:12	1949	2.730402	21.786957	6.304413	0.995826
4/30/2009 14:12	1950	2.73229	21.785065	6.308774	0.9965148
4/30/2009 14:12	1951	2.731527	21.787933	6.307012	0.9962365
4/30/2009 14:12	1952	2.731153	21.788422	6.306149	0.9961002
4/30/2009 14:12	1953	2.732077	21.785522	6.30828	0.9964368
4/30/2009 14:12	1954	2.731373	21.784576	6.306655	0.9961801
4/30/2009 14:12	1955	2.73251	21.789856	6.30928	0.9965948
4/30/2009 14:12	1956	2.731153	21.789856	6.306149	0.9961002
4/30/2009 14:12	1957	2.731527	21.786011	6.307012	0.9962365
4/30/2009 14:12	1958	2.732458	21.786499	6.309161	0.996576
4/30/2009 14:12	1959	2.731588	21.786011	6.307153	0.9962588
4/30/2009 14:12	1960	2.731211	21.787933	6.306281	0.9961211
4/30/2009 14:12	1961	2.731916	21.787933	6.30791	0.9963784
4/30/2009 14:12	1962	2.731264	21.786957	6.306404	0.9961405
4/30/2009 14:12	1963	2.729258	21.786499	6.301771	0.9954087
4/30/2009 14:12	1964	2.730284	21.787933	6.304141	0.995783
4/30/2009 14:12	1965	2.730614	21.785065	6.304903	0.9959034
4/30/2009 14:12	1966	2.731636	21.786011	6.307263	0.9962762
4/30/2009 14:12	1967	2.729357	21.789856	6.302001	0.995445
4/30/2009 14:12	1968	2.729742	21.786957	6.30289	0.9955854
4/30/2009 14:12	1969	2.730881	21.788422	6.305519	0.9960007
4/30/2009 14:12	1970	2.731373	21.786011	6.306655	0.9961801
4/30/2009 14:12	1971	2.730827	21.787476	6.305396	0.9959813
4/30/2009 14:12	1972	2.730661	21.786499	6.305013	0.9959208
4/30/2009 14:12	1973	2.730661	21.786957	6.305013	0.9959208
4/30/2009 14:12	1974	2.731527	21.787476	6.307012	0.9962365
4/30/2009 14:12	1975	2.731041	21.786957	6.305889	0.9960591
4/30/2009 14:12	1976	2.731754	21.788422	6.307536	0.9963193
4/30/2009 14:12	1977	2.732344	21.786957	6.308897	0.9965343
4/30/2009 14:12	1978	2.731264	21.785065	6.306404	0.9961405
4/30/2009 14:12	1979	2.731041	21.786011	6.305889	0.9960591
4/30/2009 14:13	1980	2.730402	21.786957	6.304413	0.995826
4/30/2009 14:13	1981	2.732128	21.785522	6.308399	0.9964556
4/30/2009 14:13	1982	2.731968	21.786499	6.308029	0.9963972
4/30/2009 14:13	1983	2.730661	21.785522	6.305013	0.9959208
4/30/2009 14:13	1984	2.730614	21.78891	6.304903	0.9959034
4/30/2009 14:13	1985	2.731588	21.786011	6.307153	0.9962588
4/30/2009 14:13	1986	2.731527	21.786011	6.307012	0.9962365
4/30/2009 14:13	1987	2.731153	21.787476	6.306149	0.9961002
4/30/2009 14:13	1988	2.730448	21.78363	6.304519	0.9958427
4/30/2009 14:13	1989	2.731636	21.786957	6.307263	0.9962762
4/30/2009 14:13	1990	2.732243	21.786499	6.308663	0.9964973
4/30/2009 14:13	1991	2.731754	21.786957	6.307536	0.9963193
4/30/2009 14:13	1992	2.730183	21.786957	6.303907	0.9957461
4/30/2009 14:13	1993	2.732025	21.785522	6.308161	0.996418
4/30/2009 14:13	1994	2.731211	21.785522	6.306281	0.9961211
4/30/2009 14:13	1995	2.732183	21.787476	6.308527	0.9964758
4/30/2009 14:13	1996	2.731153	21.787933	6.306149	0.9961002
4/30/2009 14:13	1997	2.730402	21.786957	6.304413	0.995826
4/30/2009 14:13	1998	2.730986	21.786499	6.305761	0.9960389
4/30/2009 14:13	1999	2.731697	21.785065	6.307404	0.9962984
4/30/2009 14:13	2000	2.731476	21.790375	6.306893	0.9962177
4/30/2009 14:13	2001	2.730986	21.786011	6.305761	0.9960389

4/30/2009 14:13	2002	2.732883	21.790375	6.310143	0.9967311
4/30/2009 14:13	2003	2.732458	21.786499	6.309161	0.996576
4/30/2009 14:13	2004	2.731319	21.789429	6.306532	0.9961607
4/30/2009 14:13	2005	2.731754	21.786011	6.307536	0.9963193
4/30/2009 14:13	2006	2.732025	21.786011	6.308161	0.996418
4/30/2009 14:13	2007	2.732077	21.786499	6.30828	0.9964368
4/30/2009 14:13	2008	2.731968	21.787933	6.308029	0.9963972
4/30/2009 14:13	2009	2.731373	21.786011	6.306655	0.9961801
4/30/2009 14:13	2010	2.732344	21.786499	6.308897	0.9965343
4/30/2009 14:13	2011	2.732183	21.786957	6.308527	0.9964758
4/30/2009 14:13	2012	2.731697	21.786499	6.307404	0.9962984
4/30/2009 14:13	2013	2.732025	21.787476	6.308161	0.996418
4/30/2009 14:13	2014	2.731588	21.787933	6.307153	0.9962588
4/30/2009 14:13	2015	2.730934	21.786957	6.305642	0.9960201
4/30/2009 14:13	2016	2.731588	21.784088	6.307153	0.9962588
4/30/2009 14:13	2017	2.731968	21.78891	6.308029	0.9963972
4/30/2009 14:13	2018	2.732407	21.786499	6.309042	0.9965572
4/30/2009 14:13	2019	2.731264	21.785065	6.306404	0.9961405
4/30/2009 14:13	2020	2.730827	21.785522	6.305396	0.9959813
4/30/2009 14:13	2021	2.731476	21.786499	6.306893	0.9962177
4/30/2009 14:13	2022	2.732077	21.786499	6.30828	0.9964368
4/30/2009 14:13	2023	2.730934	21.787476	6.305642	0.9960201
4/30/2009 14:13	2024	2.731968	21.785065	6.308029	0.9963972
4/30/2009 14:13	2025	2.731476	21.786499	6.306893	0.9962177
4/30/2009 14:13	2026	2.730209	21.787476	6.303969	0.9957559
4/30/2009 14:13	2027	2.732077	21.786957	6.30828	0.9964368
4/30/2009 14:13	2028	2.729797	21.787476	6.303018	0.9956056
4/30/2009 14:13	2029	2.731859	21.788422	6.307778	0.9963575
4/30/2009 14:13	2030	2.730125	21.782654	6.303775	0.9957252
4/30/2009 14:13	2031	2.732243	21.786957	6.308663	0.9964973
4/30/2009 14:13	2032	2.731373	21.786011	6.306655	0.9961801
4/30/2009 14:13	2033	2.730448	21.787933	6.304519	0.9958427
4/30/2009 14:13	2034	2.730125	21.785522	6.303775	0.9957252
4/30/2009 14:13	2035	2.731476	21.786499	6.306893	0.9962177
4/30/2009 14:13	2036	2.730661	21.786011	6.305013	0.9959208
4/30/2009 14:13	2037	2.731153	21.78363	6.306149	0.9961002
4/30/2009 14:13	2038	2.731319	21.785065	6.306532	0.9961607
4/30/2009 14:13	2039	2.731153	21.785065	6.306149	0.9961002
4/30/2009 14:14	2040	2.732782	21.784576	6.30991	0.9966943
4/30/2009 14:14	2041	2.732344	21.785522	6.308897	0.9965343
4/30/2009 14:14	2042	2.730827	21.786957	6.305396	0.9959813
4/30/2009 14:14	2043	2.730661	21.785065	6.305013	0.9959208
4/30/2009 14:14	2044	2.731426	21.786499	6.306778	0.9961996
4/30/2009 14:14	2045	2.731426	21.786011	6.306778	0.9961996
4/30/2009 14:14	2046	2.730827	21.785065	6.305396	0.9959813
4/30/2009 14:14	2047	2.731968	21.786011	6.308029	0.9963972
4/30/2009 14:14	2048	2.730125	21.786499	6.303775	0.9957252
4/30/2009 14:14	2049	2.731426	21.785522	6.306778	0.9961996
4/30/2009 14:14	2050	2.732567	21.787933	6.309412	0.9966156
4/30/2009 14:14	2051	2.730986	21.786499	6.305761	0.9960389
4/30/2009 14:14	2052	2.729902	21.786957	6.30326	0.9956439
4/30/2009 14:14	2053	2.732183	21.786011	6.308527	0.9964758
4/30/2009 14:14	2054	2.731476	21.787476	6.306893	0.9962177
4/30/2009 14:14	2055	2.731104	21.786499	6.306034	0.996082

4/30/2009 14:14	2056	2.731319	21.788422	6.306532	0.9961607
4/30/2009 14:14	2057	2.731527	21.787933	6.307012	0.9962365
4/30/2009 14:14	2058	2.731426	21.785522	6.306778	0.9961996
4/30/2009 14:14	2059	2.730448	21.786957	6.304519	0.9958427
4/30/2009 14:14	2060	2.731319	21.787933	6.306532	0.9961607
4/30/2009 14:14	2061	2.731041	21.786957	6.305889	0.9960591
4/30/2009 14:14	2062	2.729742	21.786957	6.30289	0.9955854
4/30/2009 14:14	2063	2.730661	21.784576	6.305013	0.9959208
4/30/2009 14:14	2064	2.731802	21.786011	6.307646	0.9963367
4/30/2009 14:14	2065	2.730448	21.786957	6.304519	0.9958427
4/30/2009 14:14	2066	2.730402	21.785065	6.304413	0.995826
4/30/2009 14:14	2067	2.731859	21.785065	6.307778	0.9963575
4/30/2009 14:14	2068	2.730284	21.786011	6.304141	0.995783
4/30/2009 14:14	2069	2.730934	21.786011	6.305642	0.9960201
4/30/2009 14:14	2070	2.730555	21.786499	6.304766	0.9958817
4/30/2009 14:14	2071	2.731319	21.787476	6.306532	0.9961607
4/30/2009 14:14	2072	2.730934	21.787933	6.305642	0.9960201
4/30/2009 14:14	2073	2.731211	21.785065	6.306281	0.9961211
4/30/2009 14:14	2074	2.731754	21.784576	6.307536	0.9963193
4/30/2009 14:14	2075	2.730448	21.787476	6.304519	0.9958427
4/30/2009 14:14	2076	2.730774	21.78891	6.305272	0.9959617
4/30/2009 14:14	2077	2.731426	21.786957	6.306778	0.9961996
4/30/2009 14:14	2078	2.730448	21.785522	6.304519	0.9958427
4/30/2009 14:14	2079	2.730661	21.784576	6.305013	0.9959208
4/30/2009 14:14	2080	2.731319	21.789429	6.306532	0.9961607
4/30/2009 14:14	2081	2.730536	21.789856	6.304722	0.9958748
4/30/2009 14:14	2082	2.730183	21.786957	6.303907	0.9957461
4/30/2009 14:14	2083	2.730009	21.787933	6.303506	0.9956827
4/30/2009 14:14	2084	2.732077	21.787476	6.30828	0.9964368
4/30/2009 14:14	2085	2.730183	21.788422	6.303907	0.9957461
4/30/2009 14:14	2086	2.732025	21.789429	6.308161	0.996418
4/30/2009 14:14	2087	2.730497	21.784576	6.304634	0.9958609
4/30/2009 14:14	2088	2.730774	21.785065	6.305272	0.9959617
4/30/2009 14:14	2089	2.731636	21.786957	6.307263	0.9962762
4/30/2009 14:14	2090	2.731859	21.784088	6.307778	0.9963575
4/30/2009 14:14	2091	2.732883	21.786011	6.310143	0.9967311
4/30/2009 14:14	2092	2.730986	21.786011	6.305761	0.9960389
4/30/2009 14:14	2093	2.730661	21.786499	6.305013	0.9959208
4/30/2009 14:14	2094	2.729961	21.785065	6.303397	0.9956655
4/30/2009 14:14	2095	2.732668	21.788422	6.309646	0.9966526
4/30/2009 14:14	2096	2.732077	21.78891	6.30828	0.9964368
4/30/2009 14:14	2097	2.731264	21.78891	6.306404	0.9961405
4/30/2009 14:14	2098	2.729187	21.786499	6.301608	0.9953829
4/30/2009 14:14	2099	2.731636	21.785522	6.307263	0.9962762
4/30/2009 14:15	2100	2.730827	21.787476	6.305396	0.9959813
4/30/2009 14:15	2101	2.731426	21.785522	6.306778	0.9961996
4/30/2009 14:15	2102	2.731476	21.785065	6.306893	0.9962177
4/30/2009 14:15	2103	2.731754	21.786957	6.307536	0.9963193
4/30/2009 14:15	2104	2.731527	21.784576	6.307012	0.9962365
4/30/2009 14:15	2105	2.731153	21.786499	6.306149	0.9961002
4/30/2009 14:15	2106	2.731527	21.785522	6.307012	0.9962365
4/30/2009 14:15	2107	2.730881	21.786499	6.305519	0.9960007
4/30/2009 14:15	2108	2.730934	21.789429	6.305642	0.9960201
4/30/2009 14:15	2109	2.731373	21.785065	6.306655	0.9961801

4/30/2009 14:15	2110	2.730497	21.787476	6.304634	0.9958609
4/30/2009 14:15	2111	2.731697	21.788422	6.307404	0.9962984
4/30/2009 14:15	2112	2.730064	21.784576	6.303634	0.9957029
4/30/2009 14:15	2113	2.731153	21.786499	6.306149	0.9961002
4/30/2009 14:15	2114	2.731264	21.785065	6.306404	0.9961405
4/30/2009 14:15	2115	2.731588	21.786011	6.307153	0.9962588
4/30/2009 14:15	2116	2.731968	21.786957	6.308029	0.9963972
4/30/2009 14:15	2117	2.73332	21.784576	6.311152	0.9968905
4/30/2009 14:15	2118	2.730827	21.786011	6.305396	0.9959813
4/30/2009 14:15	2119	2.732128	21.785065	6.308399	0.9964556
4/30/2009 14:15	2120	2.730661	21.785065	6.305013	0.9959208
4/30/2009 14:15	2121	2.731916	21.786499	6.30791	0.9963784
4/30/2009 14:15	2122	2.730827	21.788422	6.305396	0.9959813
4/30/2009 14:15	2123	2.731859	21.787476	6.307778	0.9963575
4/30/2009 14:15	2124	2.730934	21.787476	6.305642	0.9960201
4/30/2009 14:15	2125	2.731527	21.787476	6.307012	0.9962365
4/30/2009 14:15	2126	2.729717	21.786499	6.302833	0.9955764
4/30/2009 14:15	2127	2.732077	21.785065	6.30828	0.9964368
4/30/2009 14:15	2128	2.732618	21.788422	6.309531	0.9966344
4/30/2009 14:15	2129	2.732025	21.786011	6.308161	0.996418
4/30/2009 14:15	2130	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:15	2131	2.73251	21.787476	6.30928	0.9965948
4/30/2009 14:15	2132	2.731968	21.786499	6.308029	0.9963972
4/30/2009 14:15	2133	2.730774	21.786957	6.305272	0.9959617
4/30/2009 14:15	2134	2.731211	21.784576	6.306281	0.9961211
4/30/2009 14:15	2135	2.731104	21.786957	6.306034	0.996082
4/30/2009 14:15	2136	2.731859	21.786499	6.307778	0.9963575
4/30/2009 14:15	2137	2.733219	21.786011	6.310918	0.9968535
4/30/2009 14:15	2138	2.731426	21.784576	6.306778	0.9961996
4/30/2009 14:15	2139	2.731916	21.786011	6.30791	0.9963784
4/30/2009 14:15	2140	2.731859	21.785522	6.307778	0.9963575
4/30/2009 14:15	2141	2.731476	21.78363	6.306893	0.9962177
4/30/2009 14:15	2142	2.731527	21.786499	6.307012	0.9962365
4/30/2009 14:15	2143	2.73229	21.790375	6.308774	0.9965148
4/30/2009 14:15	2144	2.730774	21.786499	6.305272	0.9959617
4/30/2009 14:15	2145	2.730555	21.78891	6.304766	0.9958817
4/30/2009 14:15	2146	2.730448	21.786011	6.304519	0.9958427
4/30/2009 14:15	2147	2.730827	21.786011	6.305396	0.9959813
4/30/2009 14:15	2148	2.730497	21.786957	6.304634	0.9958609
4/30/2009 14:15	2149	2.730497	21.785522	6.304634	0.9958609
4/30/2009 14:15	2150	2.730986	21.785065	6.305761	0.9960389
4/30/2009 14:15	2151	2.731754	21.784576	6.307536	0.9963193
4/30/2009 14:15	2152	2.731636	21.787476	6.307263	0.9962762
4/30/2009 14:15	2153	2.731802	21.784576	6.307646	0.9963367
4/30/2009 14:15	2154	2.731211	21.786011	6.306281	0.9961211
4/30/2009 14:15	2155	2.731968	21.787476	6.308029	0.9963972
4/30/2009 14:15	2156	2.730009	21.786011	6.303506	0.9956827
4/30/2009 14:15	2157	2.731916	21.785522	6.30791	0.9963784
4/30/2009 14:15	2158	2.731476	21.785522	6.306893	0.9962177
4/30/2009 14:15	2159	2.732782	21.787933	6.30991	0.9966943
4/30/2009 14:16	2160	2.732944	21.78363	6.310284	0.9967534
4/30/2009 14:16	2161	2.732128	21.785522	6.308399	0.9964556
4/30/2009 14:16	2162	2.73229	21.785522	6.308774	0.9965148
4/30/2009 14:16	2163	2.732128	21.78363	6.308399	0.9964556

4/30/2009 14:16	2164	2.731754	21.784088	6.307536	0.9963193
4/30/2009 14:16	2165	2.732729	21.789429	6.309786	0.9966747
4/30/2009 14:16	2166	2.730497	21.785522	6.304634	0.9958609
4/30/2009 14:16	2167	2.733757	21.787476	6.31216	0.9970497
4/30/2009 14:16	2168	2.732567	21.785522	6.309412	0.9966156
4/30/2009 14:16	2169	2.730064	21.786011	6.303634	0.9957029
4/30/2009 14:16	2170	2.731476	21.787476	6.306893	0.9962177
4/30/2009 14:16	2171	2.73316	21.785522	6.310781	0.9968319
4/30/2009 14:16	2172	2.730448	21.786957	6.304519	0.9958427
4/30/2009 14:16	2173	2.73251	21.786957	6.30928	0.9965948
4/30/2009 14:16	2174	2.730345	21.785522	6.304282	0.9958053
4/30/2009 14:16	2175	2.730064	21.786957	6.303634	0.9957029
4/30/2009 14:16	2176	2.732407	21.784576	6.309042	0.9965572
4/30/2009 14:16	2177	2.730986	21.785065	6.305761	0.9960389
4/30/2009 14:16	2178	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:16	2179	2.731426	21.784576	6.306778	0.9961996
4/30/2009 14:16	2180	2.730402	21.785522	6.304413	0.995826
4/30/2009 14:16	2181	2.731754	21.785065	6.307536	0.9963193
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4/30/2009 14:16	2184	2.731697	21.785065	6.307404	0.9962984
4/30/2009 14:16	2185	2.730614	21.787476	6.304903	0.9959034
4/30/2009 14:16	2186	2.730881	21.784576	6.305519	0.9960007
4/30/2009 14:16	2187	2.731264	21.785065	6.306404	0.9961405
4/30/2009 14:16	2188	2.731153	21.782166	6.306149	0.9961002
4/30/2009 14:16	2189	2.731476	21.786957	6.306893	0.9962177
4/30/2009 14:16	2190	2.730064	21.785522	6.303634	0.9957029
4/30/2009 14:16	2191	2.731636	21.786499	6.307263	0.9962762
4/30/2009 14:16	2192	2.73251	21.786011	6.30928	0.9965948
4/30/2009 14:16	2193	2.731373	21.784576	6.306655	0.9961801
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4/30/2009 14:16	2195	2.731527	21.784088	6.307012	0.9962365
4/30/2009 14:16	2196	2.731802	21.785065	6.307646	0.9963367
4/30/2009 14:16	2197	2.733219	21.787476	6.310918	0.9968535
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4/30/2009 14:16	2199	2.73023	21.786499	6.304017	0.9957634
4/30/2009 14:16	2200	2.732077	21.784576	6.30828	0.9964368
4/30/2009 14:16	2201	2.731968	21.786499	6.308029	0.9963972
4/30/2009 14:16	2202	2.732407	21.785065	6.309042	0.9965572
4/30/2009 14:16	2203	2.731319	21.785065	6.306532	0.9961607
4/30/2009 14:16	2204	2.731754	21.787933	6.307536	0.9963193
4/30/2009 14:16	2205	2.733	21.786499	6.310412	0.9967736
4/30/2009 14:16	2206	2.73229	21.784088	6.308774	0.9965148
4/30/2009 14:16	2207	2.731041	21.786499	6.305889	0.9960591
4/30/2009 14:16	2208	2.73251	21.787476	6.30928	0.9965948
4/30/2009 14:16	2209	2.731968	21.784576	6.308029	0.9963972
4/30/2009 14:16	2210	2.731916	21.783112	6.30791	0.9963784
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4/30/2009 14:16	2212	2.731527	21.785065	6.307012	0.9962365
4/30/2009 14:16	2213	2.731636	21.785065	6.307263	0.9962762
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4/30/2009 14:16	2215	2.73251	21.785522	6.30928	0.9965948
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4/30/2009 14:17	2220	2.732618	21.786957	6.309531	0.9966344
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4/30/2009 14:17	2222	2.732077	21.784576	6.30828	0.9964368
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4/30/2009 14:17	2225	2.731916	21.785522	6.30791	0.9963784
4/30/2009 14:17	2226	2.730881	21.785065	6.305519	0.9960007
4/30/2009 14:17	2227	2.733109	21.787933	6.310663	0.9968132
4/30/2009 14:17	2228	2.731636	21.786011	6.307263	0.9962762
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4/30/2009 14:17	2231	2.731426	21.783112	6.306778	0.9961996
4/30/2009 14:17	2232	2.732077	21.786957	6.30828	0.9964368
4/30/2009 14:17	2233	2.732077	21.785522	6.30828	0.9964368
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4/30/2009 14:17	2235	2.732243	21.782654	6.308663	0.9964973
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4/30/2009 14:17	2237	2.731968	21.784088	6.308029	0.9963972
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4/30/2009 14:17	2245	2.731859	21.784576	6.307778	0.9963575
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4/30/2009 14:17	2252	2.731588	21.785065	6.307153	0.9962588
4/30/2009 14:17	2253	2.731916	21.785065	6.30791	0.9963784
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4/30/2009 14:17	2262	2.731527	21.785065	6.307012	0.9962365
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4/30/2009 14:17	2264	2.731373	21.784576	6.306655	0.9961801
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4/30/2009 14:17	2266	2.731041	21.785065	6.305889	0.9960591
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4/30/2009 14:17	2268	2.730661	21.782166	6.305013	0.9959208
4/30/2009 14:17	2269	2.730402	21.786011	6.304413	0.995826
4/30/2009 14:17	2270	2.731373	21.785522	6.306655	0.9961801
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4/30/2009 14:17	2274	2.732243	21.782166	6.308663	0.9964973
4/30/2009 14:17	2275	2.731373	21.785522	6.306655	0.9961801
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4/30/2009 14:18	2293	2.731041	21.784576	6.305889	0.9960591
4/30/2009 14:18	2294	2.731153	21.785065	6.306149	0.9961002
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4/30/2009 14:18	2296	2.731697	21.785522	6.307404	0.9962984
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4/30/2009 14:18	2303	2.730774	21.78363	6.305272	0.9959617
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4/30/2009 14:18	2324	2.730934	21.784576	6.305642	0.9960201
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4/30/2009 14:19	2351	2.729635	21.785522	6.302643	0.9955464
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4/30/2009 14:19	2360	2.730722	21.785065	6.305153	0.9959429
4/30/2009 14:19	2361	2.731041	21.786957	6.305889	0.9960591
4/30/2009 14:19	2362	2.731264	21.785522	6.306404	0.9961405
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4/30/2009 14:19	2370	2.730986	21.784576	6.305761	0.9960389
4/30/2009 14:19	2371	2.73229	21.781677	6.308774	0.9965148
4/30/2009 14:19	2372	2.730934	21.786499	6.305642	0.9960201
4/30/2009 14:19	2373	2.731916	21.783112	6.30791	0.9963784
4/30/2009 14:19	2374	2.731104	21.786011	6.306034	0.996082
4/30/2009 14:19	2375	2.730774	21.785065	6.305272	0.9959617
4/30/2009 14:19	2376	2.730064	21.784088	6.303634	0.9957029
4/30/2009 14:19	2377	2.730774	21.784576	6.305272	0.9959617
4/30/2009 14:19	2378	2.731319	21.783112	6.306532	0.9961607
4/30/2009 14:19	2379	2.730402	21.784088	6.304413	0.995826

4/30/2009 14:19	2380	2.731264	21.78363	6.306404	0.9961405
4/30/2009 14:19	2381	2.729961	21.782166	6.303397	0.9956655
4/30/2009 14:19	2382	2.730722	21.782166	6.305153	0.9959429
4/30/2009 14:19	2383	2.731211	21.78363	6.306281	0.9961211
4/30/2009 14:19	2384	2.732668	21.785065	6.309646	0.9966526
4/30/2009 14:19	2385	2.731636	21.786011	6.307263	0.9962762
4/30/2009 14:19	2386	2.730614	21.784576	6.304903	0.9959034
4/30/2009 14:19	2387	2.731802	21.785522	6.307646	0.9963367
4/30/2009 14:19	2388	2.730934	21.784576	6.305642	0.9960201
4/30/2009 14:19	2389	2.730064	21.785522	6.303634	0.9957029
4/30/2009 14:19	2390	2.730125	21.785065	6.303775	0.9957252
4/30/2009 14:19	2391	2.731426	21.782654	6.306778	0.9961996
4/30/2009 14:19	2392	2.731916	21.783112	6.30791	0.9963784
4/30/2009 14:19	2393	2.730986	21.783112	6.305761	0.9960389
4/30/2009 14:19	2394	2.730497	21.786499	6.304634	0.9958609
4/30/2009 14:19	2395	2.731153	21.78363	6.306149	0.9961002
4/30/2009 14:19	2396	2.732243	21.78363	6.308663	0.9964973
4/30/2009 14:19	2397	2.729849	21.784088	6.303136	0.9956243
4/30/2009 14:19	2398	2.732183	21.784576	6.308527	0.9964758
4/30/2009 14:19	2399	2.731319	21.782654	6.306532	0.9961607
4/30/2009 14:20	2400	2.732782	21.784088	6.30991	0.9966943
4/30/2009 14:20	2401	2.73251	21.78363	6.30928	0.9965948
4/30/2009 14:20	2402	2.731476	21.784576	6.306893	0.9962177
4/30/2009 14:20	2403	2.73283	21.780731	6.31002	0.9967117
4/30/2009 14:20	2404	2.732944	21.786011	6.310284	0.9967534
4/30/2009 14:20	2405	2.729961	21.785065	6.303397	0.9956655
4/30/2009 14:20	2406	2.731754	21.782166	6.307536	0.9963193
4/30/2009 14:20	2407	2.732668	21.784576	6.309646	0.9966526
4/30/2009 14:20	2408	2.731426	21.78363	6.306778	0.9961996
4/30/2009 14:20	2409	2.731319	21.783112	6.306532	0.9961607
4/30/2009 14:20	2410	2.730614	21.781158	6.304903	0.9959034
4/30/2009 14:20	2411	2.731104	21.785065	6.306034	0.996082
4/30/2009 14:20	2412	2.731373	21.784088	6.306655	0.9961801
4/30/2009 14:20	2413	2.732183	21.786011	6.308527	0.9964758
4/30/2009 14:20	2414	2.731916	21.783112	6.30791	0.9963784
4/30/2009 14:20	2415	2.732077	21.78363	6.30828	0.9964368
4/30/2009 14:20	2416	2.731264	21.786011	6.306404	0.9961405
4/30/2009 14:20	2417	2.731859	21.783112	6.307778	0.9963575
4/30/2009 14:20	2418	2.730722	21.783112	6.305153	0.9959429
4/30/2009 14:20	2419	2.732025	21.784576	6.308161	0.996418
4/30/2009 14:20	2420	2.732128	21.782166	6.308399	0.9964556
4/30/2009 14:20	2421	2.731588	21.782166	6.307153	0.9962588
4/30/2009 14:20	2422	2.731916	21.785065	6.30791	0.9963784
4/30/2009 14:20	2423	2.730661	21.784576	6.305013	0.9959208
4/30/2009 14:20	2424	2.731153	21.785065	6.306149	0.9961002
4/30/2009 14:20	2425	2.730345	21.786499	6.304282	0.9958053
4/30/2009 14:20	2426	2.731527	21.784576	6.307012	0.9962365
4/30/2009 14:20	2427	2.731636	21.784088	6.307263	0.9962762
4/30/2009 14:20	2428	2.731373	21.782654	6.306655	0.9961801
4/30/2009 14:20	2429	2.732458	21.786011	6.309161	0.996576
4/30/2009 14:20	2430	2.730774	21.784088	6.305272	0.9959617
4/30/2009 14:20	2431	2.732344	21.784576	6.308897	0.9965343
4/30/2009 14:20	2432	2.731319	21.784088	6.306532	0.9961607
4/30/2009 14:20	2433	2.731211	21.785522	6.306281	0.9961211

4/30/2009 14:20	2434	2.729849	21.78363	6.303136	0.9956243
4/30/2009 14:20	2435	2.731588	21.782654	6.307153	0.9962588
4/30/2009 14:20	2436	2.731153	21.785522	6.306149	0.9961002
4/30/2009 14:20	2437	2.732567	21.782654	6.309412	0.9966156
4/30/2009 14:20	2438	2.731264	21.785522	6.306404	0.9961405
4/30/2009 14:20	2439	2.732883	21.784576	6.310143	0.9967311
4/30/2009 14:20	2440	2.731697	21.786957	6.307404	0.9962984
4/30/2009 14:20	2441	2.730345	21.787476	6.304282	0.9958053
4/30/2009 14:20	2442	2.731527	21.78363	6.307012	0.9962365
4/30/2009 14:20	2443	2.732944	21.784088	6.310284	0.9967534
4/30/2009 14:20	2444	2.731916	21.786011	6.30791	0.9963784
4/30/2009 14:20	2445	2.730284	21.784088	6.304141	0.995783
4/30/2009 14:20	2446	2.730934	21.786499	6.305642	0.9960201
4/30/2009 14:20	2447	2.732025	21.78363	6.308161	0.996418
4/30/2009 14:20	2448	2.731264	21.786011	6.306404	0.9961405
4/30/2009 14:20	2449	2.732183	21.784088	6.308527	0.9964758
4/30/2009 14:20	2450	2.731754	21.783112	6.307536	0.9963193
4/30/2009 14:20	2451	2.730661	21.782654	6.305013	0.9959208
4/30/2009 14:20	2452	2.731476	21.784088	6.306893	0.9962177
4/30/2009 14:20	2453	2.731264	21.78363	6.306404	0.9961405
4/30/2009 14:20	2454	2.732344	21.784088	6.308897	0.9965343
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4/30/2009 14:20	2456	2.730125	21.781677	6.303775	0.9957252
4/30/2009 14:20	2457	2.732883	21.78363	6.310143	0.9967311
4/30/2009 14:20	2458	2.731104	21.786011	6.306034	0.996082
4/30/2009 14:20	2459	2.730661	21.784576	6.305013	0.9959208
4/30/2009 14:21	2460	2.731916	21.78363	6.30791	0.9963784
4/30/2009 14:21	2461	2.732668	21.786011	6.309646	0.9966526
4/30/2009 14:21	2462	2.732344	21.783112	6.308897	0.9965343
4/30/2009 14:21	2463	2.731636	21.785522	6.307263	0.9962762
4/30/2009 14:21	2464	2.731636	21.78363	6.307263	0.9962762
4/30/2009 14:21	2465	2.731859	21.786957	6.307778	0.9963575
4/30/2009 14:21	2466	2.731426	21.784576	6.306778	0.9961996
4/30/2009 14:21	2467	2.729692	21.784088	6.302775	0.9955673
4/30/2009 14:21	2468	2.731476	21.78363	6.306893	0.9962177
4/30/2009 14:21	2469	2.730614	21.784088	6.304903	0.9959034
4/30/2009 14:21	2470	2.731476	21.78363	6.306893	0.9962177
4/30/2009 14:21	2471	2.731476	21.783112	6.306893	0.9962177
4/30/2009 14:21	2472	2.730986	21.785522	6.305761	0.9960389
4/30/2009 14:21	2473	2.731636	21.78363	6.307263	0.9962762
4/30/2009 14:21	2474	2.73229	21.78363	6.308774	0.9965148
4/30/2009 14:21	2475	2.731426	21.781677	6.306778	0.9961996
4/30/2009 14:21	2476	2.731859	21.78363	6.307778	0.9963575
4/30/2009 14:21	2477	2.731636	21.783112	6.307263	0.9962762
4/30/2009 14:21	2478	2.731697	21.784088	6.307404	0.9962984
4/30/2009 14:21	2479	2.732183	21.785522	6.308527	0.9964758
4/30/2009 14:21	2480	2.730555	21.78363	6.304766	0.9958817
4/30/2009 14:21	2481	2.73283	21.782654	6.31002	0.9967117
4/30/2009 14:21	2482	2.732407	21.785522	6.309042	0.9965572
4/30/2009 14:21	2483	2.731859	21.784576	6.307778	0.9963575
4/30/2009 14:21	2484	2.732458	21.783112	6.309161	0.996576
4/30/2009 14:21	2485	2.730064	21.783112	6.303634	0.9957029
4/30/2009 14:21	2486	2.73229	21.785522	6.308774	0.9965148
4/30/2009 14:21	2487	2.731859	21.784088	6.307778	0.9963575

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4/30/2009 14:21	2490	2.731211	21.783112	6.306281	0.9961211
4/30/2009 14:21	2491	2.731859	21.78363	6.307778	0.9963575
4/30/2009 14:21	2492	2.730722	21.784088	6.305153	0.9959429
4/30/2009 14:21	2493	2.730934	21.784576	6.305642	0.9960201
4/30/2009 14:21	2494	2.730827	21.784088	6.305396	0.9959813
4/30/2009 14:21	2495	2.732668	21.781677	6.309646	0.9966526
4/30/2009 14:21	2496	2.731527	21.786957	6.307012	0.9962365
4/30/2009 14:21	2497	2.731373	21.780731	6.306655	0.9961801
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4/30/2009 14:21	2501	2.731153	21.786499	6.306149	0.9961002
4/30/2009 14:21	2502	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:21	2503	2.731636	21.78363	6.307263	0.9962762
4/30/2009 14:21	2504	2.731588	21.783112	6.307153	0.9962588
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4/30/2009 14:21	2506	2.731264	21.785065	6.306404	0.9961405
4/30/2009 14:21	2507	2.731916	21.785065	6.30791	0.9963784
4/30/2009 14:21	2508	2.731476	21.784088	6.306893	0.9962177
4/30/2009 14:21	2509	2.731476	21.782166	6.306893	0.9962177
4/30/2009 14:21	2510	2.730774	21.782654	6.305272	0.9959617
4/30/2009 14:21	2511	2.731754	21.78363	6.307536	0.9963193
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4/30/2009 14:21	2513	2.731319	21.786011	6.306532	0.9961607
4/30/2009 14:21	2514	2.730827	21.781677	6.305396	0.9959813
4/30/2009 14:21	2515	2.731426	21.785065	6.306778	0.9961996
4/30/2009 14:21	2516	2.731588	21.783112	6.307153	0.9962588
4/30/2009 14:21	2517	2.730881	21.782166	6.305519	0.9960007
4/30/2009 14:21	2518	2.729797	21.783112	6.303018	0.9956056
4/30/2009 14:21	2519	2.732183	21.784576	6.308527	0.9964758
4/30/2009 14:22	2520	2.731754	21.784088	6.307536	0.9963193
4/30/2009 14:22	2521	2.731426	21.782166	6.306778	0.9961996
4/30/2009 14:22	2522	2.731153	21.786011	6.306149	0.9961002
4/30/2009 14:22	2523	2.73251	21.784576	6.30928	0.9965948
4/30/2009 14:22	2524	2.729523	21.785522	6.302383	0.9955053
4/30/2009 14:22	2525	2.731264	21.785522	6.306404	0.9961405
4/30/2009 14:22	2526	2.730774	21.786011	6.305272	0.9959617
4/30/2009 14:22	2527	2.730009	21.784576	6.303506	0.9956827
4/30/2009 14:22	2528	2.730934	21.785522	6.305642	0.9960201
4/30/2009 14:22	2529	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:22	2530	2.730345	21.781677	6.304282	0.9958053
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4/30/2009 14:22	2533	2.731916	21.78363	6.30791	0.9963784
4/30/2009 14:22	2534	2.732243	21.786499	6.308663	0.9964973
4/30/2009 14:22	2535	2.729797	21.785522	6.303018	0.9956056
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4/30/2009 14:22	2537	2.730986	21.78363	6.305761	0.9960389
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4/30/2009 14:22	2545	2.731104	21.788422	6.306034	0.996082
4/30/2009 14:22	2546	2.730183	21.782654	6.303907	0.9957461
4/30/2009 14:22	2547	2.730986	21.785522	6.305761	0.9960389
4/30/2009 14:22	2548	2.732183	21.784576	6.308527	0.9964758
4/30/2009 14:22	2549	2.731319	21.785065	6.306532	0.9961607
4/30/2009 14:22	2550	2.731041	21.78363	6.305889	0.9960591
4/30/2009 14:22	2551	2.730284	21.784576	6.304141	0.995783
4/30/2009 14:22	2552	2.730183	21.78363	6.303907	0.9957461
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4/30/2009 14:22	2554	2.730722	21.78363	6.305153	0.9959429
4/30/2009 14:22	2555	2.730448	21.782166	6.304519	0.9958427
4/30/2009 14:22	2556	2.731264	21.783112	6.306404	0.9961405
4/30/2009 14:22	2557	2.731968	21.781677	6.308029	0.9963972
4/30/2009 14:22	2558	2.730986	21.783112	6.305761	0.9960389
4/30/2009 14:22	2559	2.730448	21.782654	6.304519	0.9958427
4/30/2009 14:22	2560	2.730064	21.785522	6.303634	0.9957029
4/30/2009 14:22	2561	2.73283	21.78363	6.31002	0.9967117
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4/30/2009 14:22	2564	2.730881	21.783112	6.305519	0.9960007
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4/30/2009 14:22	2566	2.731697	21.784576	6.307404	0.9962984
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4/30/2009 14:22	2570	2.731697	21.783112	6.307404	0.9962984
4/30/2009 14:22	2571	2.731916	21.786957	6.30791	0.9963784
4/30/2009 14:22	2572	2.730614	21.782166	6.304903	0.9959034
4/30/2009 14:22	2573	2.730722	21.78363	6.305153	0.9959429
4/30/2009 14:22	2574	2.729742	21.785065	6.30289	0.9955854
4/30/2009 14:22	2575	2.730661	21.781677	6.305013	0.9959208
4/30/2009 14:22	2576	2.730125	21.785522	6.303775	0.9957252
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4/30/2009 14:22	2578	2.72893	21.782166	6.301014	0.9952891
4/30/2009 14:22	2579	2.732344	21.784576	6.308897	0.9965343
4/30/2009 14:23	2580	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:23	2581	2.731373	21.784088	6.306655	0.9961801
4/30/2009 14:23	2582	2.730284	21.784088	6.304141	0.995783
4/30/2009 14:23	2583	2.730555	21.783112	6.304766	0.9958817
4/30/2009 14:23	2584	2.730402	21.785522	6.304413	0.995826
4/30/2009 14:23	2585	2.731264	21.785065	6.306404	0.9961405
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4/30/2009 14:23	2589	2.731754	21.782654	6.307536	0.9963193
4/30/2009 14:23	2590	2.730345	21.786011	6.304282	0.9958053
4/30/2009 14:23	2591	2.731264	21.784576	6.306404	0.9961405
4/30/2009 14:23	2592	2.732025	21.785065	6.308161	0.996418
4/30/2009 14:23	2593	2.733	21.786499	6.310412	0.9967736
4/30/2009 14:23	2594	2.731916	21.78363	6.30791	0.9963784
4/30/2009 14:23	2595	2.731104	21.782654	6.306034	0.996082

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4/30/2009 14:23	2597	2.732344	21.782166	6.308897	0.9965343
4/30/2009 14:23	2598	2.732243	21.786499	6.308663	0.9964973
4/30/2009 14:23	2599	2.729357	21.783112	6.302001	0.995445
4/30/2009 14:23	2600	2.729849	21.785065	6.303136	0.9956243
4/30/2009 14:23	2601	2.731153	21.78363	6.306149	0.9961002
4/30/2009 14:23	2602	2.730345	21.786011	6.304282	0.9958053
4/30/2009 14:23	2603	2.732407	21.783112	6.309042	0.9965572
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4/30/2009 14:23	2605	2.730881	21.786499	6.305519	0.9960007
4/30/2009 14:23	2606	2.731802	21.784576	6.307646	0.9963367
4/30/2009 14:23	2607	2.731636	21.78363	6.307263	0.9962762
4/30/2009 14:23	2608	2.731211	21.78363	6.306281	0.9961211
4/30/2009 14:23	2609	2.729883	21.784576	6.303216	0.9956369
4/30/2009 14:23	2610	2.730064	21.784576	6.303634	0.9957029
4/30/2009 14:23	2611	2.731636	21.78363	6.307263	0.9962762
4/30/2009 14:23	2612	2.730009	21.782166	6.303506	0.9956827
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4/30/2009 14:23	2614	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:23	2615	2.729195	21.78363	6.301626	0.9953858
4/30/2009 14:23	2616	2.730284	21.784088	6.304141	0.995783
4/30/2009 14:23	2617	2.731153	21.784576	6.306149	0.9961002
4/30/2009 14:23	2618	2.731636	21.781677	6.307263	0.9962762
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4/30/2009 14:23	2620	2.731859	21.784576	6.307778	0.9963575
4/30/2009 14:23	2621	2.729902	21.784088	6.30326	0.9956439
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4/30/2009 14:23	2623	2.730858	21.784576	6.305466	0.9959923
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4/30/2009 14:23	2626	2.731426	21.784576	6.306778	0.9961996
4/30/2009 14:23	2627	2.729742	21.785065	6.30289	0.9955854
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4/30/2009 14:23	2637	2.732407	21.782654	6.309042	0.9965572
4/30/2009 14:23	2638	2.731588	21.784088	6.307153	0.9962588
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4/30/2009 14:24	2640	2.731802	21.782654	6.307646	0.9963367
4/30/2009 14:24	2641	2.731754	21.781677	6.307536	0.9963193
4/30/2009 14:24	2642	2.730125	21.78363	6.303775	0.9957252
4/30/2009 14:24	2643	2.730345	21.785065	6.304282	0.9958053
4/30/2009 14:24	2644	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:24	2645	2.730448	21.784576	6.304519	0.9958427
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4/30/2009 14:24	2647	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:24	2648	2.731104	21.782166	6.306034	0.996082
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4/30/2009 14:24	2658	2.730497	21.78363	6.304634	0.9958609
4/30/2009 14:24	2659	2.730345	21.785065	6.304282	0.9958053
4/30/2009 14:24	2660	2.731802	21.784088	6.307646	0.9963367
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4/30/2009 14:24	2662	2.730661	21.786011	6.305013	0.9959208
4/30/2009 14:24	2663	2.730402	21.782166	6.304413	0.995826
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4/30/2009 14:24	2666	2.732243	21.782654	6.308663	0.9964973
4/30/2009 14:24	2667	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:24	2668	2.732025	21.785065	6.308161	0.996418
4/30/2009 14:24	2669	2.731697	21.784088	6.307404	0.9962984
4/30/2009 14:24	2670	2.731968	21.784576	6.308029	0.9963972
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4/30/2009 14:24	2674	2.731754	21.78363	6.307536	0.9963193
4/30/2009 14:24	2675	2.732243	21.783112	6.308663	0.9964973
4/30/2009 14:24	2676	2.732025	21.782166	6.308161	0.996418
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4/30/2009 14:24	2679	2.731859	21.783112	6.307778	0.9963575
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4/30/2009 14:24	2686	2.731319	21.784088	6.306532	0.9961607
4/30/2009 14:24	2687	2.731968	21.782166	6.308029	0.9963972
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4/30/2009 14:25	2710	2.730614	21.783112	6.304903	0.9959034
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4/30/2009 14:26	2782	2.729849	21.782166	6.303136	0.9956243
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4/30/2009 14:27	2830	2.731636	21.783112	6.307263	0.9962762
4/30/2009 14:27	2831	2.731264	21.780731	6.306404	0.9961405
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4/30/2009 14:27	2833	2.729961	21.783112	6.303397	0.9956655
4/30/2009 14:27	2834	2.729742	21.782654	6.30289	0.9955854
4/30/2009 14:27	2835	2.730986	21.782654	6.305761	0.9960389
4/30/2009 14:27	2836	2.730009	21.782166	6.303506	0.9956827
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4/30/2009 14:27	2838	2.731211	21.784576	6.306281	0.9961211
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4/30/2009 14:27	2844	2.731476	21.785065	6.306893	0.9962177
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4/30/2009 14:28	2892	2.731319	21.784576	6.306532	0.9961607
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4/30/2009 14:28	2894	2.73251	21.783112	6.30928	0.9965948
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4/30/2009 14:30	3052.001	2.731636	21.775879	6.307263	0.9962762
4/30/2009 14:30	3052.22	2.73023	21.796661	6.304017	0.9957634
4/30/2009 14:30	3053	2.730749	21.786957	6.305215	0.9959527
4/30/2009 14:30	3054	2.731104	21.788422	6.306034	0.996082
4/30/2009 14:30	3055	2.731373	21.78363	6.306655	0.9961801
4/30/2009 14:30	3056	2.730448	21.785522	6.304519	0.9958427
4/30/2009 14:30	3057	2.728853	21.783112	6.300838	0.9952613
4/30/2009 14:30	3058	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:30	3059	2.731373	21.784088	6.306655	0.9961801
4/30/2009 14:31	3060	2.731476	21.780731	6.306893	0.9962177
4/30/2009 14:31	3061	2.73283	21.784088	6.31002	0.9967117
4/30/2009 14:31	3062	2.730284	21.784576	6.304141	0.995783
4/30/2009 14:31	3063	2.731319	21.783112	6.306532	0.9961607
4/30/2009 14:31	3064	2.730661	21.780731	6.305013	0.9959208
4/30/2009 14:31	3065	2.731373	21.782166	6.306655	0.9961801
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4/30/2009 14:31	3069	2.730881	21.784088	6.305519	0.9960007
4/30/2009 14:31	3070	2.731373	21.784576	6.306655	0.9961801
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4/30/2009 14:31	3073	2.729673	21.782166	6.302732	0.9955605
4/30/2009 14:31	3074	2.731754	21.782654	6.307536	0.9963193
4/30/2009 14:31	3075	2.731373	21.784088	6.306655	0.9961801
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4/30/2009 14:31	3078	2.731916	21.781158	6.30791	0.9963784
4/30/2009 14:31	3079	2.730497	21.783112	6.304634	0.9958609
4/30/2009 14:31	3080	2.730661	21.78363	6.305013	0.9959208
4/30/2009 14:31	3081	2.730577	21.781677	6.304819	0.9958901

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4/30/2009 14:31	3084	2.72928	21.780212	6.301824	0.995417
4/30/2009 14:31	3085	2.730064	21.782166	6.303634	0.9957029
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4/30/2009 14:31	3087	2.731373	21.783112	6.306655	0.9961801
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4/30/2009 14:31	3089	2.731153	21.784576	6.306149	0.9961002
4/30/2009 14:31	3090	2.730402	21.782166	6.304413	0.995826
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4/30/2009 14:31	3092	2.732618	21.785065	6.309531	0.9966344
4/30/2009 14:31	3093	2.730427	21.782654	6.304471	0.9958351
4/30/2009 14:31	3094	2.731041	21.784576	6.305889	0.9960591
4/30/2009 14:31	3095	2.731024	21.783112	6.305849	0.9960528
4/30/2009 14:31	3096	2.731859	21.782166	6.307778	0.9963575
4/30/2009 14:31	3097	2.731373	21.782654	6.306655	0.9961801
4/30/2009 14:31	3098	2.731234	21.781158	6.306334	0.9961294
4/30/2009 14:31	3099	2.728413	21.784576	6.29982	0.9951005
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4/30/2009 14:31	3103	2.731697	21.781677	6.307404	0.9962984
4/30/2009 14:31	3104	2.732025	21.783112	6.308161	0.996418
4/30/2009 14:31	3105	2.730774	21.781158	6.305272	0.9959617
4/30/2009 14:31	3106	2.727983	21.781677	6.298829	0.994944
4/30/2009 14:31	3107	2.731802	21.785065	6.307646	0.9963367
4/30/2009 14:31	3108	2.730371	21.78363	6.304343	0.9958149
4/30/2009 14:31	3109	2.730345	21.785065	6.304282	0.9958053
4/30/2009 14:31	3110	2.731373	21.783112	6.306655	0.9961801
4/30/2009 14:31	3111	2.731636	21.782166	6.307263	0.9962762
4/30/2009 14:31	3112	2.729742	21.784088	6.30289	0.9955854
4/30/2009 14:31	3113	2.731211	21.785065	6.306281	0.9961211
4/30/2009 14:31	3114	2.731104	21.784088	6.306034	0.996082
4/30/2009 14:31	3115	2.731754	21.78363	6.307536	0.9963193
4/30/2009 14:31	3116	2.731264	21.786011	6.306404	0.9961405
4/30/2009 14:31	3117	2.731527	21.78363	6.307012	0.9962365
4/30/2009 14:31	3118	2.729849	21.784576	6.303136	0.9956243
4/30/2009 14:31	3119	2.731264	21.78363	6.306404	0.9961405
4/30/2009 14:32	3120	2.731426	21.781677	6.306778	0.9961996
4/30/2009 14:32	3121	2.731373	21.780731	6.306655	0.9961801
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4/30/2009 14:32	3124	2.730774	21.786011	6.305272	0.9959617
4/30/2009 14:32	3125	2.732025	21.78363	6.308161	0.996418
4/30/2009 14:32	3126	2.730827	21.781677	6.305396	0.9959813
4/30/2009 14:32	3127	2.729401	21.782654	6.302101	0.9954608
4/30/2009 14:32	3128	2.730009	21.781677	6.303506	0.9956827
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4/30/2009 14:32	3130	2.729357	21.78363	6.302001	0.995445
4/30/2009 14:32	3131	2.730827	21.784088	6.305396	0.9959813
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4/30/2009 14:32	3145	2.731153	21.782166	6.306149	0.9961002
4/30/2009 14:32	3146	2.731754	21.785065	6.307536	0.9963193
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4/30/2009 14:34	3277	2.729195	21.784088	6.301626	0.9953858
4/30/2009 14:34	3278	2.730009	21.785065	6.303506	0.9956827
4/30/2009 14:34	3279	2.731153	21.782654	6.306149	0.9961002
4/30/2009 14:34	3280	2.731373	21.782654	6.306655	0.9961801
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4/30/2009 14:38	3504	2.729017	21.78363	6.301216	0.995321
4/30/2009 14:38	3505	2.729147	21.785522	6.301516	0.9953684
4/30/2009 14:38	3506	2.729195	21.783112	6.301626	0.9953858
4/30/2009 14:38	3507	2.730038	21.784576	6.303573	0.9956933
4/30/2009 14:38	3508	2.729902	21.781677	6.30326	0.9956439
4/30/2009 14:38	3509	2.730934	21.783112	6.305642	0.9960201
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4/30/2009 14:38	3512	2.730125	21.782654	6.303775	0.9957252
4/30/2009 14:38	3513	2.730448	21.785522	6.304519	0.9958427

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4/30/2009 14:38	3515	2.731426	21.784088	6.306778	0.9961996
4/30/2009 14:38	3516	2.729692	21.786011	6.302775	0.9955673
4/30/2009 14:38	3517	2.730038	21.782654	6.303573	0.9956933
4/30/2009 14:38	3518	2.729692	21.782654	6.302775	0.9955673
4/30/2009 14:38	3519	2.730371	21.785065	6.304343	0.9958149
4/30/2009 14:38	3520	2.728981	21.781677	6.301133	0.9953079
4/30/2009 14:38	3521	2.730345	21.784088	6.304282	0.9958053
4/30/2009 14:38	3522	2.729574	21.781158	6.302502	0.9955241
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4/30/2009 14:38	3526	2.730986	21.784088	6.305761	0.9960389
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4/30/2009 14:38	3529	2.729195	21.784088	6.301626	0.9953858
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4/30/2009 14:39	3564	2.730614	21.781677	6.304903	0.9959034
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4/30/2009 14:42	3732	2.729235	21.782166	6.301718	0.9954003
4/30/2009 14:42	3733	2.730284	21.783112	6.304141	0.995783
4/30/2009 14:42	3734	2.729692	21.780731	6.302775	0.9955673
4/30/2009 14:42	3735	2.729717	21.783112	6.302833	0.9955764
4/30/2009 14:42	3736	2.730722	21.781158	6.305153	0.9959429
4/30/2009 14:42	3737	2.731527	21.783112	6.307012	0.9962365
4/30/2009 14:42	3738	2.729017	21.785065	6.301216	0.995321
4/30/2009 14:42	3739	2.730427	21.784576	6.304471	0.9958351
4/30/2009 14:42	3740	2.729309	21.782166	6.30189	0.9954275
4/30/2009 14:42	3741	2.729778	21.78363	6.302974	0.9955987
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4/30/2009 14:42	3744	2.731588	21.781677	6.307153	0.9962588
4/30/2009 14:42	3745	2.730555	21.782654	6.304766	0.9958817
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4/30/2009 14:42	3749	2.729338	21.785065	6.301956	0.9954379
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4/30/2009 14:42	3751	2.72928	21.784088	6.301824	0.995417
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4/30/2009 14:42	3754	2.729902	21.784088	6.30326	0.9956439
4/30/2009 14:42	3755	2.730827	21.780731	6.305396	0.9959813
4/30/2009 14:42	3756	2.731319	21.780731	6.306532	0.9961607
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4/30/2009 14:42	3769	2.730183	21.782166	6.303907	0.9957461
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4/30/2009 14:42	3771	2.73064	21.779266	6.304964	0.995913
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4/30/2009 14:45	3957	2.730497	21.779724	6.304634	0.9958609
4/30/2009 14:45	3958	2.728495	21.782654	6.30001	0.9951305
4/30/2009 14:45	3959	2.730427	21.782166	6.304471	0.9958351
4/30/2009 14:46	3960	2.730934	21.784088	6.305642	0.9960201
4/30/2009 14:46	3961	2.731802	21.780212	6.307646	0.9963367
4/30/2009 14:46	3962	2.729635	21.780731	6.302643	0.9955464
4/30/2009 14:46	3963	2.728413	21.778778	6.29982	0.9951005
4/30/2009 14:46	3964	2.729523	21.784088	6.302383	0.9955053
4/30/2009 14:46	3965	2.729357	21.782654	6.302001	0.995445
4/30/2009 14:46	3966	2.730614	21.784576	6.304903	0.9959034
4/30/2009 14:46	3967	2.730614	21.781677	6.304903	0.9959034
4/30/2009 14:46	3968	2.731968	21.78363	6.308029	0.9963972
4/30/2009 14:46	3969	2.730555	21.783112	6.304766	0.9958817
4/30/2009 14:46	3970	2.730158	21.781677	6.30385	0.9957371
4/30/2009 14:46	3971	2.731041	21.781677	6.305889	0.9960591
4/30/2009 14:46	3972	2.729147	21.785065	6.301516	0.9953684
4/30/2009 14:46	3973	2.731527	21.782654	6.307012	0.9962365
4/30/2009 14:46	3974	2.731104	21.781158	6.306034	0.996082
4/30/2009 14:46	3975	2.729338	21.783112	6.301956	0.9954379
4/30/2009 14:46	3976	2.730881	21.781677	6.305519	0.9960007
4/30/2009 14:46	3977	2.731373	21.782654	6.306655	0.9961801
4/30/2009 14:46	3978	2.731373	21.782654	6.306655	0.9961801
4/30/2009 14:46	3979	2.730661	21.780731	6.305013	0.9959208
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4/30/2009 14:46	3981	2.729742	21.785522	6.30289	0.9955854
4/30/2009 14:46	3982	2.729849	21.781677	6.303136	0.9956243
4/30/2009 14:46	3983	2.729126	21.782166	6.301467	0.9953606
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4/30/2009 14:46	3985	2.7295	21.783112	6.30233	0.995497
4/30/2009 14:46	3986	2.72728	21.781158	6.297204	0.9946873
4/30/2009 14:46	3987	2.729235	21.782654	6.301718	0.9954003
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4/30/2009 14:46	3989	2.729849	21.782166	6.303136	0.9956243
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4/30/2009 14:46	3993	2.730009	21.783112	6.303506	0.9956827
4/30/2009 14:46	3994	2.729067	21.781158	6.301331	0.9953392
4/30/2009 14:46	3995	2.72961	21.782654	6.302586	0.9955374
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4/30/2009 14:46	3998	2.728312	21.784576	6.299587	0.9950637
4/30/2009 14:46	3999	2.730183	21.782166	6.303907	0.9957461

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4/30/2009 14:46	4001	2.730324	21.781158	6.304233	0.9957976
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4/30/2009 14:46	4014	2.729258	21.783112	6.301771	0.9954087
4/30/2009 14:46	4015	2.729454	21.784088	6.302225	0.9954804
4/30/2009 14:46	4016	2.730986	21.780731	6.305761	0.9960389
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4/30/2009 14:47	4030	2.728527	21.781158	6.300084	0.9951422
4/30/2009 14:47	4031	2.727766	21.783112	6.298327	0.9948647
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4/30/2009 14:49	4182	2.730125	21.781677	6.303775	0.9957252
4/30/2009 14:49	4183	2.730038	21.780731	6.303573	0.9956933
4/30/2009 14:49	4184	2.730774	21.780731	6.305272	0.9959617
4/30/2009 14:49	4185	2.729826	21.782166	6.303084	0.9956161
4/30/2009 14:49	4186	2.729523	21.780212	6.302383	0.9955053
4/30/2009 14:49	4187	2.728697	21.784576	6.300476	0.9952041
4/30/2009 14:49	4188	2.729635	21.782166	6.302643	0.9955464
4/30/2009 14:49	4189	2.730263	21.780212	6.304092	0.9957753
4/30/2009 14:49	4190	2.731264	21.782654	6.306404	0.9961405
4/30/2009 14:49	4191	2.730722	21.780731	6.305153	0.9959429
4/30/2009 14:49	4192	2.731319	21.782166	6.306532	0.9961607
4/30/2009 14:49	4193	2.731636	21.778259	6.307263	0.9962762
4/30/2009 14:49	4194	2.730934	21.781158	6.305642	0.9960201
4/30/2009 14:49	4195	2.731565	21.782166	6.3071	0.9962504
4/30/2009 14:49	4196	2.731476	21.780731	6.306893	0.9962177
4/30/2009 14:49	4197	2.730555	21.781677	6.304766	0.9958817
4/30/2009 14:49	4198	2.731426	21.779724	6.306778	0.9961996
4/30/2009 14:49	4199	2.731041	21.782654	6.305889	0.9960591
4/30/2009 14:50	4200	2.730125	21.781158	6.303775	0.9957252
4/30/2009 14:50	4201	2.73251	21.782166	6.30928	0.9965948
4/30/2009 14:50	4202	2.730827	21.779724	6.305396	0.9959813
4/30/2009 14:50	4203	2.730324	21.779266	6.304233	0.9957976
4/30/2009 14:50	4204	2.730009	21.781158	6.303506	0.9956827
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4/30/2009 14:50	4206	2.730345	21.783112	6.304282	0.9958053
4/30/2009 14:50	4207	2.730661	21.781158	6.305013	0.9959208
4/30/2009 14:50	4208	2.731697	21.778778	6.307404	0.9962984
4/30/2009 14:50	4209	2.730209	21.781158	6.303969	0.9957559
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4/30/2009 14:50	4211	2.730555	21.782654	6.304766	0.9958817
4/30/2009 14:50	4212	2.728039	21.783112	6.298957	0.9949642
4/30/2009 14:50	4213	2.730827	21.781158	6.305396	0.9959813
4/30/2009 14:50	4214	2.731426	21.782166	6.306778	0.9961996
4/30/2009 14:50	4215	2.730749	21.780212	6.305215	0.9959527

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4/30/2009 14:50	4217	2.731859	21.780212	6.307778	0.9963575
4/30/2009 14:50	4218	2.730125	21.780212	6.303775	0.9957252
4/30/2009 14:50	4219	2.729778	21.781677	6.302974	0.9955987
4/30/2009 14:50	4220	2.729961	21.78363	6.303397	0.9956655
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4/30/2009 14:50	4222	2.730482	21.781677	6.304599	0.9958554
4/30/2009 14:50	4223	2.729401	21.779724	6.302101	0.9954608
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4/30/2009 14:50	4225	2.729883	21.782166	6.303216	0.9956369
4/30/2009 14:50	4226	2.730661	21.782166	6.305013	0.9959208
4/30/2009 14:50	4227	2.730263	21.781158	6.304092	0.9957753
4/30/2009 14:50	4228	2.731079	21.780731	6.305977	0.996073
4/30/2009 14:50	4229	2.731476	21.782654	6.306893	0.9962177
4/30/2009 14:50	4230	2.729258	21.782166	6.301771	0.9954087
4/30/2009 14:50	4231	2.729635	21.782166	6.302643	0.9955464
4/30/2009 14:50	4232	2.730555	21.782166	6.304766	0.9958817
4/30/2009 14:50	4233	2.731588	21.780212	6.307153	0.9962588
4/30/2009 14:50	4234	2.730827	21.781158	6.305396	0.9959813
4/30/2009 14:50	4235	2.731264	21.782166	6.306404	0.9961405
4/30/2009 14:50	4236	2.731476	21.781677	6.306893	0.9962177
4/30/2009 14:50	4237	2.730324	21.780212	6.304233	0.9957976
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4/30/2009 14:50	4257	2.730324	21.781677	6.304233	0.9957976
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4/30/2009 14:50	4259	2.728094	21.781677	6.299085	0.9949844
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4/30/2009 14:51	4264	2.732025	21.781158	6.308161	0.996418
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4/30/2009 14:51	4276	2.731968	21.782654	6.308029	0.9963972
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4/30/2009 14:51	4281	2.730577	21.782166	6.304819	0.9958901
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4/30/2009 14:51	4306	2.731211	21.780212	6.306281	0.9961211
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4/30/2009 14:51	4310	2.730536	21.778778	6.304722	0.9958748
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4/30/2009 14:52	4340	2.730402	21.780731	6.304413	0.995826
4/30/2009 14:52	4341	2.730324	21.780212	6.304233	0.9957976
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4/30/2009 14:52	4354	2.73229	21.780212	6.308774	0.9965148
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4/30/2009 14:52	4377	2.7313	21.777802	6.306488	0.9961537

4/30/2009 14:52	4378	2.7313	21.782166	6.306488	0.9961537
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4/30/2009 14:53	4402	2.731211	21.779266	6.306281	0.9961211
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4/30/2009 14:53	4408	2.730183	21.778778	6.303907	0.9957461
4/30/2009 14:53	4409	2.730536	21.778778	6.304722	0.9958748
4/30/2009 14:53	4410	2.730371	21.778778	6.304343	0.9958149
4/30/2009 14:53	4411	2.72999	21.780212	6.303463	0.9956759
4/30/2009 14:53	4412	2.731619	21.778259	6.307223	0.9962698
4/30/2009 14:53	4413	2.730158	21.779266	6.30385	0.9957371
4/30/2009 14:53	4414	2.730064	21.780212	6.303634	0.9957029
4/30/2009 14:53	4415	2.731131	21.780212	6.306096	0.9960918
4/30/2009 14:53	4416	2.731802	21.781158	6.307646	0.9963367
4/30/2009 14:53	4417	2.731319	21.777802	6.306532	0.9961607
4/30/2009 14:53	4418	2.730827	21.782166	6.305396	0.9959813
4/30/2009 14:53	4419	2.730324	21.780731	6.304233	0.9957976
4/30/2009 14:53	4420	2.730661	21.779724	6.305013	0.9959208
4/30/2009 14:53	4421	2.730911	21.779724	6.30559	0.9960119
4/30/2009 14:53	4422	2.731211	21.778778	6.306281	0.9961211
4/30/2009 14:53	4423	2.729147	21.780212	6.301516	0.9953684
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4/30/2009 14:53	4425	2.729557	21.781677	6.302463	0.995518
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4/30/2009 14:54	4448	2.729717	21.781677	6.302833	0.9955764
4/30/2009 14:54	4449	2.730038	21.780212	6.303573	0.9956933
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4/30/2009 14:54	4464	2.730722	21.778778	6.305153	0.9959429
4/30/2009 14:54	4465	2.729401	21.780212	6.302101	0.9954608
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4/30/2009 14:54	4475	2.729067	21.781677	6.301331	0.9953392
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4/30/2009 14:54	4481	2.729235	21.777802	6.301718	0.9954003
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4/30/2009 14:57	4636	2.732531	21.781158	6.309329	0.9966025
4/30/2009 14:57	4637	2.731501	21.785065	6.306951	0.9962269
4/30/2009 14:57	4638	2.733238	21.781158	6.310963	0.9968606
4/30/2009 14:57	4639	2.731527	21.78363	6.307012	0.9962365
4/30/2009 14:57	4640	2.730497	21.780212	6.304634	0.9958609
4/30/2009 14:57	4641	2.729523	21.785522	6.302383	0.9955053
4/30/2009 14:57	4642	2.729902	21.78363	6.30326	0.9956439
4/30/2009 14:57	4643	2.730345	21.785065	6.304282	0.9958053
4/30/2009 14:57	4644	2.730722	21.782654	6.305153	0.9959429
4/30/2009 14:57	4645	2.730881	21.781677	6.305519	0.9960007
4/30/2009 14:57	4646	2.729692	21.781677	6.302775	0.9955673
4/30/2009 14:57	4647	2.731041	21.785065	6.305889	0.9960591

4/30/2009 14:57	4648	2.730158	21.782654	6.30385	0.9957371
4/30/2009 14:57	4649	2.731153	21.784088	6.306149	0.9961002
4/30/2009 14:57	4650	2.730448	21.782654	6.304519	0.9958427
4/30/2009 14:57	4651	2.730881	21.782654	6.305519	0.9960007
4/30/2009 14:57	4652	2.72999	21.783112	6.303463	0.9956759
4/30/2009 14:57	4653	2.730402	21.784088	6.304413	0.995826
4/30/2009 14:57	4654	2.731588	21.782654	6.307153	0.9962588
4/30/2009 14:57	4655	2.730555	21.785522	6.304766	0.9958817
4/30/2009 14:57	4656	2.731041	21.78363	6.305889	0.9960591
4/30/2009 14:57	4657	2.731041	21.784088	6.305889	0.9960591
4/30/2009 14:57	4658	2.729961	21.784088	6.303397	0.9956655
4/30/2009 14:57	4659	2.730774	21.784088	6.305272	0.9959617
4/30/2009 14:57	4660	2.729187	21.78363	6.301608	0.9953829
4/30/2009 14:57	4661	2.730968	21.780212	6.305722	0.9960328
4/30/2009 14:57	4662	2.733566	21.779724	6.31172	0.9969802
4/30/2009 14:57	4663	2.731131	21.804443	6.306096	0.9960918
4/30/2009 14:57	4664	2.730125	21.796173	6.303775	0.9957252
4/30/2009 14:57	4665	2.729849	21.790375	6.303136	0.9956243
4/30/2009 14:57	4666	2.730661	21.78891	6.305013	0.9959208
4/30/2009 14:57	4667	2.731319	21.786957	6.306532	0.9961607
4/30/2009 14:57	4668	2.731859	21.782166	6.307778	0.9963575
4/30/2009 14:57	4669	2.732531	21.786011	6.309329	0.9966025
4/30/2009 14:57	4670	2.733292	21.786011	6.311086	0.99688
4/30/2009 14:57	4671.007	2.73172	21.784576	6.307456	0.9963067
4/30/2009 14:57	4672	2.731178	21.787933	6.306206	0.9961092
4/30/2009 14:57	4673	2.729357	21.786011	6.302001	0.995445
4/30/2009 14:57	4674.14	2.732584	21.783112	6.309452	0.9966219
4/30/2009 14:57	4675	2.732471	21.786499	6.309192	0.9965809
4/30/2009 14:57	4676	2.732046	21.783112	6.30821	0.9964257
4/30/2009 14:57	4677	2.731441	21.782654	6.306814	0.9962052
4/30/2009 14:57	4678	2.734217	21.787476	6.313221	0.9972173
4/30/2009 14:57	4679.053	2.731295	21.796173	6.306475	0.9961517
4/30/2009 14:58	4680	2.73275	21.789856	6.309835	0.9966824
4/30/2009 14:58	4681	2.732531	21.789856	6.309329	0.9966025
4/30/2009 14:58	4682	2.73465	21.786011	6.314221	0.9973752
4/30/2009 14:58	4683.054	2.731392	21.798126	6.306699	0.9961871
4/30/2009 14:58	4684	2.729961	21.792328	6.303397	0.9956655
4/30/2009 14:58	4685	2.732101	21.787933	6.308337	0.9964458
4/30/2009 14:58	4686	2.730934	21.788422	6.305642	0.9960201
4/30/2009 14:58	4687.072	2.731131	21.786011	6.306096	0.9960918
4/30/2009 14:58	4688	2.730694	21.786011	6.305087	0.9959325
4/30/2009 14:58	4689	2.732101	21.788422	6.308337	0.9964458
4/30/2009 14:58	4690	2.731985	21.783112	6.308069	0.9964035
4/30/2009 14:58	4691.01	2.730064	21.789429	6.303634	0.9957029
4/30/2009 14:58	4692	2.729692	21.786957	6.302775	0.9955673
4/30/2009 14:58	4693	2.731153	21.788422	6.306149	0.9961002
4/30/2009 14:58	4694	2.732862	21.786499	6.310095	0.9967235
4/30/2009 14:58	4695	2.730345	21.786499	6.304282	0.9958053
4/30/2009 14:58	4696	2.729876	21.762299	6.303198	0.9956341
4/30/2009 14:58	4697	2.731668	21.78363	6.307338	0.996288
4/30/2009 14:58	4698	2.728981	21.786011	6.301133	0.9953079
4/30/2009 14:58	4699	2.730774	21.785522	6.305272	0.9959617
4/30/2009 14:58	4700	2.730009	21.787476	6.303506	0.9956827
4/30/2009 14:58	4701	2.731636	21.786957	6.307263	0.9962762

4/30/2009 14:58	4702.044	2.732025	21.786957	6.308161	0.996418
4/30/2009 14:58	4703	2.72942	21.787476	6.302145	0.9954677
4/30/2009 14:58	4704	2.729258	21.786957	6.301771	0.9954087
4/30/2009 14:58	4705.003	2.732025	21.787933	6.308161	0.996418
4/30/2009 14:58	4706	2.731668	21.790375	6.307338	0.996288
4/30/2009 14:58	4707	2.731766	21.786011	6.307562	0.9963234
4/30/2009 14:58	4708	2.730555	21.786011	6.304766	0.9958817
4/30/2009 14:58	4709	2.731916	21.787476	6.30791	0.9963784
4/30/2009 14:58	4710	2.741846	21.787476	6.330838	1
4/30/2009 14:58	4711	2.732101	21.789429	6.308337	0.9964458
4/30/2009 14:58	4712	2.730009	21.788422	6.303506	0.9956827
4/30/2009 14:58	4713	2.732128	21.789856	6.308399	0.9964556
4/30/2009 14:58	4714	2.730614	21.788422	6.304903	0.9959034
4/30/2009 14:58	4715	2.731153	21.790375	6.306149	0.9961002
4/30/2009 14:58	4716	2.730986	21.789856	6.305761	0.9960389
4/30/2009 14:58	4717	2.730661	21.789856	6.305013	0.9959208
4/30/2009 14:58	4718.001	2.731153	21.790863	6.306149	0.9961002
4/30/2009 14:58	4719.006	2.731426	21.790375	6.306778	0.9961996
				6.330838	1

Report Date:	5/4/2009 10:50
Report User Name:	bengard
Report Computer Nam	CA3L-BENGARD2

Log File Properties

File Name	HVW-5 ST HVW-8 2009-04-30 14.51.01.wsl
Create Date	4/30/2009 14:50

Device Properties

Device	Level TROLL® 700
Site	TSA
Device Name	
Serial Number	135024
Firmware Version	2.07
Hardware Version	3

Log Configuration

Log Name	HVW-5 ST HVW-8
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Version	5.5.7.0
Create Date	4/30/2009 13:38
Notes Size(bytes)	4096
Type	Fast Linear
Overwrite when full	Disabled
Scheduled Start Time	4/30/2009 13:40
Scheduled Stop Time	No Stop Time
Interval	Days: 0 hrs: 00 mins: 00 secs: 01

Level Reference Settings At Log Creation

Level Measureme	Depth
Specific Gravit	0.999

Log Notes:

Date and Time	Note
4/30/2009 14:49	Log Download - Used Battery: 3% Used Memory: 14% Name: Unknow

Log Data:

Record Count 4188

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 135024 Pressure (PSI)	Sensor: Pres 69ft SN#: 135024 Temperature (C)
4/30/2009 13:40	0	0.805285	29.970947
4/30/2009 13:40	1	0.80575	29.934174
4/30/2009 13:40	2	0.80599	29.89093
4/30/2009 13:40	3	0.805067	29.849213
4/30/2009 13:40	4	0.802906	29.808472

4/30/2009 13:40	5	0.804543	29.764771
4/30/2009 13:40	6	0.804829	29.721039
4/30/2009 13:40	7	0.805322	29.680359
4/30/2009 13:40	8	0.805046	29.638184
4/30/2009 13:40	9	0.805422	29.593964
4/30/2009 13:40	10	0.805494	29.554779
4/30/2009 13:40	11	0.805395	29.508087
4/30/2009 13:40	12	0.804174	29.468903
4/30/2009 13:40	13	0.80413	29.425751
4/30/2009 13:40	14	0.804741	29.386017
4/30/2009 13:40	15	0.803676	29.342377
4/30/2009 13:40	16	0.804367	29.304169
4/30/2009 13:40	17	0.803359	29.262085
4/30/2009 13:40	18	0.804148	29.220886
4/30/2009 13:40	19	0.803327	29.18222
4/30/2009 13:40	20	0.804172	29.140137
4/30/2009 13:40	21	0.804966	29.098938
4/30/2009 13:40	22	0.803203	29.062286
4/30/2009 13:40	23	0.803153	29.02066
4/30/2009 13:40	24	0.803131	28.980988
4/30/2009 13:40	25	0.802264	28.937927
4/30/2009 13:40	26	0.804122	28.899231
4/30/2009 13:40	27	0.803583	28.864624
4/30/2009 13:40	28	0.803718	28.823944
4/30/2009 13:40	29	0.802811	28.784851
4/30/2009 13:40	30	0.802764	28.747711
4/30/2009 13:40	31	0.803302	28.708588
4/30/2009 13:40	32	0.803155	28.670471
4/30/2009 13:40	33	0.80219	28.635345
4/30/2009 13:40	34	0.803227	28.592316
4/30/2009 13:40	35	0.801296	28.555695
4/30/2009 13:40	36	0.800589	28.52005
4/30/2009 13:40	37	0.80182	28.485413
4/30/2009 13:40	38	0.801968	28.447815
4/30/2009 13:40	39	0.802024	28.411224
4/30/2009 13:40	40	0.802217	28.37561
4/30/2009 13:40	41	0.80177	28.336029
4/30/2009 13:40	42	0.802294	28.299927
4/30/2009 13:40	43	0.801847	28.264343
4/30/2009 13:40	44	0.802245	28.230743
4/30/2009 13:40	45	0.801703	28.194122
4/30/2009 13:40	46	0.801703	28.158569
4/30/2009 13:40	47	0.801502	28.122009
4/30/2009 13:40	48	0.802539	28.090363
4/30/2009 13:40	49	0.800393	28.058258
4/30/2009 13:40	50	0.800887	28.018219
4/30/2009 13:40	51	0.800636	27.984619
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4/30/2009 13:40	53	0.800737	27.918457
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4/30/2009 13:40	55	0.801034	27.849335
4/30/2009 13:40	56	0.799781	27.818207
4/30/2009 13:40	57	0.80047	27.784637
4/30/2009 13:40	58	0.801503	27.751556

4/30/2009 13:40	59	0.800418	27.719452
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4/30/2009 13:41	75	0.799606	27.21933
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4/30/2009 13:41	79	0.800894	27.102539
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4/30/2009 13:41	82	0.79872	27.013885
4/30/2009 13:41	83	0.800441	26.983307
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4/30/2009 13:41	89	0.798054	26.819824
4/30/2009 13:41	90	0.800073	26.790283
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4/30/2009 13:43	202	0.795872	24.543243
4/30/2009 13:43	203	0.795377	24.532013
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4/30/2009 14:45	3944	0.803127	21.554413
4/30/2009 14:45	3945	0.801874	21.553925
4/30/2009 14:45	3946	0.802413	21.554901

4/30/2009 14:45	3947	0.802315	21.553436
4/30/2009 14:45	3948	0.802579	21.554901
4/30/2009 14:45	3949	0.801787	21.555389
4/30/2009 14:45	3950	0.801775	21.555878
4/30/2009 14:45	3951	0.801521	21.554413
4/30/2009 14:45	3952	0.801227	21.555389
4/30/2009 14:45	3953	0.802429	21.553436
4/30/2009 14:45	3954	0.800011	21.553436
4/30/2009 14:45	3955	0.800688	21.556366
4/30/2009 14:45	3956	0.803217	21.554901
4/30/2009 14:45	3957	0.799998	21.553436
4/30/2009 14:45	3958	0.801894	21.554413
4/30/2009 14:45	3959	0.799752	21.553436
4/30/2009 14:46	3960	0.800996	21.55246
4/30/2009 14:46	3961	0.800953	21.556366
4/30/2009 14:46	3962	0.802035	21.554413
4/30/2009 14:46	3963	0.800905	21.553436
4/30/2009 14:46	3964	0.80209	21.55246
4/30/2009 14:46	3965	0.80118	21.55246
4/30/2009 14:46	3966	0.802131	21.551514
4/30/2009 14:46	3967	0.801787	21.553925
4/30/2009 14:46	3968	0.801493	21.554413
4/30/2009 14:46	3969	0.801395	21.553925
4/30/2009 14:46	3970	0.801987	21.553436
4/30/2009 14:46	3971	0.800885	21.553925
4/30/2009 14:46	3972	0.802823	21.555878
4/30/2009 14:46	3973	0.800532	21.55246
4/30/2009 14:46	3974	0.800653	21.554901
4/30/2009 14:46	3975	0.800853	21.555389
4/30/2009 14:46	3976	0.800551	21.554901
4/30/2009 14:46	3977	0.800286	21.554413
4/30/2009 14:46	3978	0.802189	21.554413
4/30/2009 14:46	3979	0.801349	21.553436
4/30/2009 14:46	3980	0.803069	21.554413
4/30/2009 14:46	3981	0.80046	21.554413
4/30/2009 14:46	3982	0.80228	21.553436
4/30/2009 14:46	3983	0.801448	21.553436
4/30/2009 14:46	3984	0.800853	21.553436
4/30/2009 14:46	3985	0.80118	21.553925
4/30/2009 14:46	3986	0.801395	21.554901
4/30/2009 14:46	3987	0.800953	21.554413
4/30/2009 14:46	3988	0.80228	21.555878
4/30/2009 14:46	3989	0.801741	21.553436
4/30/2009 14:46	3990	0.801151	21.551025
4/30/2009 14:46	3991	0.80084	21.555389
4/30/2009 14:46	3992	0.801894	21.553436
4/30/2009 14:46	3993	0.80228	21.550537
4/30/2009 14:46	3994	0.80228	21.551971
4/30/2009 14:46	3995	0.801545	21.555389
4/30/2009 14:46	3996	0.802678	21.555878
4/30/2009 14:46	3997	0.801941	21.551971
4/30/2009 14:46	3998	0.801448	21.55246
4/30/2009 14:46	3999	0.801349	21.553925
4/30/2009 14:46	4000	0.800653	21.553436

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4/30/2009 14:46	4002	0.800688	21.554901
4/30/2009 14:46	4003	0.800853	21.551971
4/30/2009 14:46	4004	0.801151	21.552948
4/30/2009 14:46	4005	0.79972	21.554413
4/30/2009 14:46	4006	0.80118	21.555389
4/30/2009 14:46	4007	0.800162	21.554413
4/30/2009 14:46	4008	0.798963	21.551971
4/30/2009 14:46	4009	0.800688	21.555878
4/30/2009 14:46	4010	0.801349	21.554901
4/30/2009 14:46	4011	0.800806	21.554901
4/30/2009 14:46	4012	0.801375	21.550049
4/30/2009 14:46	4013	0.800806	21.554413
4/30/2009 14:46	4014	0.8013	21.551971
4/30/2009 14:46	4015	0.800688	21.553436
4/30/2009 14:46	4016	0.801894	21.553436
4/30/2009 14:46	4017	0.801987	21.551514
4/30/2009 14:46	4018	0.801448	21.553925
4/30/2009 14:46	4019	0.799569	21.553925
4/30/2009 14:47	4020	0.801227	21.552948
4/30/2009 14:47	4021	0.801641	21.555878
4/30/2009 14:47	4022	0.799947	21.554413
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4/30/2009 14:47	4024	0.799616	21.551025
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4/30/2009 14:47	4028	0.799998	21.550537
4/30/2009 14:47	4029	0.8013	21.553436
4/30/2009 14:47	4030	0.801448	21.551025
4/30/2009 14:47	4031	0.802236	21.552948
4/30/2009 14:47	4032	0.801741	21.550049
4/30/2009 14:47	4033	0.800701	21.552948
4/30/2009 14:47	4034	0.801493	21.554413
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4/30/2009 14:47	4036	0.801961	21.555878
4/30/2009 14:47	4037	0.801987	21.553436
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4/30/2009 14:47	4039	0.801692	21.553436
4/30/2009 14:47	4040	0.801741	21.554901
4/30/2009 14:47	4041	0.802118	21.553925
4/30/2009 14:47	4042	0.803806	21.554413
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4/30/2009 14:47	4044	0.803274	21.555389
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4/30/2009 14:47	4049	0.80315	21.55246
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4/30/2009 14:47	4051	0.802118	21.553436
4/30/2009 14:47	4052	0.802131	21.551971
4/30/2009 14:47	4053	0.802035	21.554901
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4/30/2009 14:47	4056	0.80238	21.553925
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4/30/2009 14:47	4058	0.802678	21.551025
4/30/2009 14:47	4059	0.800741	21.554413
4/30/2009 14:47	4060	0.80228	21.551971
4/30/2009 14:47	4061	0.801894	21.55246
4/30/2009 14:47	4062	0.801349	21.555389
4/30/2009 14:47	4063	0.800146	21.554901
4/30/2009 14:47	4064	0.801641	21.550537
4/30/2009 14:47	4065	0.800741	21.55246
4/30/2009 14:47	4066	0.801641	21.554901
4/30/2009 14:47	4067	0.800408	21.552948
4/30/2009 14:47	4068	0.80026	21.552948
4/30/2009 14:47	4069	0.801787	21.549072
4/30/2009 14:47	4070	0.800853	21.551514
4/30/2009 14:47	4071	0.800853	21.554901
4/30/2009 14:47	4072	0.800784	21.554413
4/30/2009 14:47	4073	0.799971	21.555389
4/30/2009 14:47	4074	0.800953	21.551971
4/30/2009 14:47	4075	0.801724	21.55246
4/30/2009 14:47	4076	0.80075	21.553925
4/30/2009 14:47	4077	0.803127	21.556366
4/30/2009 14:47	4078	0.80075	21.555389
4/30/2009 14:47	4079	0.803318	21.55246
4/30/2009 14:48	4080	0.804873	21.553436
4/30/2009 14:48	4081	0.8047	21.554901
4/30/2009 14:48	4082	0.803055	21.553436
4/30/2009 14:48	4083	0.784617	21.551514
4/30/2009 14:48	4084	0.783599	21.554901
4/30/2009 14:48	4085	0.787203	21.551514
4/30/2009 14:48	4086	0.792966	21.55246
4/30/2009 14:48	4087	0.794643	21.55246
4/30/2009 14:48	4088	0.79893	21.554413
4/30/2009 14:48	4089	0.79913	21.55246
4/30/2009 14:48	4090.49	0.799911	21.567017
4/30/2009 14:48	4091.252	0.79908	21.580078
4/30/2009 14:48	4092	0.800578	21.571381
4/30/2009 14:48	4093	0.800311	21.562622
4/30/2009 14:48	4094	0.800701	21.559265
4/30/2009 14:48	4095	0.802131	21.559265
4/30/2009 14:48	4096	0.801941	21.558746
4/30/2009 14:48	4097	0.800653	21.5578
4/30/2009 14:48	4098	0.802236	21.5578
4/30/2009 14:48	4099	0.79972	21.5578
4/30/2009 14:48	4100	0.801692	21.555878
4/30/2009 14:48	4101	0.803274	21.556366
4/30/2009 14:48	4102.273	0.80238	21.571381
4/30/2009 14:48	4103.009	0.802155	21.56604
4/30/2009 14:48	4104	0.800806	21.56073
4/30/2009 14:48	4105	0.801692	21.561188
4/30/2009 14:48	4106	0.801349	21.556854
4/30/2009 14:48	4107	0.800065	21.559265
4/30/2009 14:48	4108	0.801395	21.554413

4/30/2009 14:48	4109	0.801836	21.559265
4/30/2009 14:48	4110	0.800311	21.557312
4/30/2009 14:48	4111	0.80238	21.559265
4/30/2009 14:48	4112	0.802155	21.558289
4/30/2009 14:48	4113	0.803096	21.559265
4/30/2009 14:48	4114.002	0.801245	21.557312
4/30/2009 14:48	4115	0.802204	21.558746
4/30/2009 14:48	4116	0.801054	21.553925
4/30/2009 14:48	4117	0.801095	21.5578
4/30/2009 14:48	4118	0.80026	21.558746
4/30/2009 14:48	4119	0.801545	21.558289
4/30/2009 14:48	4120	0.802776	21.555878
4/30/2009 14:48	4121	0.80228	21.555389
4/30/2009 14:48	4122	0.801741	21.555878
4/30/2009 14:48	4123	0.800311	21.557312
4/30/2009 14:48	4124	0.801692	21.555878
4/30/2009 14:48	4125	0.800996	21.556366
4/30/2009 14:48	4126.09	0.8027	21.553436
4/30/2009 14:48	4127	0.802651	21.557312
4/30/2009 14:48	4128	0.802131	21.553436
4/30/2009 14:48	4129	0.802534	21.555878
4/30/2009 14:48	4130	0.802487	21.557312
4/30/2009 14:48	4131	0.802336	21.556854
4/30/2009 14:48	4132	0.802355	21.554901
4/30/2009 14:48	4133	0.802336	21.559265
4/30/2009 14:48	4134	0.80181	21.553925
4/30/2009 14:48	4135	0.80304	21.558746
4/30/2009 14:48	4136	0.803584	21.555878
4/30/2009 14:48	4137	0.803437	21.556854
4/30/2009 14:48	4138	0.8023	21.60144
4/30/2009 14:48	4139	0.801069	21.568451
4/30/2009 14:49	4140	0.802597	21.564606
4/30/2009 14:49	4141	0.802035	21.561188
4/30/2009 14:49	4142	0.800408	21.558289
4/30/2009 14:49	4143.126	0.80156	21.555878
4/30/2009 14:49	4144	0.801317	21.560242
4/30/2009 14:49	4145	0.80304	21.558746
4/30/2009 14:49	4146	0.801787	21.558289
4/30/2009 14:49	4147.133	0.802805	21.558746
4/30/2009 14:49	4148	0.8023	21.559753
4/30/2009 14:49	4149	0.801857	21.558289
4/30/2009 14:49	4150	0.80046	21.556366
4/30/2009 14:49	4151.136	0.802549	21.557312
4/30/2009 14:49	4152	0.80181	21.558289
4/30/2009 14:49	4153	0.802006	21.559753
4/30/2009 14:49	4154	0.802251	21.560242
4/30/2009 14:49	4155	0.802429	21.560242
4/30/2009 14:49	4156	0.802131	21.561188
4/30/2009 14:49	4157	0.801448	21.561188
4/30/2009 14:49	4158	0.802189	21.562195
4/30/2009 14:49	4159	0.800806	21.560242
4/30/2009 14:49	4160	0.801787	21.559753
4/30/2009 14:49	4161	0.801741	21.559265
4/30/2009 14:49	4162	0.80238	21.562622

4/30/2009 14:49	4163	0.801894	21.559753
4/30/2009 14:49	4164	0.803318	21.561707
4/30/2009 14:49	4165	0.801894	21.562622
4/30/2009 14:49	4166	0.802844	21.56073
4/30/2009 14:49	4167	0.801641	21.561707
4/30/2009 14:49	4168	0.80228	21.5578
4/30/2009 14:49	4169	0.80238	21.560242
4/30/2009 14:49	4170	0.808025	21.561707
4/30/2009 14:49	4171	0.803286	21.562622
4/30/2009 14:49	4172	0.804077	21.562195
4/30/2009 14:49	4173	0.802189	21.562195
4/30/2009 14:49	4174	0.802236	21.560242
4/30/2009 14:49	4175	0.801641	21.561188
4/30/2009 14:49	4176	0.803861	21.563599
4/30/2009 14:49	4177	0.802534	21.565552
4/30/2009 14:49	4178	0.80336	21.562195
4/30/2009 14:49	4179	0.801874	21.564606
4/30/2009 14:49	4180	0.803463	21.564117
4/30/2009 14:49	4181	0.80376	21.562195
4/30/2009 14:49	4182	0.803217	21.562622
4/30/2009 14:49	4183	0.801349	21.564117
4/30/2009 14:49	4184	0.81106	21.564117
4/30/2009 14:49	4185	0.80304	21.562622
4/30/2009 14:49	4186	0.803806	21.565552
4/30/2009 14:49	4187.001	0.802924	21.565063

n

Sensor: Pres 69ft
SN#: 135024

Depth (ft)	Normalized
1.859377	0.992879311
1.860452	0.993453345
1.861006	0.993749172
1.858875	0.99261125
1.853885	0.989946666

1.857664	0.991964595
1.858324	0.992317025
1.859463	0.992925234
1.858826	0.992585085
1.859694	0.993048584
1.859861	0.99313776
1.859632	0.993015477
1.856814	0.991510707
1.856711	0.991455707
1.858122	0.99220916
1.855662	0.990895557
1.857259	0.991748331
1.854931	0.990505214
1.856752	0.9914776
1.854856	0.990465165
1.856807	0.99150697
1.858641	0.992486298
1.85457	0.990312445
1.854455	0.990251037
1.854405	0.990224338
1.852403	0.9891553
1.856693	0.991446095
1.855449	0.990781818
1.855759	0.990947353
1.853665	0.989829189
1.853557	0.989771519
1.854799	0.990434728
1.85446	0.990253707
1.852232	0.989063988
1.854627	0.990342882
1.850168	0.987961844
1.848534	0.987089312
1.851377	0.988607431
1.851718	0.98878952
1.851848	0.988858938
1.852293	0.989096562
1.851263	0.988546557
1.852471	0.989191611
1.851441	0.988641606
1.852359	0.989131805
1.851109	0.988464323
1.851109	0.988464323
1.850644	0.98821602
1.853037	0.989493846
1.848083	0.986848485
1.849224	0.987457762
1.848644	0.987148051
1.848308	0.986968632
1.848878	0.987273003
1.847385	0.986475763
1.849563	0.987638783
1.846669	0.98609343
1.848261	0.986943534
1.850646	0.988217088

1.84814	0.986878922
1.848616	0.987133099
1.845751	0.985603232
1.848836	0.987250576
1.847808	0.986701639
1.848261	0.986943534
1.849272	0.987483393
1.848019	0.98681431
1.848261	0.986943534
1.84975	0.987738638
1.848953	0.987313052
1.848193	0.986907223
1.849906	0.98782194
1.847872	0.986735814
1.845705	0.985578669
1.847526	0.986551055
1.846266	0.985878234
1.847629	0.986606056
1.846841	0.986185276
1.849356	0.987528248
1.849239	0.987465772
1.846042	0.985758622
1.844769	0.985078859
1.844221	0.984786235
1.848193	0.986907223
1.843976	0.984655409
1.848091	0.986852757
1.84188	0.983536176
1.843599	0.984454097
1.843945	0.984638855
1.842681	0.983963898
1.847343	0.986453336
1.847253	0.986405277
1.844729	0.985057499
1.843139	0.984208463
1.845295	0.985359735
1.840171	0.982623596
1.846334	0.985914545
1.84199	0.983594915
1.843599	0.984454097
1.844855	0.985124782
1.847343	0.986453336
1.843833	0.984579049
1.844157	0.98475206
1.843483	0.984392154
1.847253	0.986405277
1.845145	0.985279637
1.845024	0.985215025
1.843553	0.984429533
1.844571	0.98497313
1.844106	0.984724827
1.843139	0.984208463
1.84182	0.983504137
1.845597	0.985520998

1.84182	0.983504137
1.841961	0.983579429
1.840592	0.982848404
1.842756	0.984003947
1.843212	0.984247444
1.844218	0.984784633
1.84173	0.983456079
1.842303	0.983762052
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1.84182	0.983504137
1.842171	0.983691566
1.843324	0.984307251
1.841151	0.983146901
1.840693	0.982902336
1.842523	0.983879529
1.841605	0.983389331
1.842303	0.983762052
1.840479	0.982788064
1.841034	0.983084425
1.839555	0.982294661
1.842171	0.983691566
1.84345	0.984374533
1.843212	0.984247444
1.839052	0.982026067
1.839667	0.982354468
1.842523	0.983879529
1.842756	0.984003947
1.838938	0.981965193
1.841259	0.983204572
1.839892	0.982474614
1.839735	0.982390779
1.839402	0.982212962
1.838147	0.981542811
1.841003	0.983067872
1.841384	0.98327132
1.838826	0.981905386
1.839614	0.982326167
1.837912	0.981417324
1.839402	0.982212962
1.839614	0.982326167
1.840532	0.982816365
1.841003	0.983067872
1.839735	0.982390779
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1.838242	0.981593539
1.838938	0.981965193
1.841444	0.983303359
1.839402	0.982212962
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1.840043	0.982555246
1.83981	0.982430828
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1.836963	0.980910572
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1.839125	0.982065048
1.838687	0.981831163
1.841974	0.983586371
1.838103	0.981519315

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1.847893	0.986747028
1.844813	0.985102354
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1.845951	0.985710029
1.846411	0.985955662
1.84755	0.986563871
1.845951	0.985710029
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1.844584	0.984980072
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1.845951	0.985710029
1.844938	0.985169102
1.844375	0.984868469
1.845951	0.985710029
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1.843692	0.984503757
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1.844137	0.98474138
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1.842551	0.98389448
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1.842318	0.983770062
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1.849475	0.987591792
1.848448	0.987043389
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1.847893	0.986747028
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1.847893	0.986747028
1.848907	0.987288489
1.848237	0.986930719
1.848118	0.986867174
1.848763	0.987211595
1.850743	0.988268885
1.847326	0.986444258
1.849144	0.987415043
1.848237	0.986930719
1.850289	0.988026456
1.846253	0.985871293
1.850851	0.988326555
1.848763	0.987211595
1.848572	0.987109604
1.848572	0.987109604
1.851302	0.988567382
1.849116	0.987400091
1.849446	0.987576306
1.849036	0.987357373
1.850289	0.988026456

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1.849609	0.987663346
1.849144	0.987415043
1.850289	0.988026456
1.848118	0.986867174
1.850049	0.987898299
1.850177	0.987966649
1.8472	0.986376976
1.845346	0.985386968
1.852784	0.989358748
1.848448	0.987043389
1.850851	0.988326555
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1.846068	0.985772505
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1.848907	0.987288489
1.846603	0.986058187
1.847326	0.986444258
1.850743	0.988268885
1.848572	0.987109604
1.847052	0.986297947
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1.846936	0.986236004
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1.848448	0.987043389
1.8472	0.986376976
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1.850743	0.988268885
1.847442	0.986506201
1.849219	0.987455092
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1.850743	0.988268885
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1.846367	0.985932167
1.846832	0.98618047
1.848356	0.986994263
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1.848118	0.986867174

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1.852	0.988940104
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1.851082	0.988449906
1.850851	0.988326555
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1.848682	0.987168342
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1.850622	0.988204273
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1.855964	0.99105682
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1.872712	1

Report Date:	5/4/2009 10:50
Report User Name:	bengard
Report Computer Name	CA3L-BENGARD2

Log File Properties

File Name	HMW-5 ST HMW-10 2009-04-30 14.56.04.wsl
Create Date	4/30/2009 14:56

Device Properties

Device	Level TROLL® 700
Site	TSA
Device Name	
Serial Number	124206
Firmware Version	2.07
Hardware Version	2

Log Configuration

Log Name	HMW-5 ST HMW-10
Created By	Unknown
Computer Name	Field PC
Application	WinSituMobile.exe
Application Version	5.5.7.0
Create Date	4/30/2009 13:27
Notes Size(bytes)	4096
Type	Fast Linear
Overwrite when full	Disabled
Scheduled Start Time	4/30/2009 13:40
Scheduled Stop Time	No Stop Time
Interval	Days: 0 hrs: 00 mins: 00 secs: 01

Level Reference Settings At Log Creation

Level Measuremen	Depth
Specific Gravity	0.999

Log Notes:

Date and Time	Note
4/30/2009 14:54	Suspend Command
4/30/2009 14:54	Log Download - Used Battery: 8% Used Memory: 15% Name: Unknown

Log Data:

Record Count 4479

Date and Time	Elapsed Time Seconds	Sensor: Pres 69ft SN#: 124206 Pressure (PSI)	Sensor: Pres 69 SN#: 124206 Temperature	Sensor: Pres 69ft SN#: 124206 Depth (ft)	Normalized
4/30/2009 13:40	0	1.351728	22.613129	3.121099	0.92823079
4/30/2009 13:40	1	1.349724	22.619446	3.11647	0.92685411
4/30/2009 13:40	2	1.351576	22.621368	3.120747	0.92812611
4/30/2009 13:40	3	1.350855	22.622894	3.119082	0.92763093

4/30/2009 13:40	4	1.351164	22.623383	3.119795	0.92784298
4/30/2009 13:40	5	1.350645	22.621887	3.118598	0.92748698
4/30/2009 13:40	6	1.351063	22.621887	3.119562	0.92777368
4/30/2009 13:40	7	1.351164	22.618469	3.119795	0.92784298
4/30/2009 13:40	8	1.351267	22.619934	3.120033	0.92791376
4/30/2009 13:40	9	1.350601	22.617035	3.118496	0.92745665
4/30/2009 13:40	10	1.350286	22.619934	3.117769	0.92724043
4/30/2009 13:40	11	1.348843	22.617035	3.114436	0.92624918
4/30/2009 13:40	12	1.3507	22.614594	3.118725	0.92752475
4/30/2009 13:40	13	1.350235	22.617523	3.117651	0.92720534
4/30/2009 13:40	14	1.350748	22.615051	3.118835	0.92755747
4/30/2009 13:40	15	1.350645	22.616547	3.118598	0.92748698
4/30/2009 13:40	16	1.350801	22.613586	3.118959	0.92759435
4/30/2009 13:40	17	1.350496	22.610199	3.118254	0.92738468
4/30/2009 13:40	18	1.348429	22.613129	3.11348	0.92596486
4/30/2009 13:40	19	1.350801	22.61261	3.118959	0.92759435
4/30/2009 13:40	20	1.350801	22.610199	3.118959	0.92759435
4/30/2009 13:40	21	1.350601	22.608765	3.118496	0.92745665
4/30/2009 13:40	22	1.347866	22.606781	3.112181	0.92557853
4/30/2009 13:40	23	1.350801	22.608765	3.118959	0.92759435
4/30/2009 13:40	24	1.351007	22.606262	3.119435	0.92773591
4/30/2009 13:40	25	1.349155	22.606781	3.115158	0.92646391
4/30/2009 13:40	26	1.348896	22.605804	3.114559	0.92628576
4/30/2009 13:40	27	1.350182	22.601929	3.117527	0.92716846
4/30/2009 13:40	28	1.348843	22.603363	3.114436	0.92624918
4/30/2009 13:40	29	1.350235	22.602417	3.117651	0.92720534
4/30/2009 13:40	30	1.349049	22.602417	3.114912	0.92639075
4/30/2009 13:40	31	1.349104	22.601929	3.115039	0.92642852
4/30/2009 13:40	32	1.350748	22.599915	3.118835	0.92755747
4/30/2009 13:40	33	1.349876	22.601929	3.116823	0.92695909
4/30/2009 13:40	34	1.350389	22.59848	3.118007	0.92731122
4/30/2009 13:40	35	1.349876	22.596069	3.116823	0.92695909
4/30/2009 13:40	36	1.349514	22.594086	3.115986	0.92671016
4/30/2009 13:40	37	1.348022	22.594574	3.112542	0.9256859
4/30/2009 13:40	38	1.350286	22.59021	3.117769	0.92724043
4/30/2009 13:40	39	1.350546	22.592651	3.118369	0.92741888
4/30/2009 13:40	40	1.349724	22.591156	3.11647	0.92685411
4/30/2009 13:40	41	1.350079	22.589722	3.11729	0.92709798
4/30/2009 13:40	42	1.349155	22.589722	3.115158	0.92646391
4/30/2009 13:40	43	1.350447	22.588745	3.11814	0.92735077
4/30/2009 13:40	44	1.350601	22.58728	3.118496	0.92745665
4/30/2009 13:40	45	1.349356	22.589722	3.11562	0.92660131
4/30/2009 13:40	46	1.350079	22.586792	3.11729	0.92709798
4/30/2009 13:40	47	1.349466	22.586792	3.115876	0.92667745
4/30/2009 13:40	48	1.347919	22.581909	3.112304	0.92561512
4/30/2009 13:40	49	1.349356	22.583374	3.11562	0.92660131
4/30/2009 13:40	50	1.349876	22.582397	3.116823	0.92695909
4/30/2009 13:40	51	1.350182	22.582397	3.117527	0.92716846
4/30/2009 13:40	52	1.349417	22.581421	3.115762	0.92664354
4/30/2009 13:40	53	1.349724	22.579468	3.11647	0.92685411
4/30/2009 13:40	54	1.349514	22.578949	3.115986	0.92671016
4/30/2009 13:40	55	1.349876	22.575104	3.116823	0.92695909
4/30/2009 13:40	56	1.349049	22.574127	3.114912	0.92639075
4/30/2009 13:40	57	1.348896	22.573639	3.114559	0.92628576

4/30/2009 13:40	58	1.349564	22.575562	3.116101	0.92674436
4/30/2009 13:40	59	1.349724	22.57312	3.11647	0.92685411
4/30/2009 13:41	60	1.349564	22.572632	3.116101	0.92674436
4/30/2009 13:41	61	1.347464	22.574127	3.111252	0.92530225
4/30/2009 13:41	62	1.348747	22.568756	3.114216	0.92618375
4/30/2009 13:41	63	1.348429	22.568756	3.11348	0.92596486
4/30/2009 13:41	64	1.349356	22.57019	3.11562	0.92660131
4/30/2009 13:41	65	1.35034	22.568756	3.117893	0.92727731
4/30/2009 13:41	66	1.349625	22.56778	3.116241	0.926786
4/30/2009 13:41	67	1.349823	22.563354	3.116699	0.92692221
4/30/2009 13:41	68	1.349625	22.566772	3.116241	0.926786
4/30/2009 13:41	69	1.348799	22.56192	3.114335	0.92621915
4/30/2009 13:41	70	1.349155	22.560455	3.115158	0.92646391
4/30/2009 13:41	71	1.349049	22.562408	3.114912	0.92639075
4/30/2009 13:41	72	1.348747	22.560455	3.114216	0.92618375
4/30/2009 13:41	73	1.34931	22.55899	3.115515	0.92657008
4/30/2009 13:41	74	1.34823	22.559967	3.113022	0.92582865
4/30/2009 13:41	75	1.349258	22.557007	3.115396	0.92653469
4/30/2009 13:41	76	1.348486	22.557495	3.113612	0.92600412
4/30/2009 13:41	77	1.348429	22.55365	3.11348	0.92596486
4/30/2009 13:41	78	1.349625	22.555084	3.116241	0.926786
4/30/2009 13:41	79	1.348635	22.554596	3.113956	0.92610643
4/30/2009 13:41	80	1.348896	22.554596	3.114559	0.92628576
4/30/2009 13:41	81	1.349466	22.551178	3.115876	0.92667745
4/30/2009 13:41	82	1.34823	22.55069	3.113022	0.92582865
4/30/2009 13:41	83	1.348179	22.548737	3.112903	0.92579326
4/30/2009 13:41	84	1.349514	22.550232	3.115986	0.92671016
4/30/2009 13:41	85	1.348587	22.548248	3.113846	0.92607371
4/30/2009 13:41	86	1.349466	22.54776	3.115876	0.92667745
4/30/2009 13:41	87	1.348282	22.549225	3.113141	0.92586404
4/30/2009 13:41	88	1.348896	22.543884	3.114559	0.92628576
4/30/2009 13:41	89	1.348696	22.543365	3.114097	0.92614836
4/30/2009 13:41	90	1.346735	22.545349	3.109569	0.92480171
4/30/2009 13:41	91	1.348282	22.543884	3.113141	0.92586404
4/30/2009 13:41	92	1.349258	22.54483	3.115396	0.92653469
4/30/2009 13:41	93	1.348022	22.542389	3.112542	0.9256859
4/30/2009 13:41	94	1.348486	22.541901	3.113612	0.92600412
4/30/2009 13:41	95	1.348587	22.539978	3.113846	0.92607371
4/30/2009 13:41	96	1.348022	22.541443	3.112542	0.9256859
4/30/2009 13:41	97	1.348429	22.53653	3.11348	0.92596486
4/30/2009 13:41	98	1.348747	22.53949	3.114216	0.92618375
4/30/2009 13:41	99	1.347559	22.538025	3.111472	0.92536767
4/30/2009 13:41	100	1.348429	22.537048	3.11348	0.92596486
4/30/2009 13:41	101	1.34823	22.534607	3.113022	0.92582865
4/30/2009 13:41	102	1.348385	22.531708	3.113379	0.92593483
4/30/2009 13:41	103	1.347818	22.532654	3.112071	0.92554582
4/30/2009 13:41	104	1.349625	22.53363	3.116241	0.926786
4/30/2009 13:41	105	1.349155	22.534119	3.115158	0.92646391
4/30/2009 13:41	106	1.348385	22.528748	3.113379	0.92593483
4/30/2009 13:41	107	1.347967	22.531219	3.112414	0.92564783
4/30/2009 13:41	108	1.348179	22.532196	3.112903	0.92579326
4/30/2009 13:41	109	1.348179	22.530701	3.112903	0.92579326
4/30/2009 13:41	110	1.347713	22.527283	3.111829	0.92547385
4/30/2009 13:41	111	1.347866	22.5224	3.112181	0.92557853

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4/30/2009 13:41	113	1.347713	22.523895	3.111829	0.92547385
4/30/2009 13:41	114	1.345961	22.521942	3.107781	0.92426995
4/30/2009 13:41	115	1.348696	22.519501	3.114097	0.92614836
4/30/2009 13:41	116	1.347767	22.519501	3.111952	0.92551043
4/30/2009 13:41	117	1.348543	22.521942	3.113744	0.92604338
4/30/2009 13:41	118	1.348635	22.520447	3.113956	0.92610643
4/30/2009 13:41	119	1.347145	22.517548	3.110516	0.92508336
4/30/2009 13:42	120	1.349417	22.517548	3.115762	0.92664354
4/30/2009 13:42	121	1.348022	22.519501	3.112542	0.9256859
4/30/2009 13:42	122	1.348635	22.514587	3.113956	0.92610643
4/30/2009 13:42	123	1.348747	22.514587	3.114216	0.92618375
4/30/2009 13:42	124	1.348635	22.516052	3.113956	0.92610643
4/30/2009 13:42	125	1.349003	22.513153	3.114806	0.92635922
4/30/2009 13:42	126	1.348486	22.514099	3.113612	0.92600412
4/30/2009 13:42	127	1.349003	22.510712	3.114806	0.92635922
4/30/2009 13:42	128	1.34766	22.5112	3.111705	0.92543697
4/30/2009 13:42	129	1.348078	22.511688	3.11267	0.92572397
4/30/2009 13:42	130	1.348949	22.509766	3.114682	0.92632234
4/30/2009 13:42	131	1.3472	22.508759	3.110644	0.92512142
4/30/2009 13:42	132	1.347818	22.509277	3.112071	0.92554582
4/30/2009 13:42	133	1.347713	22.508759	3.111829	0.92547385
4/30/2009 13:42	134	1.347866	22.504852	3.112181	0.92557853
4/30/2009 13:42	135	1.348429	22.505829	3.11348	0.92596486
4/30/2009 13:42	136	1.347919	22.504852	3.112304	0.92561512
4/30/2009 13:42	137	1.345961	22.503906	3.107781	0.92426995
4/30/2009 13:42	138	1.346992	22.50293	3.110164	0.92497867
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4/30/2009 13:42	140	1.347559	22.498505	3.111472	0.92536767
4/30/2009 13:42	141	1.347767	22.501465	3.111952	0.92551043
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4/30/2009 13:42	144	1.348543	22.499481	3.113744	0.92604338
4/30/2009 13:42	145	1.348543	22.498047	3.113744	0.92604338
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4/30/2009 13:42	147	1.347919	22.495605	3.112304	0.92561512
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4/30/2009 13:42	150	1.347609	22.493134	3.111587	0.92540188
4/30/2009 13:42	151	1.34823	22.494629	3.113022	0.92582865
4/30/2009 13:42	152	1.346529	22.492188	3.109094	0.92466045
4/30/2009 13:42	153	1.346992	22.490723	3.110164	0.92497867
4/30/2009 13:42	154	1.346785	22.492645	3.109684	0.92483591
4/30/2009 13:42	155	1.348124	22.491211	3.112776	0.92575549
4/30/2009 13:42	156	1.347713	22.490723	3.111829	0.92547385
4/30/2009 13:42	157	1.347967	22.485352	3.112414	0.92564783
4/30/2009 13:42	158	1.348896	22.489746	3.114559	0.92628576
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4/30/2009 13:42	160	1.3472	22.485352	3.110644	0.92512142
4/30/2009 13:42	161	1.346785	22.482452	3.109684	0.92483591
4/30/2009 13:42	162	1.347919	22.480988	3.112304	0.92561512
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4/30/2009 13:43	201	1.347095	22.456573	3.110402	0.92504945
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4/30/2009 13:43	230	1.345655	22.435638	3.107077	0.92406058
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4/30/2009 13:43	236	1.34663	22.431244	3.109327	0.92472974
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4/30/2009 13:43	238	1.34519	22.431732	3.106002	0.92374087
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4/30/2009 13:44	258	1.345915	22.421509	3.107676	0.92423872
4/30/2009 13:44	259	1.34586	22.420532	3.107548	0.92420066
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4/30/2009 13:44	261	1.346735	22.420532	3.109569	0.92480171
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4/30/2009 13:44	263	1.34519	22.417603	3.106002	0.92374087
4/30/2009 13:44	264	1.345385	22.417114	3.106451	0.9238744
4/30/2009 13:44	265	1.345755	22.415161	3.107306	0.92412868
4/30/2009 13:44	266	1.346165	22.41272	3.108252	0.92441003
4/30/2009 13:44	267	1.346529	22.414185	3.109094	0.92466045
4/30/2009 13:44	268	1.345341	22.413239	3.10635	0.92384437
4/30/2009 13:44	269	1.346272	22.414185	3.108499	0.92448349
4/30/2009 13:44	270	1.346424	22.414185	3.108852	0.92458847
4/30/2009 13:44	271	1.345598	22.414185	3.106945	0.92402132
4/30/2009 13:44	272	1.34528	22.411743	3.106209	0.92380243
4/30/2009 13:44	273	1.34586	22.411255	3.107548	0.92420066

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4/30/2009 13:44	276	1.346424	22.409302	3.108852	0.92458847
4/30/2009 13:44	277	1.34606	22.408356	3.10801	0.92433806
4/30/2009 13:44	278	1.344818	22.408813	3.105144	0.92348569
4/30/2009 13:44	279	1.344975	22.409302	3.105505	0.92359306
4/30/2009 13:44	280	1.34519	22.40979	3.106002	0.92374087
4/30/2009 13:44	281	1.346312	22.403961	3.108592	0.92451115
4/30/2009 13:44	282	1.34626	22.407867	3.108473	0.92447576
4/30/2009 13:44	283	1.345039	22.406372	3.105654	0.92363737
4/30/2009 13:44	284	1.346155	22.403961	3.108231	0.92440378
4/30/2009 13:44	285	1.345808	22.405914	3.107429	0.92416527
4/30/2009 13:44	286	1.345598	22.402954	3.106945	0.92402132
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4/30/2009 13:44	288	1.344301	22.405426	3.10395	0.92313059
4/30/2009 13:44	289	1.346378	22.402954	3.108746	0.92455695
4/30/2009 13:44	290	1.345341	22.402954	3.10635	0.92384437
4/30/2009 13:44	291	1.346992	22.402954	3.110164	0.92497867
4/30/2009 13:44	292	1.345394	22.404449	3.106473	0.92388095
4/30/2009 13:44	293	1.344463	22.40152	3.104324	0.92324182
4/30/2009 13:44	294	1.34606	22.400543	3.10801	0.92433806
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4/30/2009 13:44	298	1.346682	22.402008	3.109446	0.92476513
4/30/2009 13:44	299	1.345341	22.397125	3.10635	0.92384437
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4/30/2009 13:45	302	1.344818	22.393707	3.105144	0.92348569
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4/30/2009 13:45	306	1.344564	22.396149	3.104558	0.92331142
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4/30/2009 13:45	321	1.344664	22.386871	3.104787	0.92337952
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4/30/2009 13:45	344	1.344673	22.375183	3.104809	0.92338606
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4/30/2009 13:47	471	1.357998	22.325958	3.135575	0.93253603
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4/30/2009 13:48	492	1.368658	22.317688	3.160189	0.93985636
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4/30/2009 13:52	725	1.440899	22.254822	3.326991	0.98946413
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4/30/2009 13:52	738	1.44265	22.251892	3.331034	0.99066654
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4/30/2009 13:52	740	1.444553	22.248016	3.335429	0.99197363
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4/30/2009 13:52	744	1.443424	22.25238	3.332822	0.9911983
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4/30/2009 13:52	748	1.443621	22.249969	3.333276	0.99133332
4/30/2009 13:52	749	1.442753	22.251434	3.331272	0.99073732
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4/30/2009 13:59	1182	1.449648	22.179321	3.347192	0.99547201
4/30/2009 13:59	1183	1.45048	22.179321	3.349112	0.99604303
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4/30/2009 13:59	1185	1.449862	22.175446	3.347685	0.99561863
4/30/2009 13:59	1186	1.448177	22.177856	3.343796	0.99446202
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4/30/2009 13:59	1188	1.449446	22.176392	3.346725	0.99533312
4/30/2009 13:59	1189	1.44924	22.175446	3.34625	0.99519185
4/30/2009 13:59	1190	1.449602	22.178345	3.347086	0.99544048
4/30/2009 13:59	1191	1.44898	22.177856	3.345651	0.99501371

4/30/2009 13:59	1192	1.448792	22.176392	3.345215	0.99488404
4/30/2009 13:59	1193	1.448746	22.180298	3.345109	0.99485251
4/30/2009 13:59	1194	1.450014	22.174957	3.348037	0.99572331
4/30/2009 13:59	1195	1.449394	22.17688	3.346606	0.99529773
4/30/2009 13:59	1196	1.449337	22.174469	3.346474	0.99525847
4/30/2009 13:59	1197	1.449968	22.178345	3.347932	0.99569209
4/30/2009 13:59	1198	1.449968	22.175903	3.347932	0.99569209
4/30/2009 13:59	1199	1.447649	22.178345	3.342577	0.99409948
4/30/2009 14:00	1200	1.448771	22.179321	3.345166	0.99486946
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4/30/2009 14:00	1207	1.448465	22.174957	3.344462	0.99466009
4/30/2009 14:00	1208	1.448177	22.17688	3.343796	0.99446202
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4/30/2009 14:00	1225	1.448729	22.170532	3.345069	0.99484062
4/30/2009 14:00	1226	1.448158	22.171509	3.343753	0.99444923
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4/30/2009 14:00	1228	1.447435	22.173492	3.342083	0.99395256
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4/30/2009 14:00	1238	1.444887	22.171051	3.3362	0.99220293
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4/30/2009 14:03	1409	1.436184	22.153015	3.316104	0.98622628
4/30/2009 14:03	1410	1.437628	22.153015	3.319438	0.98721783
4/30/2009 14:03	1411	1.437262	22.152039	3.318592	0.98696622
4/30/2009 14:03	1412	1.435463	22.150574	3.31444	0.9857314
4/30/2009 14:03	1413	1.436262	22.149139	3.316285	0.98628011
4/30/2009 14:03	1414	1.436852	22.152039	3.317646	0.98668488
4/30/2009 14:03	1415	1.437756	22.153015	3.319733	0.98730556
4/30/2009 14:03	1416	1.43714	22.148163	3.318311	0.98688265
4/30/2009 14:03	1417	1.436699	22.15155	3.317293	0.98657989
4/30/2009 14:03	1418	1.437002	22.15155	3.317993	0.98678808
4/30/2009 14:03	1419	1.436287	22.149628	3.316342	0.98629706
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4/30/2009 14:03	1421	1.437653	22.150116	3.319495	0.98723478
4/30/2009 14:03	1422	1.437756	22.151062	3.319733	0.98730556
4/30/2009 14:03	1423	1.43479	22.149628	3.312885	0.98526893
4/30/2009 14:03	1424	1.436441	22.150116	3.316699	0.98640323
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4/30/2009 14:03	1427	1.436029	22.151062	3.315748	0.9861204
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4/30/2009 14:03	1431	1.436728	22.146698	3.317359	0.98659952
4/30/2009 14:03	1432	1.435928	22.151062	3.315514	0.98605081
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4/30/2009 14:03	1434	1.43441	22.151062	3.312008	0.98500811
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4/30/2009 14:03	1436	1.434742	22.149139	3.312775	0.98523622
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4/30/2009 14:04	1448	1.434307	22.147156	3.311771	0.98493762
4/30/2009 14:04	1449	1.434103	22.148651	3.311299	0.98479725
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4/30/2009 14:04	1454	1.43479	22.148163	3.312885	0.98526893
4/30/2009 14:04	1455	1.434233	22.147156	3.311599	0.98488647
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4/30/2009 14:04	1468	1.433455	22.14621	3.309802	0.98435203
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4/30/2009 14:04	1471	1.434616	22.147156	3.312484	0.98514967
4/30/2009 14:04	1472	1.433559	22.146698	3.310044	0.984424
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4/30/2009 14:04	1475	1.432636	22.144226	3.307913	0.98379023
4/30/2009 14:04	1476	1.432636	22.144745	3.307913	0.98379023
4/30/2009 14:04	1477	1.432457	22.146698	3.307499	0.98366711
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4/30/2009 14:04	1479	1.432171	22.144745	3.306838	0.98347052
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4/30/2009 14:04	1484	1.431192	22.144745	3.304579	0.98279868
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4/30/2009 14:07	1632	1.42532	22.132568	3.291019	0.97876587
4/30/2009 14:07	1633	1.424397	22.132568	3.288887	0.9781318
4/30/2009 14:07	1634	1.423262	22.131073	3.286267	0.9773526
4/30/2009 14:07	1635	1.425785	22.129639	3.292094	0.97908558
4/30/2009 14:07	1636	1.424704	22.13208	3.289596	0.97834266
4/30/2009 14:07	1637	1.424961	22.132568	3.290191	0.97851962
4/30/2009 14:07	1638	1.42561	22.12915	3.291688	0.97896483
4/30/2009 14:07	1639	1.426432	22.131592	3.293586	0.97952931
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4/30/2009 14:07	1641	1.425785	22.131592	3.292094	0.97908558
4/30/2009 14:07	1642	1.424858	22.130646	3.289953	0.97844884
4/30/2009 14:07	1643	1.425554	22.12915	3.291561	0.97892706
4/30/2009 14:07	1644	1.424704	22.133545	3.289596	0.97834266
4/30/2009 14:07	1645	1.425169	22.130157	3.290671	0.97866237
4/30/2009 14:07	1646	1.426432	22.133057	3.293586	0.97952931
4/30/2009 14:07	1647	1.424961	22.13208	3.290191	0.97851962
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4/30/2009 14:07	1650	1.42429	22.130646	3.28864	0.97805834
4/30/2009 14:07	1651	1.424397	22.130157	3.288887	0.9781318
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4/30/2009 14:07	1671	1.42231	22.128662	3.284069	0.9766989
4/30/2009 14:07	1672	1.422234	22.130157	3.283893	0.97664656
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4/30/2009 14:07	1676	1.421717	22.129639	3.2827	0.97629176
4/30/2009 14:07	1677	1.422539	22.126221	3.284598	0.97685623

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4/30/2009 14:08	1686	1.422285	22.126221	3.284012	0.97668195
4/30/2009 14:08	1687	1.421415	22.124298	3.282004	0.97608476
4/30/2009 14:08	1688	1.421875	22.126221	3.283065	0.97640031
4/30/2009 14:08	1689	1.421156	22.126709	3.281405	0.97590662
4/30/2009 14:08	1690	1.423082	22.125244	3.285853	0.97722948
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4/30/2009 14:08	1692	1.421047	22.126709	3.281154	0.97583197
4/30/2009 14:08	1693	1.420378	22.126221	3.279608	0.97537218
4/30/2009 14:08	1694	1.421898	22.127197	3.283118	0.97641607
4/30/2009 14:08	1695	1.421795	22.124298	3.28288	0.97634529
4/30/2009 14:08	1696	1.419605	22.127197	3.277825	0.97484191
4/30/2009 14:08	1697	1.420094	22.122345	3.278952	0.97517708
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4/30/2009 14:08	1701	1.420534	22.128662	3.279969	0.97547954
4/30/2009 14:08	1702	1.420481	22.126221	3.279846	0.97544296
4/30/2009 14:08	1703	1.420429	22.124298	3.279727	0.97540757
4/30/2009 14:08	1704	1.420897	22.121826	3.280806	0.97572847
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4/30/2009 14:08	1706	1.42033	22.124756	3.279498	0.97533947
4/30/2009 14:08	1707	1.420122	22.127197	3.279018	0.97519671
4/30/2009 14:08	1708	1.420691	22.124756	3.28033	0.97558691
4/30/2009 14:08	1709	1.419294	22.125244	3.277107	0.97462837
4/30/2009 14:08	1710	1.421001	22.126221	3.281048	0.97580044
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4/30/2009 14:09	1794	1.415751	22.121368	3.268924	0.9721947
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4/30/2009 14:10	1856	1.413765	22.11795	3.264339	0.9708311
4/30/2009 14:10	1857	1.413174	22.114563	3.262974	0.97042514
4/30/2009 14:10	1858	1.41198	22.115997	3.260217	0.9696052
4/30/2009 14:10	1859	1.411629	22.115509	3.259407	0.9693643
4/30/2009 14:11	1860	1.41132	22.114075	3.258693	0.96915195
4/30/2009 14:11	1861	1.412764	22.115509	3.262028	0.9701438
4/30/2009 14:11	1862	1.411783	22.116486	3.259763	0.96947018
4/30/2009 14:11	1863	1.412138	22.115021	3.260583	0.96971405
4/30/2009 14:11	1864	1.413765	22.111145	3.264339	0.9708311
4/30/2009 14:11	1865	1.413561	22.111633	3.263868	0.97069102
4/30/2009 14:11	1866	1.411448	22.114563	3.258989	0.96923998
4/30/2009 14:11	1867	1.411221	22.113586	3.258465	0.96908414
4/30/2009 14:11	1868	1.411732	22.112091	3.259645	0.96943508
4/30/2009 14:11	1869	1.412193	22.112579	3.260711	0.96975212
4/30/2009 14:11	1870	1.412867	22.113586	3.262265	0.97021428
4/30/2009 14:11	1871	1.41194	22.115021	3.260125	0.96957784
4/30/2009 14:11	1872	1.411629	22.115021	3.259407	0.9693643
4/30/2009 14:11	1873	1.410393	22.117462	3.256553	0.96851551
4/30/2009 14:11	1874	1.410345	22.112091	3.256443	0.96848279
4/30/2009 14:11	1875	1.411112	22.10965	3.258214	0.9690095
4/30/2009 14:11	1876	1.410809	22.111145	3.257513	0.96880101
4/30/2009 14:11	1877	1.411966	22.114563	3.260186	0.96959598
4/30/2009 14:11	1878	1.409933	22.113586	3.255492	0.96819996
4/30/2009 14:11	1879	1.409464	22.113586	3.254409	0.96787787
4/30/2009 14:11	1880	1.411398	22.112579	3.258874	0.96920578
4/30/2009 14:11	1881	1.411243	22.115997	3.258517	0.96909961
4/30/2009 14:11	1882	1.410294	22.112091	3.256324	0.9684474
4/30/2009 14:11	1883	1.410549	22.114563	3.256914	0.96862287
4/30/2009 14:11	1884	1.410294	22.113098	3.256324	0.9684474
4/30/2009 14:11	1885	1.410978	22.112091	3.257905	0.9689176
4/30/2009 14:11	1886	1.409571	22.111145	3.254655	0.96795103
4/30/2009 14:11	1887	1.41044	22.112579	3.256663	0.96854822
4/30/2009 14:11	1888	1.410496	22.111145	3.256791	0.96858629
4/30/2009 14:11	1889	1.409933	22.110657	3.255492	0.96819996
4/30/2009 14:11	1890	1.410194	22.113098	3.256095	0.96837929
4/30/2009 14:11	1891	1.409674	22.113098	3.254893	0.96802181
4/30/2009 14:11	1892	1.409571	22.111633	3.254655	0.96795103
4/30/2009 14:11	1893	1.411522	22.112091	3.25916	0.96929084

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4/30/2009 14:11	1895	1.409592	22.112579	3.254704	0.9679656
4/30/2009 14:11	1896	1.409489	22.109161	3.254466	0.96789482
4/30/2009 14:11	1897	1.407974	22.112579	3.250969	0.9668548
4/30/2009 14:11	1898	1.409874	22.111145	3.255355	0.96815921
4/30/2009 14:11	1899	1.409517	22.112091	3.254532	0.96791445
4/30/2009 14:11	1900	1.408848	22.112091	3.252986	0.96745466
4/30/2009 14:11	1901	1.408649	22.112579	3.252528	0.96731845
4/30/2009 14:11	1902	1.409777	22.110168	3.255131	0.9680926
4/30/2009 14:11	1903	1.40921	22.111145	3.253823	0.96770359
4/30/2009 14:11	1904	1.4088	22.111633	3.252876	0.96742195
4/30/2009 14:11	1905	1.409258	22.112579	3.253933	0.9677363
4/30/2009 14:11	1906	1.410393	22.113098	3.256553	0.96851551
4/30/2009 14:11	1907	1.409517	22.112091	3.254532	0.96791445
4/30/2009 14:11	1908	1.408747	22.112091	3.252752	0.96738507
4/30/2009 14:11	1909	1.408747	22.110168	3.252752	0.96738507
4/30/2009 14:11	1910	1.407614	22.111145	3.250136	0.96660706
4/30/2009 14:11	1911	1.408953	22.114075	3.253228	0.96752663
4/30/2009 14:11	1912	1.408592	22.108673	3.252396	0.96727919
4/30/2009 14:11	1913	1.409571	22.113098	3.254655	0.96795103
4/30/2009 14:11	1914	1.408848	22.110168	3.252986	0.96745466
4/30/2009 14:11	1915	1.409822	22.110168	3.255236	0.96812382
4/30/2009 14:11	1916	1.409464	22.112579	3.254409	0.96787787
4/30/2009 14:11	1917	1.409933	22.112091	3.255492	0.96819996
4/30/2009 14:11	1918	1.408848	22.10675	3.252986	0.96745466
4/30/2009 14:11	1919	1.408953	22.110168	3.253228	0.96752663
4/30/2009 14:12	1920	1.409058	22.111633	3.25347	0.96759861
4/30/2009 14:12	1921	1.407974	22.110168	3.250969	0.9668548
4/30/2009 14:12	1922	1.41044	22.111145	3.256663	0.96854822
4/30/2009 14:12	1923	1.408607	22.113098	3.252431	0.9672896
4/30/2009 14:12	1924	1.409307	22.108673	3.254047	0.96777021
4/30/2009 14:12	1925	1.409517	22.110168	3.254532	0.96791445
4/30/2009 14:12	1926	1.409002	22.10965	3.253343	0.96756083
4/30/2009 14:12	1927	1.408438	22.109161	3.252039	0.96717302
4/30/2009 14:12	1928	1.40921	22.109161	3.253823	0.96770359
4/30/2009 14:12	1929	1.408976	22.10675	3.253281	0.9675424
4/30/2009 14:12	1930	1.409489	22.108673	3.254466	0.96789482
4/30/2009 14:12	1931	1.408649	22.111145	3.252528	0.96731845
4/30/2009 14:12	1932	1.409258	22.10965	3.253933	0.9677363
4/30/2009 14:12	1933	1.408182	22.10965	3.251449	0.96699755
4/30/2009 14:12	1934	1.408182	22.108673	3.251449	0.96699755
4/30/2009 14:12	1935	1.409286	22.109161	3.253999	0.96775593
4/30/2009 14:12	1936	1.407663	22.110168	3.250251	0.96664126
4/30/2009 14:12	1937	1.408869	22.108673	3.253034	0.96746894
4/30/2009 14:12	1938	1.407663	22.110168	3.250251	0.96664126
4/30/2009 14:12	1939	1.409437	22.110657	3.254347	0.96785943
4/30/2009 14:12	1940	1.406641	22.109161	3.24789	0.96593908
4/30/2009 14:12	1941	1.407049	22.106262	3.248833	0.96621954
4/30/2009 14:12	1942	1.407457	22.110168	3.249775	0.96649969
4/30/2009 14:12	1943	1.406788	22.107727	3.24823	0.9660402
4/30/2009 14:12	1944	1.407974	22.106262	3.250969	0.9668548
4/30/2009 14:12	1945	1.406328	22.108673	3.247168	0.96572436
4/30/2009 14:12	1946	1.407457	22.111633	3.249775	0.96649969
4/30/2009 14:12	1947	1.406641	22.104828	3.24789	0.96593908

4/30/2009 14:12	1948	1.406687	22.108215	3.247996	0.96597061
4/30/2009 14:12	1949	1.407637	22.110168	3.250189	0.96662282
4/30/2009 14:12	1950	1.406893	22.10675	3.248472	0.96611217
4/30/2009 14:12	1951	1.407507	22.108215	3.24989	0.9665339
4/30/2009 14:12	1952	1.406586	22.107239	3.247763	0.96590131
4/30/2009 14:12	1953	1.405401	22.108215	3.245028	0.96508791
4/30/2009 14:12	1954	1.406069	22.109161	3.246569	0.96554621
4/30/2009 14:12	1955	1.407257	22.109161	3.249313	0.96636229
4/30/2009 14:12	1956	1.407303	22.111633	3.249418	0.96639352
4/30/2009 14:12	1957	1.406788	22.110657	3.24823	0.9660402
4/30/2009 14:12	1958	1.406586	22.108215	3.247763	0.96590131
4/30/2009 14:12	1959	1.40535	22.107239	3.244909	0.96505252
4/30/2009 14:12	1960	1.406734	22.109161	3.248106	0.96600332
4/30/2009 14:12	1961	1.406277	22.107239	3.247049	0.96568897
4/30/2009 14:12	1962	1.405756	22.106262	3.245847	0.96533149
4/30/2009 14:12	1963	1.406641	22.109161	3.24789	0.96593908
4/30/2009 14:12	1964	1.406994	22.10675	3.248705	0.96618147
4/30/2009 14:12	1965	1.40653	22.108215	3.247635	0.96586325
4/30/2009 14:12	1966	1.406174	22.108215	3.246811	0.96561818
4/30/2009 14:12	1967	1.405602	22.108215	3.24549	0.96522531
4/30/2009 14:12	1968	1.406174	22.106262	3.246811	0.96561818
4/30/2009 14:12	1969	1.405966	22.105774	3.246332	0.96547573
4/30/2009 14:12	1970	1.406017	22.10675	3.24645	0.96551082
4/30/2009 14:12	1971	1.406174	22.105774	3.246811	0.96561818
4/30/2009 14:12	1972	1.405708	22.107239	3.245737	0.96529877
4/30/2009 14:12	1973	1.405401	22.107239	3.245028	0.96508791
4/30/2009 14:12	1974	1.406174	22.108215	3.246811	0.96561818
4/30/2009 14:12	1975	1.404112	22.108673	3.242051	0.96420254
4/30/2009 14:12	1976	1.405659	22.108673	3.245623	0.96526487
4/30/2009 14:12	1977	1.405659	22.107727	3.245623	0.96526487
4/30/2009 14:12	1978	1.405371	22.107727	3.244957	0.9650668
4/30/2009 14:12	1979	1.406374	22.103851	3.247274	0.96575588
4/30/2009 14:13	1980	1.405144	22.106262	3.244433	0.96491096
4/30/2009 14:13	1981	1.405966	22.110657	3.246332	0.96547573
4/30/2009 14:13	1982	1.405247	22.10434	3.244671	0.96498174
4/30/2009 14:13	1983	1.4065	22.107727	3.247565	0.96584243
4/30/2009 14:13	1984	1.40535	22.105316	3.244909	0.96505252
4/30/2009 14:13	1985	1.4055	22.104828	3.245257	0.96515602
4/30/2009 14:13	1986	1.404886	22.104828	3.243839	0.9647343
4/30/2009 14:13	1987	1.405247	22.10675	3.244671	0.96498174
4/30/2009 14:13	1988	1.404266	22.108215	3.242407	0.96430841
4/30/2009 14:13	1989	1.405247	22.104828	3.244671	0.96498174
4/30/2009 14:13	1990	1.405867	22.106262	3.246102	0.96540732
4/30/2009 14:13	1991	1.405867	22.10434	3.246102	0.96540732
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4/30/2009 14:13	2014	1.40406	22.104828	3.241932	0.96416715
4/30/2009 14:13	2015	1.404165	22.104828	3.242174	0.96423912
4/30/2009 14:13	2016	1.403601	22.105774	3.24087	0.9638513
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4/30/2009 14:13	2022	1.40406	22.103333	3.241932	0.96416715
4/30/2009 14:13	2023	1.403908	22.104828	3.24158	0.96406246
4/30/2009 14:13	2024	1.405144	22.103333	3.244433	0.96491096
4/30/2009 14:13	2025	1.403908	22.104828	3.24158	0.96406246
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4/30/2009 14:13	2031	1.40406	22.103333	3.241932	0.96416715
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4/30/2009 14:13	2036	1.403294	22.103333	3.240161	0.96364044
4/30/2009 14:13	2037	1.403397	22.102814	3.240399	0.96371122
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4/30/2009 14:14	2067	1.4018	22.103851	3.236713	0.96261499
4/30/2009 14:14	2068	1.401386	22.100403	3.235757	0.96233067
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4/30/2009 14:14	2071	1.400454	22.098938	3.233604	0.96169036
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4/30/2009 14:14	2083	1.401436	22.101898	3.235872	0.96236487
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4/30/2009 14:14	2085	1.400204	22.100891	3.233027	0.96151875
4/30/2009 14:14	2086	1.400972	22.100403	3.234802	0.96204665
4/30/2009 14:14	2087	1.400972	22.098938	3.234802	0.96204665
4/30/2009 14:14	2088	1.400972	22.099915	3.234802	0.96204665
4/30/2009 14:14	2089	1.401693	22.097992	3.236467	0.96254183
4/30/2009 14:14	2090	1.399794	22.100891	3.23208	0.96123711
4/30/2009 14:14	2091	1.401077	22.099915	3.235044	0.96211862
4/30/2009 14:14	2092	1.400921	22.099426	3.234683	0.96201126
4/30/2009 14:14	2093	1.400715	22.097504	3.234207	0.96186969
4/30/2009 14:14	2094	1.400612	22.098938	3.233969	0.96179891
4/30/2009 14:14	2095	1.400972	22.100403	3.234802	0.96204665
4/30/2009 14:14	2096	1.400408	22.097015	3.233498	0.96165883
4/30/2009 14:14	2097	1.401329	22.09848	3.235626	0.96229171
4/30/2009 14:14	2098	1.401663	22.101379	3.236396	0.96252071
4/30/2009 14:14	2099	1.401485	22.100403	3.235986	0.96239877
4/30/2009 14:15	2100	1.401541	22.098938	3.236114	0.96243684
4/30/2009 14:15	2101	1.400204	22.099915	3.233027	0.96151875
4/30/2009 14:15	2102	1.400511	22.100403	3.233736	0.96172961
4/30/2009 14:15	2103	1.400612	22.100891	3.233969	0.96179891
4/30/2009 14:15	2104	1.399891	22.098938	3.232305	0.96130403
4/30/2009 14:15	2105	1.401178	22.096527	3.235277	0.96218791
4/30/2009 14:15	2106	1.401026	22.097504	3.234925	0.96208323
4/30/2009 14:15	2107	1.401485	22.097504	3.235986	0.96239877
4/30/2009 14:15	2108	1.400408	22.097015	3.233498	0.96165883
4/30/2009 14:15	2109	1.39999	22.098938	3.232534	0.96137213

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4/30/2009 14:15	2112	1.40082	22.097015	3.23445	0.96194196
4/30/2009 14:15	2113	1.401485	22.096527	3.235986	0.96239877
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4/30/2009 14:15	2115	1.402	22.096527	3.237176	0.96275269
4/30/2009 14:15	2116	1.401405	22.097992	3.235802	0.96234405
4/30/2009 14:15	2117	1.400867	22.096039	3.23456	0.96197467
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4/30/2009 14:15	2121	1.401947	22.096527	3.237052	0.96271581
4/30/2009 14:15	2122	1.401178	22.097504	3.235277	0.96218791
4/30/2009 14:15	2123	1.402056	22.100403	3.237303	0.96279046
4/30/2009 14:15	2124	1.401232	22.097015	3.235401	0.96222479
4/30/2009 14:15	2125	1.401436	22.097504	3.235872	0.96236487
4/30/2009 14:15	2126	1.401541	22.09848	3.236114	0.96243684
4/30/2009 14:15	2127	1.400715	22.096527	3.234207	0.96186969
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4/30/2009 14:15	2132	1.398659	22.098938	3.22946	0.96045791
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4/30/2009 14:15	2134	1.40082	22.096527	3.23445	0.96194196
4/30/2009 14:15	2135	1.400051	22.096039	3.232675	0.96141407
4/30/2009 14:15	2136	1.399485	22.098938	3.231367	0.96102506
4/30/2009 14:15	2137	1.3983	22.096527	3.228632	0.96021166
4/30/2009 14:15	2138	1.400562	22.097504	3.233855	0.961765
4/30/2009 14:15	2139	1.400141	22.096039	3.232882	0.96147563
4/30/2009 14:15	2140	1.399275	22.094086	3.230882	0.96088082
4/30/2009 14:15	2141	1.400839	22.097015	3.234493	0.96195475
4/30/2009 14:15	2142	1.400408	22.096527	3.233498	0.96165883
4/30/2009 14:15	2143	1.39896	22.097015	3.230156	0.9606649
4/30/2009 14:15	2144	1.399225	22.097504	3.230768	0.96084691
4/30/2009 14:15	2145	1.399588	22.097504	3.231605	0.96109584
4/30/2009 14:15	2146	1.400099	22.094086	3.232785	0.96144678
4/30/2009 14:15	2147	1.399326	22.096527	3.231001	0.96091621
4/30/2009 14:15	2148	1.399837	22.098938	3.232181	0.96126715
4/30/2009 14:15	2149	1.40082	22.096527	3.23445	0.96194196
4/30/2009 14:15	2150	1.400511	22.095062	3.233736	0.96172961
4/30/2009 14:15	2151	1.398659	22.093109	3.22946	0.96045791
4/30/2009 14:15	2152	1.39999	22.094574	3.232534	0.96137213
4/30/2009 14:15	2153	1.399837	22.097015	3.232181	0.96126715
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4/30/2009 14:15	2155	1.399944	22.093567	3.232428	0.96134061
4/30/2009 14:15	2156	1.399527	22.096527	3.231464	0.96105391
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4/30/2009 14:15	2158	1.399641	22.094086	3.231728	0.96113242
4/30/2009 14:15	2159	1.399275	22.097992	3.230882	0.96088082
4/30/2009 14:16	2160	1.398453	22.095581	3.228984	0.96031634
4/30/2009 14:16	2161	1.398035	22.095581	3.22802	0.96002965
4/30/2009 14:16	2162	1.399069	22.094086	3.230407	0.96073955
4/30/2009 14:16	2163	1.398706	22.094086	3.22957	0.96049062

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4/30/2009 14:16	2165	1.398092	22.095581	3.228152	0.9600689
4/30/2009 14:16	2166	1.39855	22.097992	3.229209	0.96038326
4/30/2009 14:16	2167	1.399527	22.093567	3.231464	0.96105391
4/30/2009 14:16	2168	1.398243	22.094086	3.228499	0.9601721
4/30/2009 14:16	2169	1.399641	22.097504	3.231728	0.96113242
4/30/2009 14:16	2170	1.399069	22.095062	3.230407	0.96073955
4/30/2009 14:16	2171	1.399431	22.095581	3.231243	0.96098818
4/30/2009 14:16	2172	1.397938	22.093567	3.227795	0.95996273
4/30/2009 14:16	2173	1.398453	22.095581	3.228984	0.96031634
4/30/2009 14:16	2174	1.39855	22.096527	3.229209	0.96038326
4/30/2009 14:16	2175	1.398809	22.091644	3.229808	0.96056141
4/30/2009 14:16	2176	1.400141	22.095581	3.232882	0.96147563
4/30/2009 14:16	2177	1.398609	22.095062	3.229345	0.96042371
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4/30/2009 14:16	2179	1.399225	22.095581	3.230768	0.96084691
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4/30/2009 14:16	2182	1.398912	22.094574	3.230045	0.96063189
4/30/2009 14:16	2183	1.398399	22.095062	3.228861	0.96027976
4/30/2009 14:16	2184	1.397938	22.091644	3.227795	0.95996273
4/30/2009 14:16	2185	1.3992	22.094574	3.230711	0.96082996
4/30/2009 14:16	2186	1.398659	22.093567	3.22946	0.96045791
4/30/2009 14:16	2187	1.3983	22.093567	3.228632	0.96021166
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4/30/2009 14:16	2191	1.398142	22.092133	3.228266	0.96010281
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4/30/2009 14:17	2235	1.396809	22.088257	3.225188	0.95918739
4/30/2009 14:17	2236	1.3983	22.089691	3.228632	0.96021166
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4/30/2009 14:17	2248	1.396542	22.091156	3.224571	0.9590039
4/30/2009 14:17	2249	1.396542	22.090668	3.224571	0.9590039
4/30/2009 14:17	2250	1.397371	22.093109	3.226487	0.95957372
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4/30/2009 14:17	2266	1.396698	22.091644	3.224932	0.95911126
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4/30/2009 14:17	2268	1.396132	22.088745	3.223624	0.95872225
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4/30/2009 14:17	2275	1.395519	22.087769	3.222211	0.95830202
4/30/2009 14:17	2276	1.397057	22.088745	3.22576	0.95935751
4/30/2009 14:17	2277	1.395826	22.088745	3.22292	0.95851288
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4/30/2009 14:18	2297	1.396156	22.087769	3.223682	0.9587395
4/30/2009 14:18	2298	1.39562	22.090179	3.222444	0.95837131
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4/30/2009 14:18	2304	1.396654	22.089233	3.224831	0.95908122
4/30/2009 14:18	2305	1.397261	22.08725	3.226232	0.95949789
4/30/2009 14:18	2306	1.396391	22.086792	3.224223	0.9589004
4/30/2009 14:18	2307	1.396191	22.088257	3.223761	0.958763
4/30/2009 14:18	2308	1.39562	22.087769	3.222444	0.95837131
4/30/2009 14:18	2309	1.396288	22.087769	3.223985	0.95882962
4/30/2009 14:18	2310	1.394638	22.088257	3.220176	0.9576968
4/30/2009 14:18	2311	1.395411	22.086304	3.22196	0.95822737
4/30/2009 14:18	2312	1.395727	22.084839	3.222691	0.95844477
4/30/2009 14:18	2313	1.395519	22.086304	3.222211	0.95830202
4/30/2009 14:18	2314	1.395111	22.088745	3.221268	0.95802157
4/30/2009 14:18	2315	1.394638	22.088745	3.220176	0.9576968
4/30/2009 14:18	2316	1.395308	22.086792	3.221722	0.95815659
4/30/2009 14:18	2317	1.395464	22.089233	3.222083	0.95826395
4/30/2009 14:18	2318	1.39505	22.088257	3.221127	0.95797963
4/30/2009 14:18	2319	1.394846	22.086304	3.220656	0.95783955
4/30/2009 14:18	2320	1.395206	22.083862	3.221488	0.958087
4/30/2009 14:18	2321	1.39505	22.085815	3.221127	0.95797963
4/30/2009 14:18	2322	1.394739	22.086792	3.220409	0.9577661
4/30/2009 14:18	2323	1.394953	22.086304	3.220903	0.95791301
4/30/2009 14:18	2324	1.394386	22.092133	3.219595	0.95752401
4/30/2009 14:18	2325	1.394638	22.089233	3.220176	0.9576968

4/30/2009 14:18	2326	1.396038	22.085327	3.223408	0.95865801
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4/30/2009 14:18	2328	1.395567	22.086304	3.222321	0.95833473
4/30/2009 14:18	2329	1.394739	22.08432	3.220409	0.9577661
4/30/2009 14:18	2330	1.395308	22.08725	3.221722	0.95815659
4/30/2009 14:18	2331	1.394432	22.089233	3.2197	0.95755523
4/30/2009 14:18	2332	1.393826	22.086304	3.2183	0.95713887
4/30/2009 14:18	2333	1.395308	22.086304	3.221722	0.95815659
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4/30/2009 14:18	2335	1.395359	22.085327	3.221841	0.95819198
4/30/2009 14:18	2336	1.394846	22.085327	3.220656	0.95783955
4/30/2009 14:18	2337	1.395157	22.086304	3.221374	0.95805309
4/30/2009 14:18	2338	1.396191	22.08725	3.223761	0.958763
4/30/2009 14:18	2339	1.395	22.087769	3.221013	0.95794573
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4/30/2009 14:19	2342	1.394026	22.083862	3.218762	0.95727627
4/30/2009 14:19	2343	1.395308	22.088745	3.221722	0.95815659
4/30/2009 14:19	2344	1.394539	22.08432	3.219947	0.95762869
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4/30/2009 14:19	2346	1.39274	22.085327	3.215794	0.95639357
4/30/2009 14:19	2347	1.394846	22.083862	3.220656	0.95783955
4/30/2009 14:19	2348	1.393826	22.08432	3.2183	0.95713887
4/30/2009 14:19	2349	1.394073	22.08432	3.218872	0.95730898
4/30/2009 14:19	2350	1.394073	22.085327	3.218872	0.95730898
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4/30/2009 14:19	2352	1.3948	22.086792	3.220551	0.95780833
4/30/2009 14:19	2353	1.395111	22.085327	3.221268	0.95802157
4/30/2009 14:19	2354	1.395	22.083862	3.221013	0.95794573
4/30/2009 14:19	2355	1.395308	22.08725	3.221722	0.95815659
4/30/2009 14:19	2356	1.394386	22.083862	3.219595	0.95752401
4/30/2009 14:19	2357	1.394026	22.086792	3.218762	0.95727627
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4/30/2009 14:19	2360	1.394638	22.08725	3.220176	0.9576968
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4/30/2009 14:19	2362	1.392895	22.085327	3.216151	0.95649974
4/30/2009 14:19	2363	1.393517	22.085327	3.217587	0.95692682
4/30/2009 14:19	2364	1.394234	22.081909	3.219242	0.95741902
4/30/2009 14:19	2365	1.394386	22.084839	3.219595	0.95752401
4/30/2009 14:19	2366	1.393871	22.083374	3.218406	0.95717039
4/30/2009 14:19	2367	1.393616	22.082886	3.217816	0.95699492
4/30/2009 14:19	2368	1.393763	22.084839	3.218154	0.95709545
4/30/2009 14:19	2369	1.392633	22.085327	3.215547	0.95632011
4/30/2009 14:19	2370	1.393457	22.089691	3.21745	0.95688607
4/30/2009 14:19	2371	1.392944	22.086792	3.216265	0.95653365
4/30/2009 14:19	2372	1.3932	22.081909	3.216856	0.95670941
4/30/2009 14:19	2373	1.392429	22.083862	3.215076	0.95618003
4/30/2009 14:19	2374	1.391603	22.082886	3.213169	0.95561288
4/30/2009 14:19	2375	1.393663	22.08432	3.217926	0.95702764
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4/30/2009 14:19	2377	1.392376	22.084839	3.214953	0.95614345
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4/30/2009 14:19	2382	1.392895	22.085327	3.216151	0.95649974
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4/30/2009 14:19	2385	1.394129	22.085327	3.219	0.95734705
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4/30/2009 14:19	2387	1.392685	22.084839	3.215667	0.9563558
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4/30/2009 14:19	2389	1.393457	22.084839	3.21745	0.95688607
4/30/2009 14:19	2390	1.392685	22.08432	3.215667	0.9563558
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4/30/2009 14:19	2395	1.392633	22.083374	3.215547	0.95632011
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4/30/2009 14:20	2423	1.391962	22.079956	3.213997	0.95585913
4/30/2009 14:20	2424	1.392117	22.083374	3.214354	0.95596531
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4/30/2009 14:20	2428	1.391296	22.083374	3.21246	0.95540202
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4/30/2009 14:20	2431	1.391193	22.081909	3.212222	0.95533124
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4/30/2009 14:20	2458	1.391554	22.080933	3.213055	0.95557898
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4/30/2009 14:21	2472	1.389645	22.078522	3.208646	0.95426772
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4/30/2009 14:26	2764	1.381924	22.068268	3.190819	0.94896588
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4/30/2009 14:26	2777	1.382391	22.06781	3.191898	0.94928678
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4/30/2009 14:29	2985	1.377655	22.061951	3.180963	0.94603465
4/30/2009 14:29	2986	1.377701	22.062439	3.181068	0.94606588
4/30/2009 14:29	2987	1.377811	22.060028	3.181324	0.94614202
4/30/2009 14:29	2988	1.378067	22.060455	3.181914	0.94631749
4/30/2009 14:29	2989	1.377087	22.060974	3.179651	0.94564446
4/30/2009 14:29	2990	1.376823	22.060028	3.179043	0.94546364
4/30/2009 14:29	2991	1.377909	22.060974	3.181549	0.94620893
4/30/2009 14:29	2992	1.377602	22.061462	3.18084	0.94599807
4/30/2009 14:29	2993	1.377964	22.060028	3.181676	0.9462467
4/30/2009 14:29	2994	1.37698	22.058044	3.179404	0.945571
4/30/2009 14:29	2995	1.377602	22.059021	3.18084	0.94599807
4/30/2009 14:29	2996	1.376471	22.058044	3.178228	0.94522125
4/30/2009 14:29	2997	1.377544	22.05954	3.180707	0.94595852
4/30/2009 14:29	2998	1.377964	22.05954	3.181676	0.9462467
4/30/2009 14:29	2999	1.377392	22.060455	3.180355	0.94585383
4/30/2009 14:30	3000	1.377239	22.062927	3.180003	0.94574914
4/30/2009 14:30	3001	1.377087	22.065338	3.179651	0.94564446
4/30/2009 14:30	3002	1.37698	22.05954	3.179404	0.945571
4/30/2009 14:30	3003	1.376877	22.061951	3.179166	0.94550022
4/30/2009 14:30	3004	1.378376	22.059021	3.182628	0.94652983
4/30/2009 14:30	3005	1.378222	22.060028	3.182271	0.94642366
4/30/2009 14:30	3006	1.377754	22.058044	3.181192	0.94610276
4/30/2009 14:30	3007	1.377392	22.060028	3.180355	0.94585383
4/30/2009 14:30	3008	1.378017	22.060028	3.1818	0.94628358
4/30/2009 14:30	3009	1.378735	22.058533	3.183455	0.94677579
4/30/2009 14:30	3010	1.378994	22.060028	3.184054	0.94695393
4/30/2009 14:30	3011	1.377964	22.060455	3.181676	0.9462467
4/30/2009 14:30	3012	1.37698	22.058533	3.179404	0.945571
4/30/2009 14:30	3013	1.378119	22.05661	3.182033	0.94635288
4/30/2009 14:30	3014	1.377754	22.061951	3.181192	0.94610276
4/30/2009 14:30	3015	1.377701	22.060028	3.181068	0.94606588
4/30/2009 14:30	3016	1.377544	22.061462	3.180707	0.94595852
4/30/2009 14:30	3017	1.378784	22.060455	3.18357	0.94680999
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4/30/2009 14:30	3020	1.377857	22.05954	3.18143	0.94617354
4/30/2009 14:30	3021	1.378323	22.061951	3.182504	0.94649295
4/30/2009 14:30	3022	1.378639	22.058533	3.183235	0.94671036
4/30/2009 14:30	3023	1.377602	22.05954	3.18084	0.94599807
4/30/2009 14:30	3024	1.377754	22.061462	3.181192	0.94610276
4/30/2009 14:30	3025	1.377544	22.057098	3.180707	0.94595852
4/30/2009 14:30	3026	1.377346	22.059021	3.180249	0.94582231
4/30/2009 14:30	3027	1.378067	22.058044	3.181914	0.94631749

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4/30/2009 14:30	3029	1.376471	22.056091	3.178228	0.94522125
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4/30/2009 14:30	3031	1.377964	22.060455	3.181676	0.9462467
4/30/2009 14:30	3032	1.378271	22.057526	3.182385	0.94645756
4/30/2009 14:30	3033	1.378994	22.060028	3.184054	0.94695393
4/30/2009 14:30	3034	1.377293	22.059021	3.180126	0.94578572
4/30/2009 14:30	3035	1.378426	22.058044	3.182742	0.94656374
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4/30/2009 14:30	3038	1.377655	22.05954	3.180963	0.94603465
4/30/2009 14:30	3039	1.378523	22.05954	3.182967	0.94663065
4/30/2009 14:30	3040	1.37817	22.060974	3.182152	0.94638827
4/30/2009 14:30	3041	1.379047	22.059021	3.184178	0.94699081
4/30/2009 14:30	3042	1.378323	22.060455	3.182504	0.94649295
4/30/2009 14:30	3043	1.379196	22.05954	3.184521	0.94709282
4/30/2009 14:30	3044	1.378891	22.059021	3.183816	0.94688315
4/30/2009 14:30	3045	1.37966	22.05954	3.185591	0.94741104
4/30/2009 14:30	3046	1.379143	22.058533	3.184398	0.94705624
4/30/2009 14:30	3047	1.377392	22.057526	3.180355	0.94585383
4/30/2009 14:30	3048	1.379253	22.060455	3.184653	0.94713208
4/30/2009 14:30	3049	1.378426	22.060028	3.182742	0.94656374
4/30/2009 14:30	3050	1.377447	22.05661	3.180483	0.9458919
4/30/2009 14:30	3051	1.378578	22.05954	3.183094	0.94666842
4/30/2009 14:30	3052	1.378994	22.058533	3.184054	0.94695393
4/30/2009 14:30	3053	1.378523	22.05954	3.182967	0.94663065
4/30/2009 14:30	3054	1.378222	22.058044	3.182271	0.94642366
4/30/2009 14:30	3055	1.37817	22.060455	3.182152	0.94638827
4/30/2009 14:30	3056	1.377655	22.060455	3.180963	0.94603465
4/30/2009 14:30	3057	1.37698	22.056091	3.179404	0.945571
4/30/2009 14:30	3058	1.377346	22.058044	3.180249	0.94582231
4/30/2009 14:30	3059	1.376059	22.057098	3.177276	0.94493812
4/30/2009 14:31	3060	1.377293	22.060028	3.180126	0.94578572
4/30/2009 14:31	3061	1.377602	22.058533	3.18084	0.94599807
4/30/2009 14:31	3062	1.377655	22.062439	3.180963	0.94603465
4/30/2009 14:31	3063	1.376823	22.05661	3.179043	0.94546364
4/30/2009 14:31	3064	1.377346	22.055115	3.180249	0.94582231
4/30/2009 14:31	3065	1.377239	22.059021	3.180003	0.94574914
4/30/2009 14:31	3066	1.376112	22.059021	3.1774	0.944975
4/30/2009 14:31	3067	1.378119	22.057526	3.182033	0.94635288
4/30/2009 14:31	3068	1.37698	22.058044	3.179404	0.945571
4/30/2009 14:31	3069	1.376823	22.059021	3.179043	0.94546364
4/30/2009 14:31	3070	1.378523	22.059021	3.182967	0.94663065
4/30/2009 14:31	3071	1.377502	22.057526	3.18061	0.94592967
4/30/2009 14:31	3072	1.377392	22.05954	3.180355	0.94585383
4/30/2009 14:31	3073	1.375593	22.058533	3.176202	0.94461871
4/30/2009 14:31	3074	1.375744	22.059021	3.17655	0.9447222
4/30/2009 14:31	3075	1.377293	22.057526	3.180126	0.94578572
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4/30/2009 14:31	3078	1.376528	22.05954	3.17836	0.94526051
4/30/2009 14:31	3079	1.377392	22.058533	3.180355	0.94585383
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4/30/2009 14:31	3081	1.376877	22.05661	3.179166	0.94550022

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4/30/2009 14:31	3090	1.376823	22.056091	3.179043	0.94546364
4/30/2009 14:31	3091	1.37631	22.05661	3.177858	0.94511121
4/30/2009 14:31	3092	1.376059	22.060974	3.177276	0.94493812
4/30/2009 14:31	3093	1.378017	22.060455	3.1818	0.94628358
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4/30/2009 14:31	3097	1.37657	22.05661	3.178457	0.94528936
4/30/2009 14:31	3098	1.376677	22.058533	3.178704	0.94536281
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4/30/2009 14:31	3103	1.377188	22.057098	3.179884	0.94571375
4/30/2009 14:31	3104	1.377857	22.060455	3.18143	0.94617354
4/30/2009 14:31	3105	1.377392	22.056091	3.180355	0.94585383
4/30/2009 14:31	3106	1.377346	22.058533	3.180249	0.94582231
4/30/2009 14:31	3107	1.377602	22.058044	3.18084	0.94599807
4/30/2009 14:31	3108	1.376781	22.05661	3.178946	0.94543479
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4/30/2009 14:31	3113	1.377502	22.057526	3.18061	0.94592967
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4/30/2009 14:32	3129	1.377346	22.055603	3.180249	0.94582231
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4/30/2009 14:32	3134	1.376471	22.056091	3.178228	0.94522125
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4/30/2009 14:32	3144	1.37631	22.055115	3.177858	0.94511121
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4/30/2009 14:32	3149	1.376112	22.059021	3.1774	0.944975
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4/30/2009 14:32	3152	1.375744	22.056091	3.17655	0.9447222
4/30/2009 14:32	3153	1.376877	22.055603	3.179166	0.94550022
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4/30/2009 14:32	3164	1.375696	22.05661	3.17644	0.94468949
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4/30/2009 14:32	3170	1.375696	22.058533	3.17644	0.94468949
4/30/2009 14:32	3171	1.375744	22.054138	3.17655	0.9447222
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4/30/2009 14:33	3198	1.37631	22.05368	3.177858	0.94511121
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4/30/2009 14:33	3200	1.374769	22.05368	3.174299	0.94405275
4/30/2009 14:33	3201	1.37487	22.052216	3.174533	0.94412234
4/30/2009 14:33	3202	1.375338	22.054138	3.175612	0.94444324
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4/30/2009 14:44	3879	1.364063	22.038055	3.14958	0.93670119
4/30/2009 14:44	3880	1.362932	22.041504	3.146968	0.93592437
4/30/2009 14:44	3881	1.363647	22.039063	3.14862	0.93641568
4/30/2009 14:44	3882	1.363701	22.041046	3.148743	0.93645226
4/30/2009 14:44	3883	1.363493	22.039581	3.148263	0.93630951
4/30/2009 14:44	3884	1.364475	22.039581	3.150531	0.93698402
4/30/2009 14:44	3885	1.362825	22.039581	3.146722	0.9358512
4/30/2009 14:44	3886	1.363131	22.039581	3.147426	0.93606058
4/30/2009 14:44	3887	1.362104	22.037109	3.145057	0.93535603
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4/30/2009 14:44	3889	1.363131	22.038055	3.147426	0.93606058
4/30/2009 14:44	3890	1.364271	22.039063	3.15006	0.93684394
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4/30/2009 14:44	3894	1.363338	22.040009	3.147906	0.93620333
4/30/2009 14:44	3895	1.363493	22.037598	3.148263	0.93630951
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4/30/2009 14:45	3900	1.362709	22.039063	3.146453	0.9357712
4/30/2009 14:45	3901	1.362774	22.039581	3.146603	0.93581581
4/30/2009 14:45	3902	1.361134	22.038055	3.142815	0.93468924
4/30/2009 14:45	3903	1.362722	22.039063	3.146484	0.93578042
4/30/2009 14:45	3904	1.363806	22.039581	3.148985	0.93652423
4/30/2009 14:45	3905	1.362207	22.039063	3.145295	0.93542681
4/30/2009 14:45	3906	1.363188	22.041046	3.147558	0.93609984
4/30/2009 14:45	3907	1.362104	22.038544	3.145057	0.93535603
4/30/2009 14:45	3908	1.361902	22.037598	3.14459	0.93521714
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4/30/2009 14:45	3913	1.363089	22.038544	3.147329	0.93603173
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4/30/2009 14:45	3922	1.362316	22.037109	3.145546	0.93550146
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4/30/2009 14:45	3939	1.362316	22.035156	3.145546	0.93550146
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4/30/2009 14:45	3954	1.362932	22.040527	3.146968	0.93592437
4/30/2009 14:45	3955	1.362617	22.039063	3.146242	0.93570845
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4/30/2009 14:45	3957	1.362932	22.037598	3.146968	0.93592437
4/30/2009 14:45	3958	1.362932	22.036133	3.146968	0.93592437
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4/30/2009 14:48	4101	1.361071	22.036133	3.14267	0.93464612
4/30/2009 14:48	4102	1.359116	22.033722	3.138156	0.93330363
4/30/2009 14:48	4103	1.359894	22.033722	3.139953	0.93383807
4/30/2009 14:48	4104	1.36021	22.035156	3.140684	0.93405547
4/30/2009 14:48	4105	1.359428	22.035156	3.138878	0.93351836
4/30/2009 14:48	4106	1.360657	22.035156	3.141714	0.9343618
4/30/2009 14:48	4107	1.360304	22.03421	3.140899	0.93411941

4/30/2009 14:48	4108	1.359949	22.036133	3.14008	0.93387584
4/30/2009 14:48	4109	1.359795	22.031281	3.139724	0.93376996
4/30/2009 14:48	4110	1.360619	22.033722	3.141626	0.93433563
4/30/2009 14:48	4111	1.359734	22.035156	3.139583	0.93372803
4/30/2009 14:48	4112	1.359022	22.034668	3.13794	0.93323939
4/30/2009 14:48	4113	1.359167	22.033722	3.138275	0.93333902
4/30/2009 14:48	4114	1.359894	22.035156	3.139953	0.93383807
4/30/2009 14:48	4115	1.359734	22.032745	3.139583	0.93372803
4/30/2009 14:48	4116	1.358757	22.03421	3.137328	0.93305738
4/30/2009 14:48	4117	1.360353	22.038544	3.141014	0.93415362
4/30/2009 14:48	4118	1.360048	22.032745	3.140309	0.93394395
4/30/2009 14:48	4119	1.359842	22.035156	3.139834	0.93380268
4/30/2009 14:48	4120	1.359636	22.035645	3.139358	0.93366111
4/30/2009 14:48	4121	1.358702	22.033234	3.1372	0.93301931
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4/30/2009 14:48	4124	1.359022	22.036621	3.13794	0.93323939
4/30/2009 14:48	4125	1.35881	22.034668	3.137451	0.93309396
4/30/2009 14:48	4126	1.359842	22.03421	3.139834	0.93380268
4/30/2009 14:48	4127	1.360775	22.035156	3.141987	0.93444299
4/30/2009 14:48	4128	1.359537	22.031281	3.139129	0.93359301
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4/30/2009 14:48	4131	1.358448	22.033234	3.136614	0.93284503
4/30/2009 14:48	4132	1.359226	22.035156	3.138411	0.93337947
4/30/2009 14:48	4133	1.360094	22.034668	3.140415	0.93397547
4/30/2009 14:48	4134	1.360567	22.036621	3.141507	0.93430024
4/30/2009 14:48	4135	1.358091	22.033234	3.135791	0.93260027
4/30/2009 14:48	4136	1.360353	22.03421	3.141014	0.93415362
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4/30/2009 14:48	4138	1.359688	22.03421	3.139477	0.9336965
4/30/2009 14:48	4139	1.360048	22.036621	3.140309	0.93394395
4/30/2009 14:49	4140	1.359226	22.037598	3.138411	0.93337947
4/30/2009 14:49	4141	1.35881	22.037109	3.137451	0.93309396
4/30/2009 14:49	4142	1.360775	22.032745	3.141987	0.93444299
4/30/2009 14:49	4143	1.358967	22.031769	3.137812	0.93320133
4/30/2009 14:49	4144	1.359688	22.038055	3.139477	0.9336965
4/30/2009 14:49	4145	1.358967	22.036621	3.137812	0.93320133
4/30/2009 14:49	4146	1.359795	22.03421	3.139724	0.93376996
4/30/2009 14:49	4147	1.36021	22.035156	3.140684	0.93405547
4/30/2009 14:49	4148	1.361181	22.035156	3.142925	0.93472196
4/30/2009 14:49	4149	1.360149	22.035156	3.140543	0.93401354
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4/30/2009 14:49	4151	1.359537	22.032227	3.139129	0.93359301
4/30/2009 14:49	4152	1.360048	22.036621	3.140309	0.93394395
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4/30/2009 14:49	4154	1.360718	22.033234	3.141855	0.93440373
4/30/2009 14:49	4155	1.36021	22.034668	3.140684	0.93405547
4/30/2009 14:49	4156	1.360922	22.033722	3.142326	0.93454381
4/30/2009 14:49	4157	1.359537	22.035645	3.139129	0.93359301
4/30/2009 14:49	4158	1.360405	22.033234	3.141133	0.93418901
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4/30/2009 14:49	4161	1.360619	22.031769	3.141626	0.93433563

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4/30/2009 14:49	4170	1.359688	22.035645	3.139477	0.9336965
4/30/2009 14:49	4171	1.359636	22.034668	3.139358	0.93366111
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4/30/2009 14:49	4177	1.360506	22.033234	3.141366	0.9342583
4/30/2009 14:49	4178	1.359894	22.031769	3.139953	0.93383807
4/30/2009 14:49	4179	1.36021	22.03421	3.140684	0.93405547
4/30/2009 14:49	4180	1.359226	22.03421	3.138411	0.93337947
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4/30/2009 14:49	4185	1.360048	22.035645	3.140309	0.93394395
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4/30/2009 14:50	4220	1.359842	22.034668	3.139834	0.93380268
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4/30/2009 14:52	4323	1.358189	22.029816	3.136015	0.93266689

4/30/2009 14:52	4324	1.357212	22.032227	3.13376	0.93199624
4/30/2009 14:52	4325	1.357473	22.031769	3.134364	0.93217587
4/30/2009 14:52	4326	1.357416	22.031769	3.134232	0.93213661
4/30/2009 14:52	4327	1.357887	22.030304	3.13532	0.93246019
4/30/2009 14:52	4328	1.357523	22.029297	3.134479	0.93221007
4/30/2009 14:52	4329	1.357212	22.033722	3.13376	0.93199624
4/30/2009 14:52	4330	1.357729	22.030304	3.134954	0.93235134
4/30/2009 14:52	4331	1.356909	22.033234	3.13306	0.93178806
4/30/2009 14:52	4332	1.357161	22.031769	3.133642	0.93196115
4/30/2009 14:52	4333	1.357212	22.034668	3.13376	0.93199624
4/30/2009 14:52	4334	1.357832	22.031281	3.135192	0.93242212
4/30/2009 14:52	4335	1.357372	22.034668	3.13413	0.93210628
4/30/2009 14:52	4336	1.356758	22.030304	3.132713	0.93168486
4/30/2009 14:52	4337	1.355928	22.033234	3.130797	0.93111503
4/30/2009 14:52	4338	1.357523	22.032745	3.134479	0.93221007
4/30/2009 14:52	4339	1.355412	22.032227	3.129603	0.93075993
4/30/2009 14:52	4340	1.357212	22.032227	3.13376	0.93199624
4/30/2009 14:52	4341	1.356758	22.031769	3.132713	0.93168486
4/30/2009 14:52	4342	1.356394	22.030304	3.131871	0.93143444
4/30/2009 14:52	4343	1.357473	22.031281	3.134364	0.93217587
4/30/2009 14:52	4344	1.356758	22.031281	3.132713	0.93168486
4/30/2009 14:52	4345	1.357117	22.030304	3.13354	0.93193081
4/30/2009 14:52	4346	1.357937	22.030304	3.135434	0.9324941
4/30/2009 14:52	4347	1.357473	22.028809	3.134364	0.93217587
4/30/2009 14:52	4348	1.356649	22.029816	3.132461	0.93160991
4/30/2009 14:52	4349	1.358398	22.028809	3.1365	0.93281113
4/30/2009 14:52	4350	1.357628	22.032227	3.134721	0.93228205
4/30/2009 14:52	4351	1.357832	22.031281	3.135192	0.93242212
4/30/2009 14:52	4352	1.357729	22.031769	3.134954	0.93235134
4/30/2009 14:52	4353	1.35701	22.033722	3.133294	0.93185765
4/30/2009 14:52	4354	1.356909	22.032227	3.13306	0.93178806
4/30/2009 14:52	4355	1.357937	22.031281	3.135434	0.9324941
4/30/2009 14:52	4356	1.357832	22.031769	3.135192	0.93242212
4/30/2009 14:52	4357	1.357729	22.031769	3.134954	0.93235134
4/30/2009 14:52	4358	1.358448	22.030792	3.136614	0.93284503
4/30/2009 14:52	4359	1.357937	22.027374	3.135434	0.9324941
4/30/2009 14:52	4360	1.35825	22.032227	3.136156	0.93270882
4/30/2009 14:52	4361	1.356758	22.031281	3.132713	0.93168486
4/30/2009 14:52	4362	1.357212	22.031281	3.13376	0.93199624
4/30/2009 14:52	4363	1.359116	22.030792	3.138156	0.93330363
4/30/2009 14:52	4364	1.357264	22.033722	3.133879	0.93203163
4/30/2009 14:52	4365	1.356445	22.030792	3.13199	0.93146983
4/30/2009 14:52	4366	1.358189	22.03421	3.136015	0.93266689
4/30/2009 14:52	4367	1.35725	22.036133	3.133849	0.93202271
4/30/2009 14:52	4368	1.358139	22.033234	3.135901	0.93263298
4/30/2009 14:52	4369	1.373119	22.032745	3.17049	0.94291993
4/30/2009 14:52	4370	1.396345	22.029297	3.224118	0.95886917
4/30/2009 14:52	4371	1.39469	22.030792	3.220295	0.95773219
4/30/2009 14:52	4372	1.38048	22.031769	3.187485	0.94797433
4/30/2009 14:52	4373	1.382334	22.029816	3.191766	0.94924752
4/30/2009 14:52	4374	1.383987	22.029816	3.195584	0.95038301
4/30/2009 14:52	4375	1.387383	22.031281	3.203423	0.95271437
4/30/2009 14:52	4376	1.389439	22.02832	3.208171	0.95412645
4/30/2009 14:52	4377	1.388519	22.030304	3.206048	0.95349506

4/30/2009 14:52	4378	1.388258	22.029297	3.205445	0.95331572
4/30/2009 14:52	4379	1.387383	22.03421	3.203423	0.95271437
4/30/2009 14:53	4380.47	1.388994	22.045868	3.207144	0.95382102
4/30/2009 14:53	4381.235	1.385805	22.058044	3.199781	0.95163122
4/30/2009 14:53	4382	1.385792	22.044403	3.19975	0.951622
4/30/2009 14:53	4383	1.384296	22.040527	3.196298	0.95059536
4/30/2009 14:53	4384	1.383123	22.039063	3.193589	0.94978969
4/30/2009 14:53	4385	1.381516	22.035156	3.189877	0.94868572
4/30/2009 14:53	4386	1.380949	22.033722	3.188569	0.94829672
4/30/2009 14:53	4387	1.381004	22.032227	3.188696	0.94833449
4/30/2009 14:53	4388	1.378935	22.032745	3.183918	0.94691349
4/30/2009 14:53	4389	1.378891	22.031769	3.183816	0.94688315
4/30/2009 14:53	4390	1.378271	22.032227	3.182385	0.94645756
4/30/2009 14:53	4391	1.377964	22.030792	3.181676	0.9462467
4/30/2009 14:53	4392	1.376877	22.033234	3.179166	0.94550022
4/30/2009 14:53	4393	1.375696	22.033234	3.17644	0.94468949
4/30/2009 14:53	4394	1.376745	22.03421	3.178862	0.9454098
4/30/2009 14:53	4395	1.375263	22.031281	3.17544	0.94439208
4/30/2009 14:53	4396	1.375	22.035156	3.174832	0.94421126
4/30/2009 14:53	4397	1.37645	22.033722	3.17818	0.94520697
4/30/2009 14:53	4398	1.375443	22.029816	3.175854	0.94451521
4/30/2009 14:53	4399.056	1.375217	22.027374	3.175334	0.94436056
4/30/2009 14:53	4400	1.372192	22.033234	3.16835	0.94228348
4/30/2009 14:53	4401	1.371992	22.035645	3.167887	0.94214578
4/30/2009 14:53	4402	1.373487	22.032745	3.17134	0.94317272
4/30/2009 14:53	4403	1.372349	22.033234	3.168711	0.94239085
4/30/2009 14:53	4404	1.371838	22.032745	3.167531	0.94203991
4/30/2009 14:53	4405	1.371014	22.033722	3.165628	0.94147395
4/30/2009 14:53	4406	1.371992	22.031769	3.167887	0.94214578
4/30/2009 14:53	4407	1.370344	22.032227	3.164082	0.94101416
4/30/2009 14:53	4408	1.369158	22.037109	3.161343	0.94019956
4/30/2009 14:53	4409	1.371473	22.031769	3.166689	0.94178949
4/30/2009 14:53	4410	1.371269	22.032745	3.166218	0.94164941
4/30/2009 14:53	4411	1.369158	22.036133	3.161343	0.94019956
4/30/2009 14:53	4412	1.372728	22.032745	3.169587	0.94265137
4/30/2009 14:53	4413	1.371319	22.033722	3.166332	0.94168332
4/30/2009 14:53	4414	1.370914	22.03421	3.165399	0.94140584
4/30/2009 14:53	4415	1.369822	22.035156	3.162875	0.94065519
4/30/2009 14:53	4416	1.37211	22.036621	3.16816	0.94222698
4/30/2009 14:53	4417	1.370581	22.079956	3.164628	0.94117654
4/30/2009 14:53	4418.099	1.369289	22.045868	3.161647	0.94028998
4/30/2009 14:53	4419	1.36902	22.039581	3.161026	0.94010529
4/30/2009 14:53	4420	1.368191	22.039063	3.15911	0.93953546
4/30/2009 14:53	4421.094	1.370117	22.035156	3.163558	0.94085832
4/30/2009 14:53	4422	1.369289	22.036621	3.161647	0.94028998
4/30/2009 14:53	4423	1.369343	22.036133	3.16177	0.94032656
4/30/2009 14:53	4424	1.368608	22.031281	3.160074	0.93982216
4/30/2009 14:53	4425.109	1.368828	22.033722	3.160581	0.93997294
4/30/2009 14:53	4426	1.368156	22.035156	3.159031	0.93951196
4/30/2009 14:53	4427	1.367903	22.035645	3.158445	0.93933768
4/30/2009 14:53	4428	1.366652	22.035645	3.155556	0.93847848
4/30/2009 14:53	4429.113	1.367113	22.03421	3.156622	0.93879552
4/30/2009 14:53	4430	1.367538	22.035156	3.157604	0.93908757
4/30/2009 14:53	4431	1.367538	22.035645	3.157604	0.93908757

4/30/2009 14:53	4432	1.367903	22.032227	3.158445	0.93933768
4/30/2009 14:53	4433	1.375006	22.034668	3.174845	0.94421513
4/30/2009 14:53	4434.042	1.366508	22.046844	3.155226	0.93838034
4/30/2009 14:53	4435	1.366568	22.04248	3.155362	0.93842078
4/30/2009 14:53	4436	1.365789	22.038544	3.153565	0.93788635
4/30/2009 14:53	4437	1.365067	22.038544	3.151896	0.93738998
4/30/2009 14:53	4438.056	1.366047	22.051727	3.15416	0.9380633
4/30/2009 14:53	4439	1.366098	22.042969	3.154279	0.9380987
4/30/2009 14:54	4440	1.366871	22.040527	3.156062	0.93862897
4/30/2009 14:54	4441	1.366568	22.039063	3.155362	0.93842078
4/30/2009 14:54	4442	1.365635	22.052704	3.153209	0.93778047
4/30/2009 14:54	4443	1.36437	22.044891	3.150289	0.93691205
4/30/2009 14:54	4444	1.364985	22.041046	3.151707	0.93733377
4/30/2009 14:54	4445	1.364216	22.041046	3.149932	0.93680588
4/30/2009 14:54	4446	1.365452	22.042969	3.152786	0.93765467
4/30/2009 14:54	4447	1.364943	22.038055	3.15161	0.93730492
4/30/2009 14:54	4448	1.363752	22.040009	3.148862	0.93648765
4/30/2009 14:54	4449	1.364576	22.038055	3.150764	0.93705332
4/30/2009 14:54	4450	1.365141	22.038544	3.152068	0.93744113
4/30/2009 14:54	4451	1.364063	22.041046	3.14958	0.93670119
4/30/2009 14:54	4452	1.36417	22.039581	3.149827	0.93677465
4/30/2009 14:54	4453	1.362873	22.037598	3.146832	0.93588392
4/30/2009 14:54	4454	1.365259	22.037598	3.152341	0.93752232
4/30/2009 14:54	4455	1.363493	22.037598	3.148263	0.93630951
4/30/2009 14:54	4456	1.364216	22.036621	3.149932	0.93680588
4/30/2009 14:54	4457	1.363447	22.039063	3.148157	0.93627798
4/30/2009 14:54	4458	1.364489	22.040009	3.150562	0.93699324
4/30/2009 14:54	4459	1.363394	22.040527	3.148034	0.9362414
4/30/2009 14:54	4460.003	1.369741	22.038055	3.162691	0.94060047
4/30/2009 14:54	4461	1.361589	22.039581	3.143868	0.93500241
4/30/2009 14:54	4462	1.362825	22.037109	3.146722	0.9358512
4/30/2009 14:54	4463	1.363338	22.039063	3.147906	0.93620333
4/30/2009 14:54	4464	1.363785	22.038544	3.148937	0.93650996
4/30/2009 14:54	4465	1.362539	22.039581	3.146061	0.93565462
4/30/2009 14:54	4466	1.363884	22.035645	3.149166	0.93657806
4/30/2009 14:54	4467	1.365332	22.039581	3.152508	0.93757199
4/30/2009 14:54	4468	1.362774	22.041046	3.146603	0.93581581
4/30/2009 14:54	4469	1.363956	22.039581	3.149333	0.93662773
4/30/2009 14:54	4470	1.362522	22.039063	3.146021	0.93564272
4/30/2009 14:54	4471	1.361845	22.039581	3.144458	0.93517788
4/30/2009 14:54	4472	1.362984	22.038544	3.147087	0.93595976
4/30/2009 14:54	4473	1.362253	22.039581	3.1454	0.93545804
4/30/2009 14:54	4474	1.363752	22.037109	3.148862	0.93648765
4/30/2009 14:54	4475	1.362364	22.04248	3.145656	0.93553417
4/30/2009 14:54	4476	1.362873	22.040527	3.146832	0.93588392
4/30/2009 14:54	4477	1.361952	22.038544	3.144705	0.93525134
4/30/2009 14:54	4478	1.362825	22.040527	3.146722	0.9358512
				3.362417	1

Appendix G

Product Recovery Test Data

ARCADIS
Appendix G. Well Construction Details
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Name	Elevation Casing (new survey data 02/11/2010)	Ground Elevation (new survey data 02/11/2010)	Stickup (new survey data 02/11/2010)	well diameter	top of filter screen	bottom of filter screen	Filter screen length	Total depth
	(ft)	(ft)	(ft)	(inch)	(ft bgs)	(ft bgs)	(ft)	(ft bgs)
HVW-1	3963.45	3963.72	-0.28	4.0	15.0	20.0	5.0	20.0
HVW-2	3962.62	3963.35	-0.73	4.0	31.0	36.0	5.0	36.0
HVW-3	3963.36	3963.71	-0.36	4.0	31.0	36.0	5.0	36.0
HVW-4	3963.12	3963.49	-0.38	4.0	31.0	36.0	5.0	36.0
HVW-5	3963.13	3963.65	-0.52	2.0	30.0	35.0	5.0	35.0
HVW-6	3963.08	3963.67	-0.59	no data	no data	no data	no data	no data
HVW-7	3962.93	3963.46	-0.53	4.0	17.0	22.0	5.0	22.0
HVW-8	3962.75	3963.41	-0.67	2.0	25.0	30.0	5.0	30.0
HVW-9	3961.57	3963.52	-1.95	4.0	17.0	22.0	5.0	22.0
HVW-10	3963.21	3963.70	-0.48	1 (casing) 2 (filter)	29.5	31.0	1.5	31.0

Data sources: HVW-5, HVW-7 through HVW-10 and Well survey data from (TSA_WellData.xlsx)
New survey data from ZIA LC, 02/11/2010

ARCADIS
Appendix G. March 22, 2010 Comprehensive Water and Product Measurements
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Well		Depth to water and free phase thickness measurement			
		Date and Time	Depth to water/air interface	Depth to water/phase interface	Free phase thickness
		(mm/dd/yy hh:mm)	(ftbc)	(ftbc)	(feet)
HVW-1	measurement when lowering the probe	3/22/10 0951	20.66	20.65	0.01
	measurement when lifting the probe	3/22/10 0952	20.66	20.65	0.01
HVW-2	measurement when lowering the probe	3/22/10 1007	29.08	ND	ND
	measurement when lifting the probe	3/22/10 1007	29.08	ND	ND
HVW-3	measurement when lowering the probe	3/22/10 0943	29.8	29.75	0.05
	measurement when lifting the probe	3/22/10 0943	29.8	29.75	0.05
HVW-4	measurement when lowering the probe	3/22/10 0956	29.43	29.42	0.01
	measurement when lifting the probe	3/22/10 0957	29.43	29.42	0.01
HVW-5	measurement when lowering the probe	3/22/10 1000	29.62	29.4	0.22
	measurement when lifting the probe	3/22/10 1002	29.6	29.59	0.01
HVW-6	measurement when lowering the probe	3/22/10 1003	28.86	28.85	0.01
	measurement when lifting the probe	3/22/10 1003	28.85	28.85	ND
HVW-7	measurement when lowering the probe	3/22/10 1009	Dry	ND	ND
	measurement when lifting the probe	3/22/10 1009	Dry	ND	ND
HVW-8	measurement when lowering the probe	3/22/10 1011	29.45	29.01	0.44
	measurement when lifting the probe	3/22/10 1012	29.45	29.23	0.22
HVW-9	measurement when lowering the probe	3/22/10 0954	Dry	ND	ND
	measurement when lifting the probe	3/22/10 0955	Dry	ND	ND
HVW-10	measurement when lowering the probe	3/22/10 1005	29.56	29.25	0.31
	measurement when lifting the probe	3/22/10 1006	29.56	29.23	0.33

Notes:
ftbc - feet below casing

ARCADIS
Appendix G. March 22, 2010 GeoSorb Monitoring and Product Bailing
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Name	well diameter	top of filter screen	bottom of filter screen	Filter screen length	Date and Time of Installation	Depth to water/ phase interface [take from Table 2, measurement when lowering probe]	Depth of installation (1)		Estimated Recovered Height or Volume of Product Recovered (2)	Remarks
							upper end of sock	lower end of sock		
	(inch)	(ft bgs)	(ft bgs)	(ft)	(mm/dd/yy hh:mm)	(ft below well casing)	(ft below well casing)	(ft below well casing)	(inches or mL) (2)	
HVW-3	4.0	31.0	36.0	5.0	03/22/10 1030	DTW 29.80	29.3	32.3		0.05 ft product in well
HVW-5	2.0	30.0	35.0	5.0	03/22/10 1055	DTW 29.62	29.1	32.1		0.22 ft product in well
HVW-8	2.0	25.0	30.0	5.0	03/22/10 1110	DTW 29.45	26.75	29.75		TD = 29.75
HVW-10	1 (casing) 2 (filter)	29.5	31.0	1.5	03/22/10 1120-1200	DTW 29.56	N/A	N/A	prox. 0.3 feet; 50 mL	Bailed

Notes:
(1) Install in a way that the upper end of sock is located at a minimum 0.5 ft above the measured water table
(2) For estimation of product recovered: HVW-03, HVW-05 and HVW-08 will be estimated by inches of product contained in the Geosorb sock while product recovered from HVW-10 with a bailer will be estimated by measurement with a graduate cylinder
N/A - Not Applicable

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Appendix G. March 29, 2010 GeoSorb Monitoring and Product Bailing
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Name	well diameter	top of filter screen	bottom of filter screen	Filter screen length	Date and Time of Installation	Depth to Product [take from Table 2, measurement when lowering probe]	Depth of installation (1)		Estimated Recovered Height or Volume of Product Recovered (2)	Remarks
							upper end of sock	lower end of sock		
	(inch)	(ft bgs)	(ft bgs)	(ft)	(mm/dd/yy hh:mm)	(ft below well casing)	(ft below well casing)	(ft below well casing)	(inches or mL) (2)	
HVW-3	4.0	31.0	36.0	5.0	03/22/10 1030	DTP 29.75	29.3	32.3	stain on geosorb 0.4 feet (4.8 inches) in length.	0.05 ft product in well. On 3-29-10 pulled geosorb out at 1015. Sock had fallen in geosurb sleeve over the week. New sock placed in with zip tie to hold in place.
HVW-5	2.0	30.0	35.0	5.0	03/22/10 1055	DTP 29.40	29.1	32.1	stain on geosorb 1.4 feet (16.8 inches) in length.	0.22 ft product in well. On 3-29-10 pulled geosorb out at 1045.
HVW-8	2.0	25.0	30.0	5.0	03/22/10 1110	DTP 29.01	26.75	29.75	stain on geosorb 0.05 feet (0.6 inches) in length.	TD = 29.75. On 3-29-10, pulled geosorb out at 1030.
HVW-10	1 (casing) 2 (filter)	29.5	31.0	1.5	03/22/10 1120-1200	DTP 29.25	N/A	N/A	approx. 0.3 feet; 50 mL	Bailed

Notes:
(1) Install in a way that the upper end of sock is located, at a minimum, 0.5 ft above the measured product level
(2) For estimation of product recovered: HVW-03, HVW-05 and HVW-08 will be estimated by inches of product contained in the Geosorb sock while product recovered from HVW-10 with a bailer will be estimated by measurement with a graduate cylinder
N/A - Not Applicable

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Appendix G. April 05, 2010 Comprehensive Water and Product Measurements
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Well		Depth to water and free phase thickness measurement directly after withdrawl of the geosorb socks/ bailing of the well				Depth to water and free phase thickness measurement before leaving the field / bailing of the well			
		Date and Time	DTW Depth to water/air interface	DTP Depth to water/phase interface	Free phase thickness	Date and Time	Depth to water/air interface	Depth to water/phase interface	Free phase thickness
		(mm/dd/yy hh:mm)	(ftbc)	(ftbc)	(feet)	(mm/dd/yy hh:mm)	(ftbc)	(ftbc)	(feet)
HVW-1	measurement when lowering the probe	04/05/10 1040	20.64	ND	ND	04/05/10 1220	20.64	ND	ND
	measurement when lifting the probe	04/05/10 1040	20.64	ND	ND	04/05/10 1220	20.64	ND	ND
HVW-2	measurement when lowering the probe	04/05/10 1042	28.91	ND	ND	04/05/10 1226	28.91	ND	ND
	measurement when lifting the probe	04/05/10 1042	28.91	ND	ND	04/05/10 1226	28.91	ND	ND
HVW-3	measurement when lowering the probe	04/05/10 0945	29.8	ND	ND	04/05/10 1217	29.65	ND	ND
	measurement when lifting the probe	04/05/10 0946	29.8	ND	ND	04/05/10 1217	29.65	ND	ND
HVW-4	measurement when lowering the probe	04/05/10 1036	29.37	ND	ND	04/05/10 1222	29.35	ND	ND
	measurement when lifting the probe	04/05/10 1036	29.37	ND	ND	04/05/10 1222	29.35	ND	ND
HVW-5	measurement when lowering the probe	04/05/10 1013	29.8	ND	ND	04/05/10 1227	29.39	29.37	0.02
	measurement when lifting the probe	04/05/10 1013	29.8	ND	ND	04/05/10 1227	29.39	29.37	0.02
HVW-6	measurement when lowering the probe	04/05/10 1035	26.85	ND	ND	04/05/10 1230	26.87	ND	ND
	measurement when lifting the probe	04/05/10 1035	26.85	ND	ND	04/05/10 1230	26.87	ND	ND
HVW-7	measurement when lowering the probe	04/05/10 1045	Dry	ND	ND	04/05/10 1225	Dry	ND	ND
	measurement when lifting the probe	04/05/10 1045	Dry	ND	ND	04/05/10 1225	Dry	ND	ND
HVW-8	measurement when lowering the probe	04/05/10 0956	29.16	29.07	0.09	04/05/10 1223	29.15	29	0.15
	measurement when lifting the probe	04/05/10 0957	29.16	29.15	0.01	04/05/10 1223	29.15	29.14	0.01
HVW-9	measurement when lowering the probe	04/05/10 1038	Dry	ND	ND	04/05/10 1221	Dry	ND	ND
	measurement when lifting the probe	04/05/10 1038	Dry	ND	ND	04/05/10 1221	Dry	ND	ND
HVW-10	measurement when lowering the probe	04/05/10 0925	29.6	29.22	0.38	04/05/10 1231	29.31	29.41	0.1
	measurement when lifting the probe	04/05/10 0925	29.6	29.59	0.01	04/05/10 1231	29.37	29.41	0.04

Notes:
ftbc - feet below casing

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Appendix G. April 05, 2010 GeoSorb Monitoring and Product Bailing
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Name	well diameter	top of filter screen	bottom of filter screen	Filter screen length	Date and Time of Installation	Depth to Product [take from Table 2, measurement when lowering probe]	Depth of installation (1)		Estimated Recovered Height or Volume of Product Recovered (2)	Remarks
							upper end of sock	lower end of sock		
	(inch)	(ft bgs)	(ft bgs)	(ft)	(mm/dd/yy hh:mm)	(ft below well casing)	(ft below well casing)	(ft below well casing)	(inches or mL) (2)	
HVW-3	4.0	31.0	36.0	5.0	03/29/10 1025	n/a	29.3	32.3	none.	4-5-10/0935 - 1.5 feet of sock was 'wetted' measured from bottom of sock. Weight of dry sock - 4 inch = 270 g. Weight of wet sock pulled from well 400 grams. Squeezed fluid into graduated cylinder (approx 50 mL). No product on cylinder. Weight after: appprox. 400 grams. Weighed in 1 gallon zip loc bag.
HVW-5	2.0	30.0	35.0	5.0	03/29/10 1055	n/a	29.1	32.1	none.	4-5-10/1020 - 1.5 feet of sock was 'wetted' measured from bottom of sock. Weight of dry sock - 2 inch = 185 g. Weight of wet sock pulled from well approx. 480 grams. Squeezed fluid into graduated cylinder (approx 150 mL). No product. 150 mL water in cylinder. Weight after: appprox. 380 grams.
HVW-8	2.0	25.0	30.0	5.0	03/29/10 1040	n/a	26.75	29.75	150 mL	4-5-10/1000 - visible stain 1.55 ft to 1.95 ft as measured from bottom of sock. Weight of dry sock - 2 inch = 185 g. Weight of wet sock pulled from well approx. 450 grams. Squeezed fluid into graduated cylinder (approx 150 mL). No water. 150 mL free product in cylinder. Weight after: appprox. 380 grams.
HVW-10	1 (casing) 2 (filter)	29.5	31.0	1.5	n/a	n/a	N/A	N/A	85 mL	4-5-10/1047. Bailed HVW-10. Removed 1,000 mL of liquid. Approx. 85 mL of free product.

Notes:
(1) Install in a way that the upper end of sock is located, at a minimum, 0.5 ft above the measured product level
(2) For estimation of product recovered: HVW-03, HVW-05 and HVW-08 will be estimated by inches of product contained in the Geosorb sock while product recovered from HVW-10 with a bailer will be estimated by measurement with a graduate cylinder
N/A - Not Applicable

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Appendix G. April 12, 2010 Comprehensive Water and Product Measurements
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Well		Depth to water and free phase thickness measurement			
		Date and Time	Depth to Product	Depth to Water	Free phase thickness
		(mm/dd/yy hh:mm)	(ftbc)	(ftbc)	(feet)
HVW-1	measurement when lowering the probe	4-12-10 1115	ND	20.64	ND
	measurement when lifting the probe	4-12-10 1116	ND	20.64	ND
HVW-2	measurement when lowering the probe	4-12-10 1127	29.04	29.05	0.01
	measurement when lifting the probe	4-12-10 1127	29.04	29.05	0.01
HVW-3	measurement when lowering the probe	4-12-10 1111	29.66	29.67	0.01
	measurement when lifting the probe	4-12-10 1111	29.66	29.67	0.01
HVW-4	measurement when lowering the probe	4-12-10 1134	ND	29.35	ND
	measurement when lifting the probe	4-12-10 1134	ND	29.35	ND
HVW-5	measurement when lowering the probe	4-12-10 1120	29.37	29.4	0.03
	measurement when lifting the probe	4-12-10 1120	29.38	29.4	0.02
HVW-6	measurement when lowering the probe	4-12-10 1122	ND	26.85	ND
	measurement when lifting the probe	4-12-10 1122	ND	26.85	ND
HVW-7	measurement when lowering the probe	4-12-10 1130	ND	Dry	ND
	measurement when lifting the probe	4-12-10 1130	ND	Dry	ND
HVW-8	measurement when lowering the probe	4-12-10 1132	29	29.2	0.2
	measurement when lifting the probe	4-12-10 1132	29.1	29.2	0.1
HVW-9	measurement when lowering the probe	4-12-10 1117	ND	Dry	ND
	measurement when lifting the probe	4-12-10 1117	ND	Dry	ND
HVW-10	measurement when lowering the probe	4-12-10 1125	29.15	29.42	0.27
	measurement when lifting the probe	4-12-10 1125	29.15	29.42	0.27

Notes:
ftbc - feet below casing

Site Name	WSMF TSA Facility	Test Well ID	HVW-05
Data Collector(s)	PZ and GG	Screen Opening (in)	0.01
Top of Casing Elevation (msl)	0	Filter Pack	10/20 sand
Total well depth (ft)	35	LNAPL Fraction in Filter	90%
Depth to top of screen (ft)	30	Bottom of Screen (ft)	35
Filter Pack Porosity (%)	40%	Effective Porosity (%)	36
Well Diameter (in)	2	Well Radius (ft)	0.08
Boring Diameter (in)	8.5	Boring Radius (ft)	0.35
Oil Density (g/cm)	0.741	Effective Radius(ft)	
		T/K Correction Factor	3.86

Initial Test Conditions (LNAPL)

Initial Depth to FP (ft)	29.69	Test Date	11/16/09
Initial Depth to Water (ft)	30.12	Start Time	11:52
Initial FP Thickness (ft)	0.43		

Intitial Test Conditions (Groundwater)

Initial DTW Uncorrected (ft)	30.12	Test Date	11/16/09
Initial FP Thickness (ft)	0.43	Start Time	11:52
Initial DTW, Potentiometric Surface (ft)	29.80	Initial Displacement H_0 (ft)	1.41
Static Water Column H (ft)	5.20	Depth to TOS d, below pot	0.20

Product Removal

Bailer I.D.	1.75	inches	
Borehole I.D.	8.5	inches	
Well I.D.	2	inches	
Intial product in well	0.28	inches	NAPL height after sampling but before starting baildown test
Initial Volume in well	0.9	inches^3	
Initial Volume in well	14.4	ml	
Filter Pack area	53.6	inches^2	borehole area minus well casing area
Initial product in well	0.28	inches	
Filter Pack volume	15.0	inches^3	
Assumed porosity of filter pa	35	%	
Initial product volume in filte	86.1	ml	
Total Volume, well + FP	**100.5**	**ml**	
Amt Bailed for Sample	250	ml	Sample was taken first thing prior to test because didn't know if product would recover enough after the test to sample
Amt Bailed	0.104	ft	in bailer
Volume Bailed	0.3	inches^3	
Volume Bailed	4.1	ml	

Baildown Test Data

Timestamp	Elapsed Time (min)	Depth to FP (ft)	Depth to Water (ft)	FP Thickness (ft)	LNAPL Drawdown (ft)	Depth to Potentiometric Surface (ft)	Potentiometric Displacement (ft)
11/16/2009 11:52	0.00	31.21	31.21	0.00	0.43	31.21	1.41
11/16/2009 11:55	3.00	31.10	31.11	0.01	0.42	31.10	1.30
11/16/2009 11:56	4.00	30.99	31.02	0.03	0.40	31.00	1.20
11/16/2009 11:57	5.00	30.90	30.99	0.09	0.34	30.92	1.12
11/16/2009 11:58	6.00	30.80	30.95	0.15	0.28	30.84	1.04
11/16/2009 11:59	7.00	30.72	30.92	0.20	0.23	30.77	0.97
11/16/2009 12:00	8.00	30.64	30.88	0.24	0.19	30.70	0.90
11/16/2009 12:01	9.00	30.59	30.84	0.25	0.18	30.65	0.85
11/16/2009 12:02	10.00	30.54	30.80	0.26	0.17	30.61	0.81
11/16/2009 12:04	12.00	30.49	30.76	0.27	0.16	30.56	0.76
11/16/2009 12:05	13.00	30.44	30.72	0.28	0.15	30.51	0.71
11/16/2009 12:06	14.00	30.40	30.69	0.29	0.14	30.48	0.67
11/16/2009 12:07	15.00	30.35	30.65	0.30	0.13	30.43	0.63
11/16/2009 12:08	16.00	30.32	30.62	0.30	0.13	30.40	0.60
11/16/2009 12:09	17.00	30.29	30.58	0.29	0.14	30.37	0.56
11/16/2009 12:14	22.00	30.13	30.43	0.30	0.13	30.21	0.41
11/16/2009 12:19	27.00	30.04	30.30	0.26	0.17	30.11	0.31
11/16/2009 12:24	32.00	29.97	30.22	0.25	0.18	30.03	0.23
11/16/2009 12:34	42.00	29.89	30.10	0.21	0.22	29.94	0.14
11/16/2009 12:44	52.00	29.81	30.01	0.20	0.23	29.86	0.06
11/16/2009 13:24	92.00	29.73	29.90	0.17	0.26	29.77	-0.03
11/16/2009 14:04	132.00	29.70	29.85	0.15	0.28	29.74	-0.06
11/16/2009 14:44	172.00	29.67	29.83	0.16	0.27	29.71	-0.09
11/16/2009 15:24	212.00	29.66	29.81	0.15	0.28	29.70	-0.10
11/16/2009 16:35	283.50	29.66	29.81	0.15	0.28	29.70	-0.10
11/17/2009 8:45	1253.00	29.68	29.89	0.21	0.22	29.73	-0.07

Well: HVW-05

Analysis: LNAPL

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		0.43	ft	
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		0.43	ft	
Static Water Column Height	H		0.43	ft	
Depth to TOS	d		30	ft	
Length of Well Screen	L		0.43	ft	
Inside Radius of Well Casing	r_c		0.08	ft	
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	Packer radius (0.35 ft) not used, email disc
Outer Radius of Well Skin	r_{sk}		0.35	ft	
Apply effective casing radius correction	---	✓		---	Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓		---	
Kinematic Viscosity	v		5.94E-07	m^2/sec	average from Density Results tab
Gravitational Acceleration	g		9.81E+00	m/sec^2	

AQTESOLV OUTPUT (not corrected):

Hydraulic Conductivity, Bouwer-Rice	K	3.53E-03	ft/min	
Transmissivity, Bouwer-Rice	T	1.52E-03	ft^2/min	
Hydraulic Conductivity, Cooper	K	3.84E-03	ft/min	Middle portion of curve fits data, otherwise not a good fit.
Transmissivity, Cooper	T	1.65E-03	ft^2/min	
S	S	4.03E-05	---	

Corrected T/K Values:

Hydraulic Conductivity, Bouwer-Rice	K	1.36E-02	ft/min
Transmissivity, Bouwer-Rice	T	5.86E-03	ft^2/min
Hydraulic Conductivity, Cooper	K	1.48E-02	ft/min
Transmissivity, Cooper	T	6.38E-03	ft^2/min

Data Import Into AQTESOLV:

Elapsed Time, Min	LNAPL Drawdown
3.00	0.42
4.00	0.40
5.00	0.34
6.00	0.28
7.00	0.23
8.00	0.19
9.00	0.18
10.00	0.17
12.00	0.16
13.00	0.15
14.00	0.14
15.00	0.13
16.00	0.13
17.00	0.14
22.00	0.13

Well: HVW-05

Analysis: Water

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		5.2	ft	
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		1.4	ft	
Static Water Column Height	H		5.19	ft	
Depth to TOS	d		0.19	ft	
Length of Well Screen	L		5	ft	
Inside Radius of Well Casing	r_c		0.08	ft	
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	Packer radius (0.35 ft) not used, email disc
Outer Radius of Well Skin	r_{sk}		0.35		
Apply effective casing radius correction	---	✓		---	Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓		---	
Kinematic Viscosity	v		3.89E-07	m^2/sec	
Gravitational Acceleration	g		9.81E+00	m/sec^2	

AQTESOLV OUTPUT (potentiometric water data not to be corrected):

Hydraulic Conductivity, Bouwer-Rice	K	1.22E-04	ft/min	Good linear fit.
Transmissivity, Bouwer-Rice	T	6.34E-04	ft^2/min	
Hydraulic Conductivity, Cooper	K	2.36E-04	ft/min	Middle portion of curve fits data, otherwise not a good fit.
Transmissivity, Cooper	T	1.23E-03	ft^2/min	
S	S	7.80E-06	---	

Data Import Into AQTESOLV:

Elapsed Time, Min	Potentiometric Drawdown
3.00	1.30
4.00	1.20
5.00	1.12
6.00	1.04
7.00	0.97
8.00	0.90
9.00	0.85
10.00	0.81
12.00	0.76
13.00	0.71
14.00	0.67
15.00	0.63
16.00	0.60
17.00	0.56
22.00	0.41
27.00	0.31
32.00	0.23
42.00	0.14
52.00	0.06

Site Name	WSMF TSA Facility	Test Well ID	HVW-08
Data Collector(s)	PZ and GG	Screen Opening (in)	0.01
Top of Casing Elevation (msl)	0	Filter Pack	10/20 sand
Total well depth (ft)	32	LNAPL Fraction in Filter	90%
Depth to top of screen (ft)	25	Bottom of Screen (ft)	30
Filter Pack Porosity (%)	40%	Effective Porosity (%)	36
Well Diameter (in)	2	Well Radius (ft)	0.08
Boring Diameter (in)	8.5	Boring Radius (ft)	0.35
Oil Density (g/cm)	0.737	Effective Radius(ft)	
		T/K Correction Factor	3.81

Initial Test Conditions (LNAPL)

Initial Depth to FP (ft)	29.11	Test Date	11/16/09
Initial Depth to Water (ft)	29.73	Start Time	13:49
Initial FP Thickness (ft)	0.62		

Initial Test Conditions (Groundwater)

Initial DTW Uncorrected (ft)	29.73	Test Date	11/16/09
Initial FP Thickness (ft)	0.62	Start Time	13:48
Initial DTW, Potentiometric Surface (ft)	29.27	Initial Displacement H_0 (ft)	0.73
Static Water Column H (ft)	0.73	Depth to TOS d, below pot	-4.27

Product Removal

Borehole I.D.	8.5	inches	
Well I.D.	2	inches	
Intial product in well	0.62	inches	
Initial Volume in well	1.9	inches^3	
Initial Volume in well	31.9	ml	
Filter Pack area	53.6	inches^2	borehole area minus well casing area
Initial product in well	0.62	inches	
Filter Pack volume	33.2	inches^3	
Assumed porosity of filter pack	35	%	
Initial product volume in filter pack	190.6	ml	
Total Volume, well + FP	**222.5**	**ml**	
Amt Bailed for Sample	250	ml	Sample was taken first thing prior to test because didn't know if product would recover enough after the test to sample.
Amt Bailed (bailed dry)	0.620	ft	in bailer
(bailed dry) Volume Bailed	1.9	inches^3	
Volume Bailed	31.9	ml	

Baildown Test Data

Timestamp	Elapsed Time (min)	Depth to FP (ft)	Depth to Water (ft)	FP Thickness (ft)	LNAPL Drawdown (ft)	Depth to Potentiometric Surface (ft)	Potentiometric Displacement (ft)
11/16/2009 13:49	1.00	29.43	29.70	0.27	0.35	29.50	0.23
11/16/2009 13:50	2.00	29.40	29.68	0.28	0.34	29.47	0.20
11/16/2009 13:51	3.00	29.39	29.67	0.28	0.34	29.46	0.19
11/16/2009 13:52	4.00	29.37	29.65	0.28	0.34	29.44	0.17
11/16/2009 13:53	5.00	29.38	29.65	0.27	0.35	29.45	0.18
11/16/2009 13:54	6.00	29.37	29.65	0.28	0.34	29.44	0.17
11/16/2009 13:55	7.00	29.37	29.65	0.28	0.34	29.44	0.17
11/16/2009 13:56	8.00	29.36	29.65	0.29	0.33	29.44	0.16
11/16/2009 13:57	9.00	29.35	29.65	0.30	0.32	29.43	0.16
11/16/2009 13:59	11.00	29.34	29.64	0.30	0.32	29.42	0.15
11/16/2009 14:00	12.00	29.34	29.64	0.30	0.32	29.42	0.15
11/16/2009 14:01	13.00	29.34	29.64	0.30	0.32	29.42	0.15
11/16/2009 14:02	14.00	29.33	29.63	0.30	0.32	29.41	0.14
11/16/2009 14:03	15.00	29.33	29.63	0.30	0.32	29.41	0.14
11/16/2009 14:08	20.00	29.32	29.62	0.30	0.32	29.40	0.13
11/16/2009 14:13	25.00	29.30	29.60	0.30	0.32	29.38	0.11
11/16/2009 14:18	30.00	29.30	29.60	0.30	0.32	29.38	0.11
11/16/2009 14:28	40.00	29.30	29.60	0.30	0.32	29.38	0.11
11/16/2009 14:38	50.00	29.29	29.59	0.30	0.32	29.37	0.10
11/16/2009 14:48	60.00	29.28	29.58	0.30	0.32	29.36	0.09
11/16/2009 16:34	166.50	29.27	29.56	0.29	0.33	29.35	0.07
11/17/2009 8:54	1146.00	29.29	29.82	0.53	0.09	29.43	0.16

Well: HVW-08

Analysis: LNAPL

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		0.62	ft	Bailed dry so assumed all product removed
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		0.62	ft	
Static Water Column Height	H		0.62	ft	
Depth to TOS	d		30	ft	
Length of Well Screen	L		0.62	ft	
Inside Radius of Well Casing	r_c		0.08	ft	
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	Packer radius (0.35 ft) not used, email discussion w
Outer Radius of Well Skin	r_{sk}		0.35	ft	
Apply effective casing radius correction	---	✓	---		Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓	---		
Kinematic Viscosity	v		5.79E-07	m^2/sec	average from Density Results tab
Gravitational Acceleration	g		9.81E+00	m/sec^2	
AQTESOLV OUTPUT (not corrected):					
Hydraulic Conductivity, Bouwer-Rice	K		7.56E-05	ft/min	Fit on initial data (<24 min.)
Transmissivity, Bouwer-Rice	T		4.68E-05	ft^2/min	
Hydraulic Conductivity, Cooper	K		2.95E-05	ft/min	Poor fit.
Transmissivity, Cooper	T		1.83E-05	ft^2/min	
S	S		2.82E-01	---	

Corrected T/K Values:

Hydraulic Conductivity, Bouwer-Rice	K	2.88E-04	ft/min
Transmissivity, Bouwer-Rice	T	1.78E-04	ft^2/min
Hydraulic Conductivity, Cooper	K	1.12E-04	ft/min
Transmissivity, Cooper	T	6.96E-05	ft^2/min

Data Import Into AQTESOLV:

Elapsed Time, Min	LNAPL Drawdown
1.00	0.35
2.00	0.34
3.00	0.34
4.00	0.34
5.00	0.35
6.00	0.34
7.00	0.34
8.00	0.33
9.00	0.32
11.00	0.32
12.00	0.32
13.00	0.32
14.00	0.32
15.00	0.32
20.00	0.32
25.00	0.32
30.00	0.32
40.00	0.32
50.00	0.32
60.00	0.32

Well: HVW-08

Analysis: Water

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		0.73	ft	
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		0.73	ft	
Static Water Column Height	H		0.73	ft	
Depth to TOS	d		0	ft	
Length of Well Screen	L		5	ft	
Inside Radius of Well Casing	r_c		0.08	ft	
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	Packer radius (0.35 ft) not used, email discussion w
Outer Radius of Well Skin	r_{sk}		0.35		
Apply effective casing radius correction	---	✓	---		Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓	---		
Kinematic Viscosity	v		3.89E-07	m^2/sec	
Gravitational Acceleration	g		9.80665	m/sec^2	
AQTESOLV OUTPUT (potentiometric water data not to be corrected):					
Hydraulic Conductivity, Bouwer-Rice	K		1.29E-04	ft/min	Fit on data points <40 min.
Transmissivity, Bouwer-Rice	T		9.39E-05	ft^2/min	
Hydraulic Conductivity, Cooper	K		4.26E-04	ft/min	Poor fit.
Transmissivity, Cooper	T		3.11E-04	ft^2/min	
S	S		1.00E+00	---	

Data Import Into AQTESOLV:

Elapsed Time, Min	Potentiometric Drawdown
1.00	0.23
2.00	0.20
3.00	0.19
4.00	0.17
5.00	0.18
6.00	0.17
7.00	0.17
8.00	0.16
9.00	0.16
11.00	0.15
12.00	0.15
13.00	0.15
14.00	0.14
15.00	0.14
20.00	0.13
25.00	0.11
30.00	0.11
40.00	0.11
50.00	0.10
60.00	0.09

Site Name	WSMF TSA Facility	Test Well ID	HVW-10
Data Collector(s)	PZ and GG	Screen Opening (in)	0.01
Top of Casing Elevation (msl)	0	Filter Pack	10/20 sand
Total well depth (ft)	31	LNAPL Fraction in Filter	90%
Depth to top of screen (ft)	29.5	Bottom of Screen (ft)	31
Filter Pack Porosity (%)	40%	Effective Porosity (%)	36
Well Diameter (in)	1	Well Radius (ft)	0.04
Boring Diameter (in)	8.5	Boring Radius (ft)	0.35
Oil Density (g/cm) (avg from HVW5 & 8)	0.739	Effective Radius(ft)	
		T/K Correction Factor	3.83

Initial Test Conditions (LNAPL)

Initial Depth to FP (ft)	29.32	Test Date	11/16/09
Initial Depth to Water (ft)	29.76	Start Time	15:51
Initial FP Thickness (ft)	0.44		

Intitial Test Conditions (Groundwater)

Initial DTW Uncorrected (ft)	29.76	Test Date	11/16/09
Initial FP Thickness (ft)	0.44	Start Time	15:51
Initial DTW, Potentiometric Surface (ft)	29.43	Initial Displacement H_0 (ft)	0.51
Static Water Column H (ft)	1.57	Depth to TOS d, below pot	0.07

Product Removal

Borehole I.D.	8.5	inches	
Screen I.D.	2	inches	well casing is 1" dia, but screen is 2" dia, all product is within screen interval
Intial product in well	0.44	inches	
Initial Volume in well	1.4	inches^3	
Initial Volume in well	22.5	ml	
Filter Pack area	53.6	inches^2	borehole area minus well casing area
Initial product in well	0.44	inches	
Filter Pack volume	23.5	inches^3	
Assumed porosity of filter pack	35	%	
Initial product volume in filter pack	134.7	ml	
Total Volume, well + FP	**157.2**	**ml**	
Amt Bailed for Sample	0	ml	
Amt Bailed	NC	ft	
Volume Bailed		inches^3	
Volume Bailed		ml	

Baildown Test Data

Timestamp	Elapsed Time (min)	Depth to FP (ft)	Depth to Water (ft)	FP Thickness (ft)	LNAPL Drawdown (ft)	Depth to Potentiometric Surface (ft)	Potentiometric Displacement (ft)
11/16/2009 15:54	0.00	29.85	30.19	0.34	0.10	29.94	0.51
11/16/2009 15:55	1.00	29.81	30.16	0.35	0.09	29.90	0.47
11/16/2009 15:56	2.00	29.79	30.14	0.35	0.09	29.88	0.45
11/16/2009 15:57	3.00	29.77	30.12	0.35	0.09	29.86	0.43
11/16/2009 15:58	4.00	29.74	30.10	0.36	0.08	29.83	0.40
11/16/2009 15:59	5.00	29.72	30.08	0.36	0.08	29.81	0.38
11/16/2009 16:00	6.00	29.70	30.05	0.35	0.09	29.79	0.36
11/16/2009 16:01	7.00	29.69	30.03	0.34	0.10	29.78	0.35
11/16/2009 16:02	8.00	29.68	30.01	0.33	0.11	29.77	0.33
11/16/2009 16:04	10.00	29.65	30.00	0.35	0.09	29.74	0.31
11/16/2009 16:08	14.50	29.56	29.90	0.34	0.10	29.65	0.22
11/16/2009 16:13	19.00	29.52	29.88	0.36	0.08	29.61	0.18
11/16/2009 16:18	24.00	29.49	29.83	0.34	0.10	29.58	0.15
11/16/2009 16:27	33.00	29.42	29.79	0.37	0.07	29.52	0.08
11/16/2009 16:34	40.00	29.41	29.77	0.36	0.08	29.50	0.07
11/16/2009 16:48	54.00	29.40	29.75	0.35	0.09	29.49	0.06
11/17/2009 8:50	1016.00	29.38	29.74	0.36	0.08	29.47	0.04

Well: HVW-10

Analysis: LNAPL

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		0.44	ft	Bailed dry so assumed all product removed
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		0.44	ft	
Static Water Column Height	H		0.44	ft	
Depth to TOS	d		29.5	ft	
Length of Well Screen	L		0.44	ft	
Inside Radius of Well Casing	r_c		0.040	ft	1" dia column pipe
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	2" well dia. Packer radius (0.35 ft) not used, email
Outer Radius of Well Skin	r_{sk}		0.35	ft	
Apply effective casing radius correction	---	✓	---		Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓	---		
Kinematic Viscosity	v		5.87E-07	m^2/sec	Average of data collected on HVW-05 and HVW-08
Gravitational Acceleration	g		9.81E+00	m/sec^2	

AQTESOLV OUTPUT (not corrected, explicit T/K correction applied on summary tab):

Hydraulic Conductivity, Bouwer-Rice	K	9.71E-05	ft/min	
Transmissivity, Bouwer-Rice	T	4.27E-05	ft^2/min	
Hydraulic Conductivity, Cooper	K	2.72E-04	ft/min	Poor fit.
Transmissivity, Cooper	T	1.20E-04	ft^2/min	
S	S	2.82E-01	---	

Corrected T/K Values:

Hydraulic Conductivity, Bouwer-Rice	K	3.72E-04	ft/min
Transmissivity, Bouwer-Rice	T	1.64E-04	ft^2/min
Hydraulic Conductivity, Cooper	K	1.04E-03	ft/min
Transmissivity, Cooper	T	4.58E-04	ft^2/min

Data Import Into AQTESOLV:

Elapsed Time, Min	LNAPL Drawdown
1.00	0.09
2.00	0.09
3.00	0.09
4.00	0.08
5.00	0.08
6.00	0.09
7.00	0.10
8.00	0.11
10.00	0.09
14.50	0.10
19.00	0.08
24.00	0.10
33.00	0.07
40.00	0.08
54.00	0.09

Well: HVW-10

Analysis: Water

Parameter	Symbol	Value		Units	Notes
Aquifer Saturated Thickness	b		1.57	ft	
K Anisotrophy Ratio	Kv/Kh		1	---	
Initial Displacement	H_0		0.51	ft	
Static Water Column Height	H		1.57	ft	
Depth to TOS	d		0.07	ft	
Length of Well Screen	L		1.5	ft	
Inside Radius of Well Casing	r_c		0.040	ft	1" dia column pipe
Downhole Equipment Radius	r_{eq}		0	ft	
Inside Radius of Packer	r_p		0.35	ft	
Radius of Well	r_w		0.08	ft	2" well dia. Packer radius (0.35 ft) not used, email
Outer Radius of Well Skin	r_{sk}		0.35		
Apply effective casing radius correction	---	✓	---		Bouwer-Rice Method correction applied
Effective Porosity	n_e		36	%	
Apply frictional well loss correction	---	✓	---		
Kinematic Viscosity	v		3.89E-07	m^2/sec	
Gravitational Acceleration	g		9.80665	m/sec^2	

AQTESOLV OUTPUT (potentiometric water data not to be corrected):

Hydraulic Conductivity, Bouwer-Rice	K	1.16E-04	ft/min	Good linear fit.
Transmissivity, Bouwer-Rice	T	1.82E-04	ft^2/min	
Hydraulic Conductivity, Cooper	K	1.98E-05	ft/min	Poor Fit.
Transmissivity, Cooper	T	3.12E-05	ft^2/min	
S	S	1.10E-01	---	

Data Import Into AQTESOLV:

Elapsed Time, Min	Potentiometric Drawdown
1.00	0.47
2.00	0.45
3.00	0.43
4.00	0.40
5.00	0.38
6.00	0.36
7.00	0.35
8.00	0.33
10.00	0.31
14.50	0.22
19.00	0.18
24.00	0.15
33.00	0.08
40.00	0.07
54.00	0.06
1016.00	0.04

White Sands Missle Range
TSA Area Baildown Test Summary
November 16, 2009

Revised January 26, 2011

Red = calculated in worksheet

LNAPL Product (Corrected T/K Values)[1]

		Bouwer-Rice Method		Cooper Method		
	Thickness Prior to Test	LNAPL Conductivity	LNAPL Transmissivity[3]	LNAPL Conductivity	LNAPL Transmissivity	
Well	ft	ft/min	ft^2/min	ft/min	ft^2/min	
HVW-05	0.43	1.36E-02	5.86E-03	1.48E-02	6.38E-03	2.98E-03
HVW-08	0.62	2.88E-04	1.78E-04	Curve fit not adequate		9.06E-05 4.31E+00
HVW-10	0.44	3.72E-04	1.64E-04	Curve fit not adequate		8.32E-05

	Volume Prior to Test		Volume Removed During Test
	In-well Prior to Test	In Filterpack Prior to Test	
Well	ml	ml	ml
HVW-05	14.1	86.1	250 ml sample + 4.1 ml
HVW-08	31.9	190.6	250 ml sample + 31.9 ml (bailed dry)
HVW-10	22.5	134.7	NC

Groundwater (not to be corrected)[2]

		Bouwer-Rice Method		Cooper Method		
	Thickness Prior to Test	Hydraulic Conductivity	Transmissivity[4]	Hydraulic Conductivity	Transmissivity	
Well	ft	ft/min	ft^2/min	ft/min	ft^2/min	
HVW-05	5.2	1.22E-04	6.34E-04	2.36E-04	1.23E-03	6.20E-05
HVW-08	0.73	1.29E-04	9.39E-05	Curve fit not adequate		6.53E-05
HVW-10	1.57	1.16E-04	1.82E-04	Curve fit not adequate		5.89E-05

Notes:

[1] Estimated from potentiometric time-drawdown data corrected for LNAPL density based on slug test methods (Bouwer-Rice and Cooper).
[2] Estimated from LNAPL time-drawdown data corrected for LNAPL viscosity based on slug test methods (Bouwer-Rice and Cooper).
[3] LNAPL conductivity multiplied by initial LNAPL thickness.
[4] Groundwater conductivity multiplied by initial LNAPL thickness.

Analytical Reference:

Beckett, G.D. and Lyverse M.A., "A Protocol for Performing Field Tasks and Follow-up Analytical Evaluation for LNAPL Transmissivity Using Well Baildown Procedures." 2002. Aqui-ver, Inc. and ChevronTexaco Energy Research and Technology, Co.

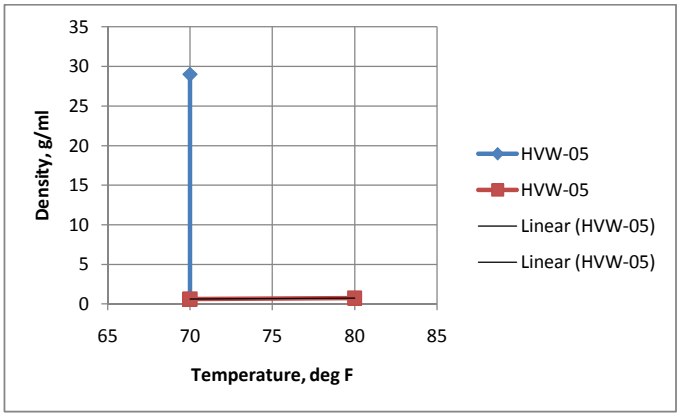
Analytical Results

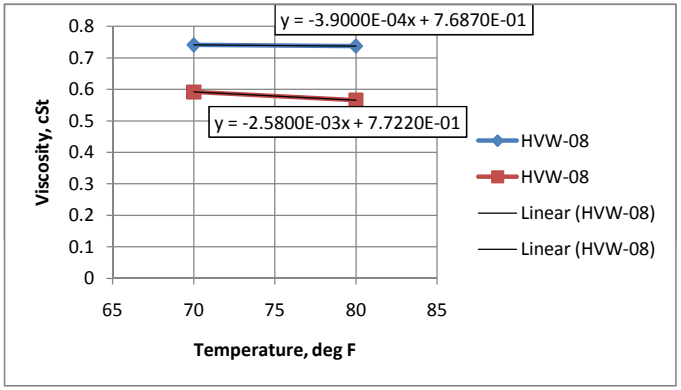
Well	Analysis	Sample Temp, deg F	Result	Unit
HVW-05	API Gravity	70	58.46	degrees
HVW-05	API Gravity	80	59.46	degrees
HVW-05	Density	70	0.7434	g/ml
HVW-05	Density	80	0.7385	g/ml
HVW-05	Interfacial tension	70	29	dynes/cm
HVW-05	Specific Gravity	70	0.7449	_
HVW-05	Specific Gravity	80	0.741	_
HVW-05	Viscosity	70	0.6054	cSt
HVW-05	Viscosity	80	0.5832	cSt

Well	Analysis	Sample Temp, deg F	Result	Unit
HVW-08	API Gravity	70	59.36	degrees
HVW-08	API Gravity	80	60.36	degrees
HVW-08	Density	70	0.7399	g/ml
HVW-08	Density	80	0.735	g/ml
HVW-08	Interfacial tension	70	32	dynes/cm
HVW-08	Specific Gravity	70	0.7414	_
HVW-08	Specific Gravity	80	0.7375	_
HVW-08	Viscosity	70	0.5916	cSt
HVW-08	Viscosity	80	0.5658	cSt

WSMR Density Results
11/16/2009

	Well	Analysis	Temp	Result	Unit	Media
API Gravit	HVW-05	API Gravity	70	58.46	degrees	LNAPL
API Gravit	HVW-05	API Gravity	80	59.46	degrees	LNAPL
API Gravit	HVW-05	Density	70	0.7434	g/ml	LNAPL
API Gravit	HVW-05	Density	80	0.7385	g/ml	LNAPL
Density	HVW-05	Interfacial tension	70	29	dynes/cm	LNAPL
Density	HVW-05	Specific Gravity	70	0.7449	_	LNAPL
Density	HVW-05	Specific Gravity	80	0.741	_	LNAPL
Density	HVW-05	Viscosity	70	0.6054	cSt	LNAPL
Interfacial	HVW-05	Viscosity	80	0.5832	cSt	LNAPL
Interfacial	HVW-08	API Gravity	70	59.36	degrees	LNAPL
Specific Gı	HVW-08	API Gravity	80	60.36	degrees	LNAPL
Specific Gı	HVW-08	Density	70	0.7399	g/ml	LNAPL
Specific Gı	HVW-08	Density	80	0.735	g/ml	LNAPL
Specific Gı	HVW-08	Interfacial tension	70	32	dynes/cm	LNAPL
Viscosity	HVW-08	Specific Gravity	70	0.7414	_	LNAPL
Viscosity	HVW-08	Specific Gravity	80	0.7375	_	LNAPL
Viscosity	HVW-08	Viscosity	70	0.5916	cSt	LNAPL
Viscosity	HVW-08	Viscosity	80	0.5658	cSt	LNAPL





Density Interpolation HVW-05

Slope	m	-0.00049
Intercept	b	0.7777
Choosen Temperature	x	75
Resultant Density	y	0.74095

Density Interpolation HVW-08

Slope	m	-0.00049
Intercept	b	0.7742
Choosen Temperature	x	75
Resultant Density	y	0.73745

Viscosity Interpolation HVW-05

Slope	m	-0.00222
Intercept	b	0.7608
Choosen Temperature	x	75
Resultant Viscosity, cSt	y	0.5943
Viscosity , m^2/sec		5.943E-07

Viscosity Interpolation HVW-08

Slope	m	-0.00258
Intercept	b	0.7722
Choosen Temperature	x	75
Resultant Viscosity, cSt	y	0.5787
Viscosity , m^2/sec		5.787E-07

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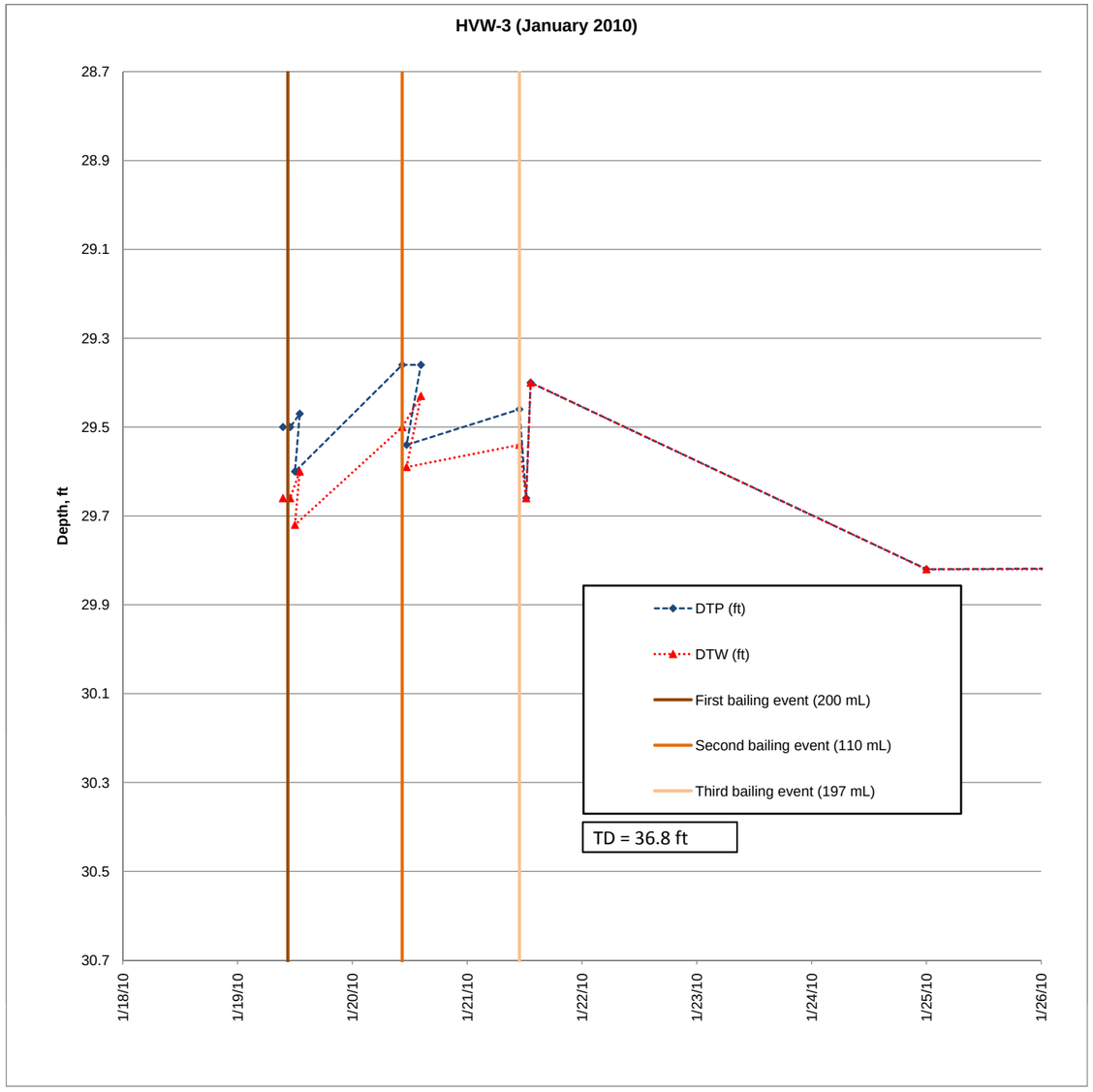
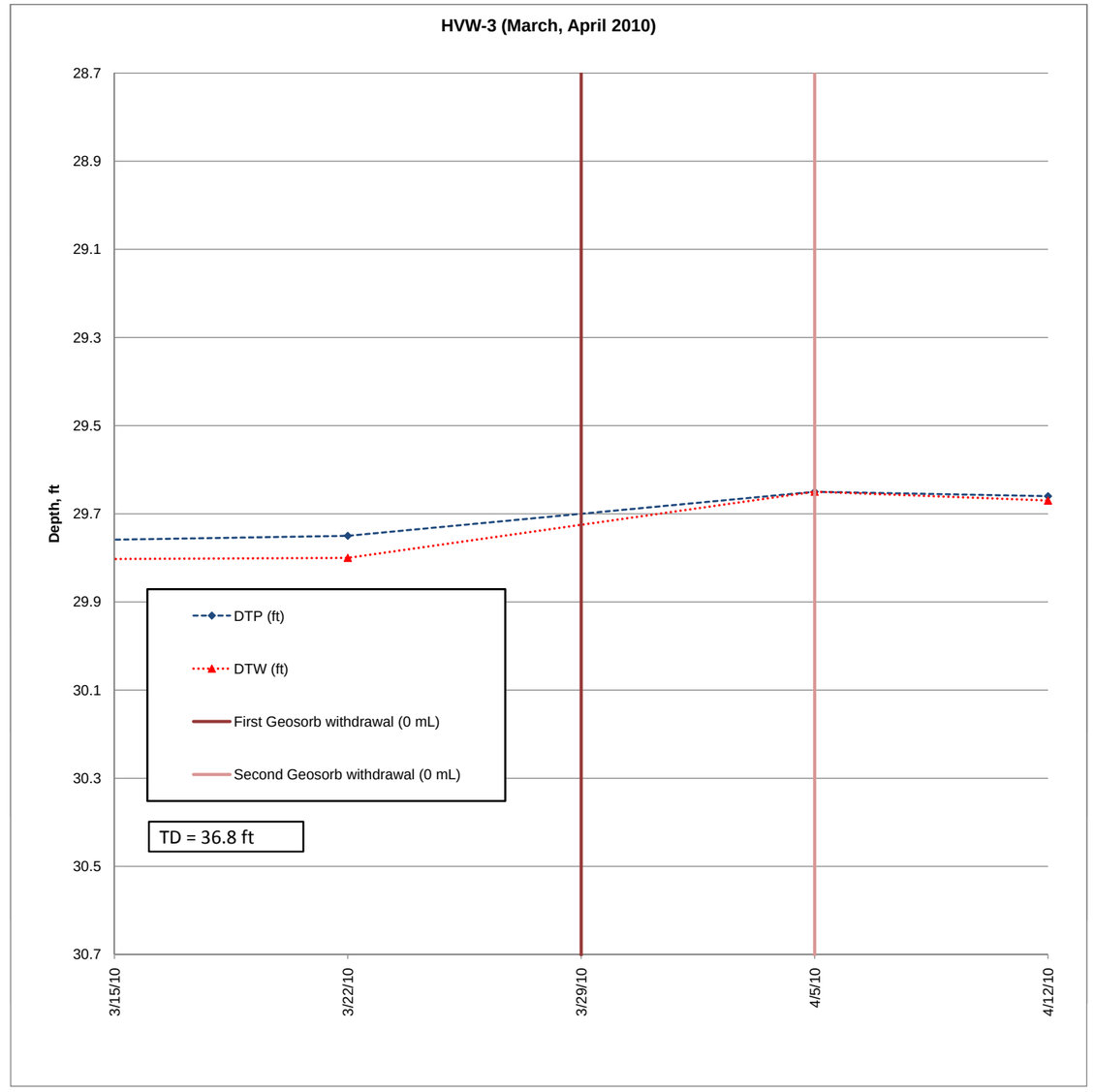
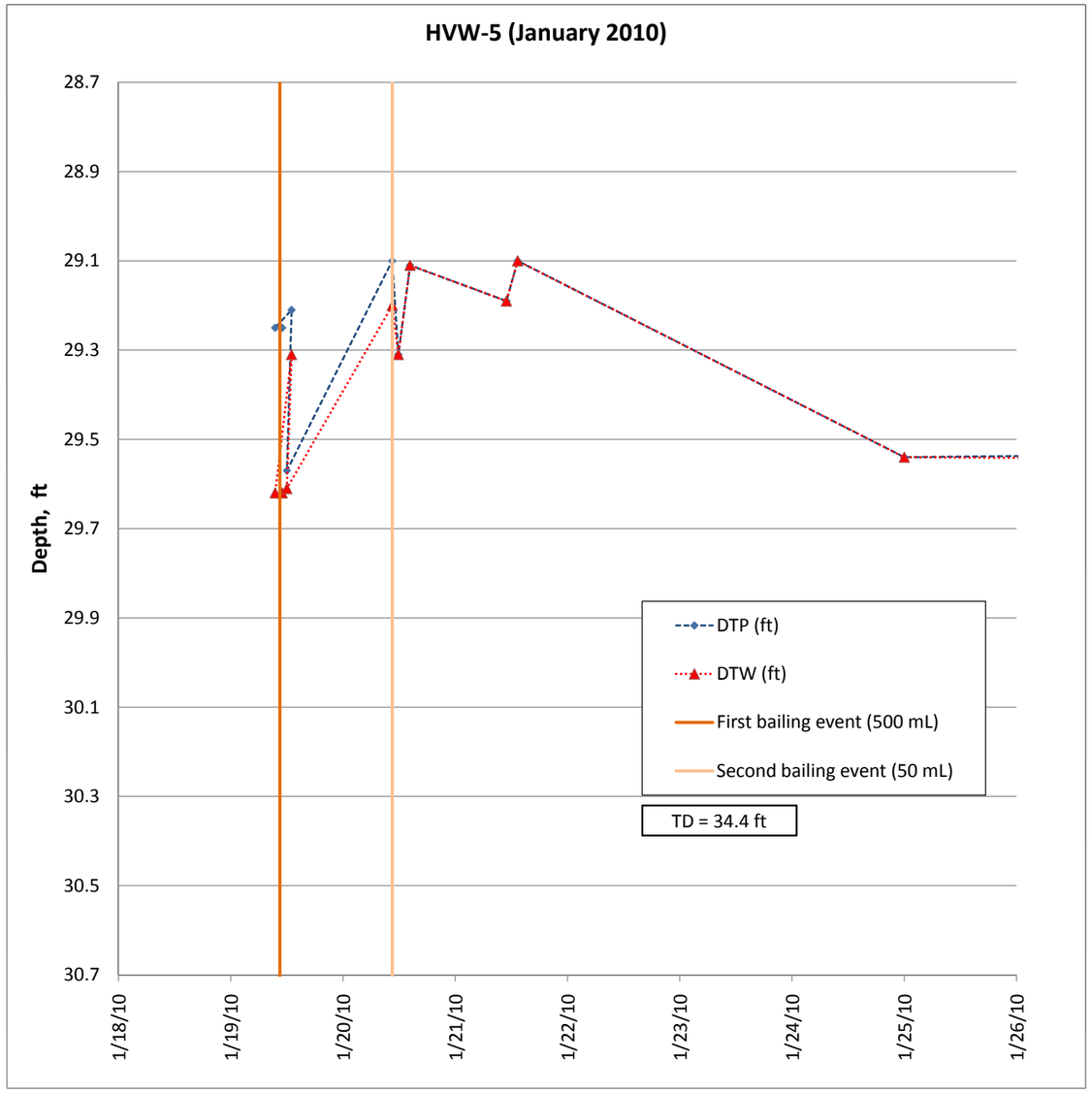
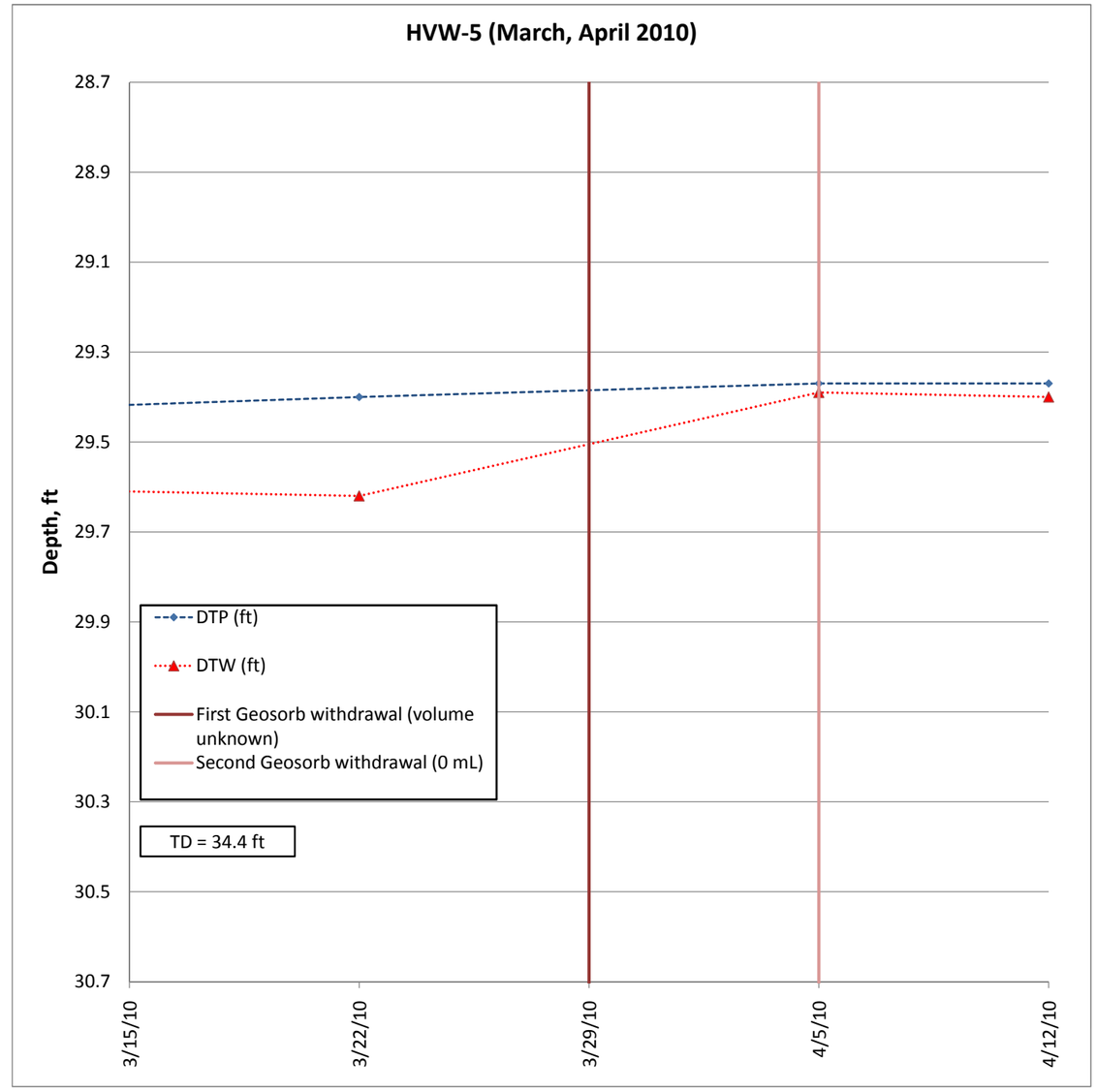
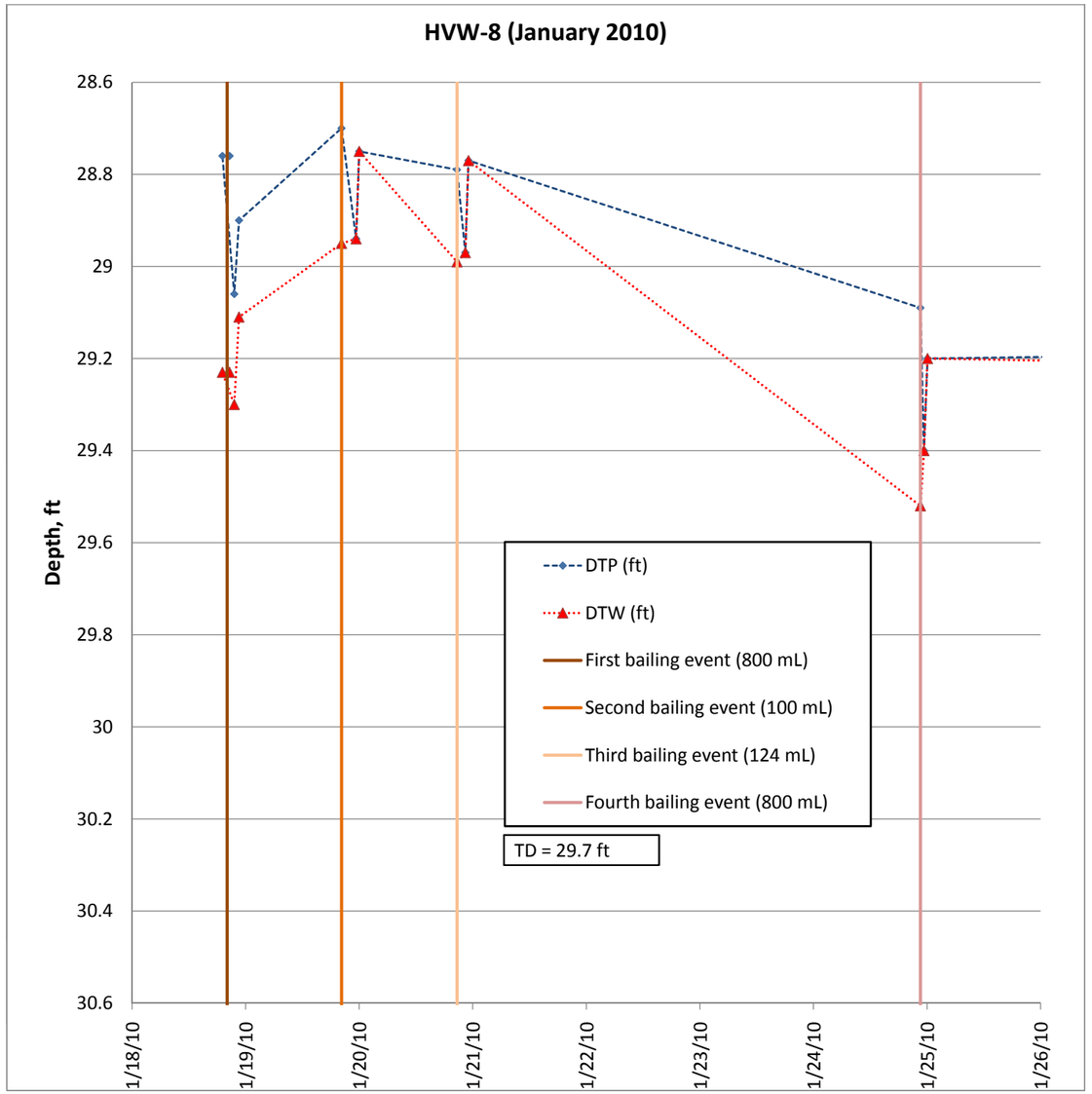
Appendix G. Water and Product Level Graphs, January and March - April 2010
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

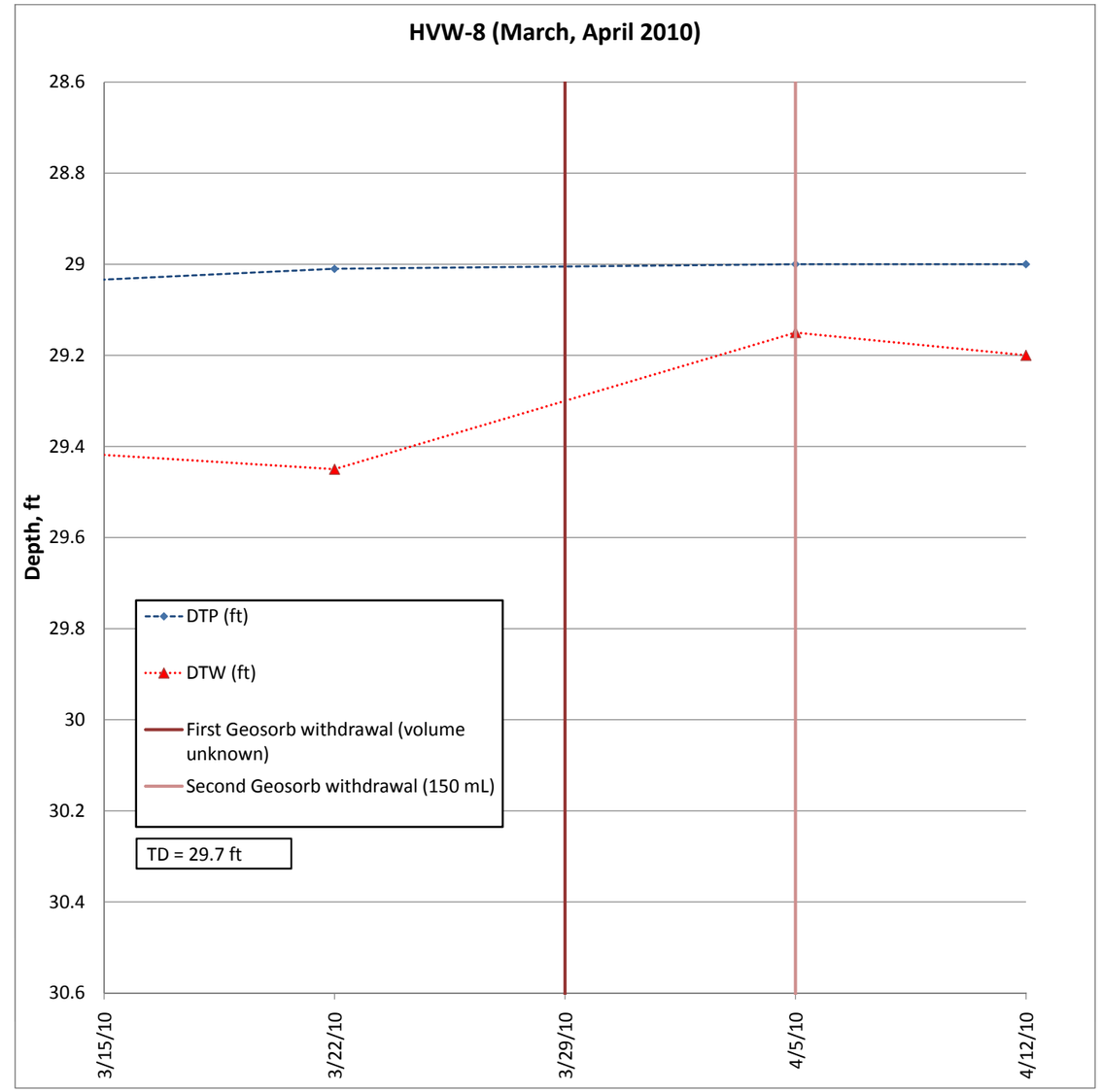





HVW-5 (January 2010)
Depth, ft
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
30.7
1/18/10
1/19/10
1/20/10
1/21/10
1/22/10
1/23/10
1/24/10
1/25/10
1/26/10
DTP (ft)
DTW (ft)
First bailing event (500 mL)
Second bailing event (50 mL)
TD = 34.4 ft


HVW-5 (March, April 2010)
Depth, ft
28.7
28.9
29.1
29.3
29.5
29.7
29.9
30.1
30.3
30.5
30.7
3/15/10
3/22/10
3/29/10
4/5/10
4/12/10
DTP (ft)
DTW (ft)
First Geosorb withdrawal (volume unknown)
Second Geosorb withdrawal (0 mL)
TD = 34.4 ft


HVW-8 (January 2010)
Depth, ft
28.6
28.8
29
29.2
29.4
29.6
29.8
30
30.2
30.4
30.6
1/18/10
1/19/10
1/20/10
1/21/10
1/22/10
1/23/10
1/24/10
1/25/10
1/26/10
DTP (ft)
DTW (ft)
First bailing event (800 mL)
Second bailing event (100 mL)
Third bailing event (124 mL)
Fourth bailing event (800 mL)
TD = 29.7 ft


HVW-8 (March, April 2010)
Depth, ft
28.6
28.8
29
29.2
29.4
29.6
29.8
30
30.2
30.4
30.6
3/15/10
3/22/10
3/29/10
4/5/10
4/12/10
DTP (ft)
DTW (ft)
First Geosorb withdrawal (volume unknown)
Second Geosorb withdrawal (150 mL)
TD = 29.7 ft

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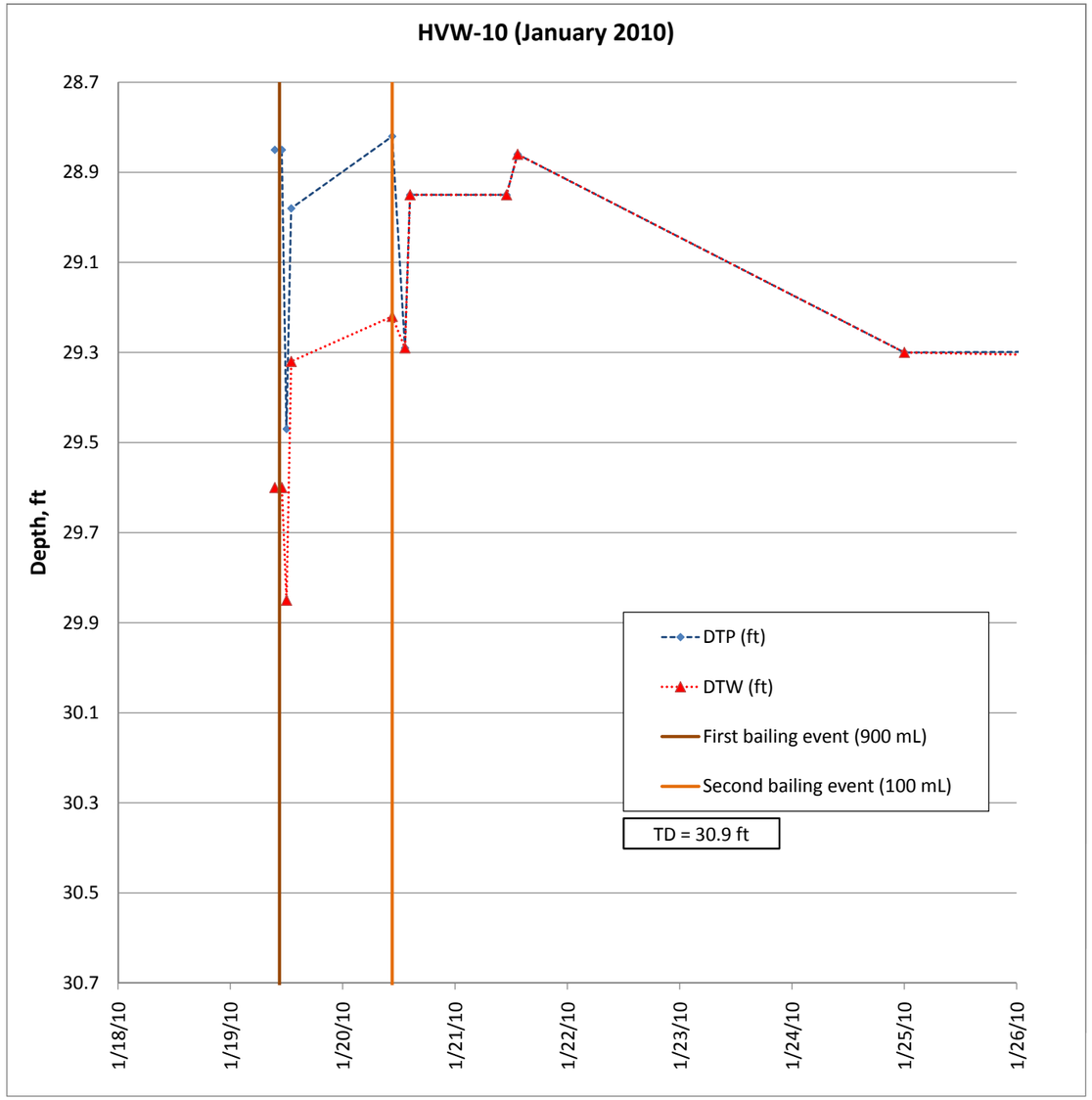
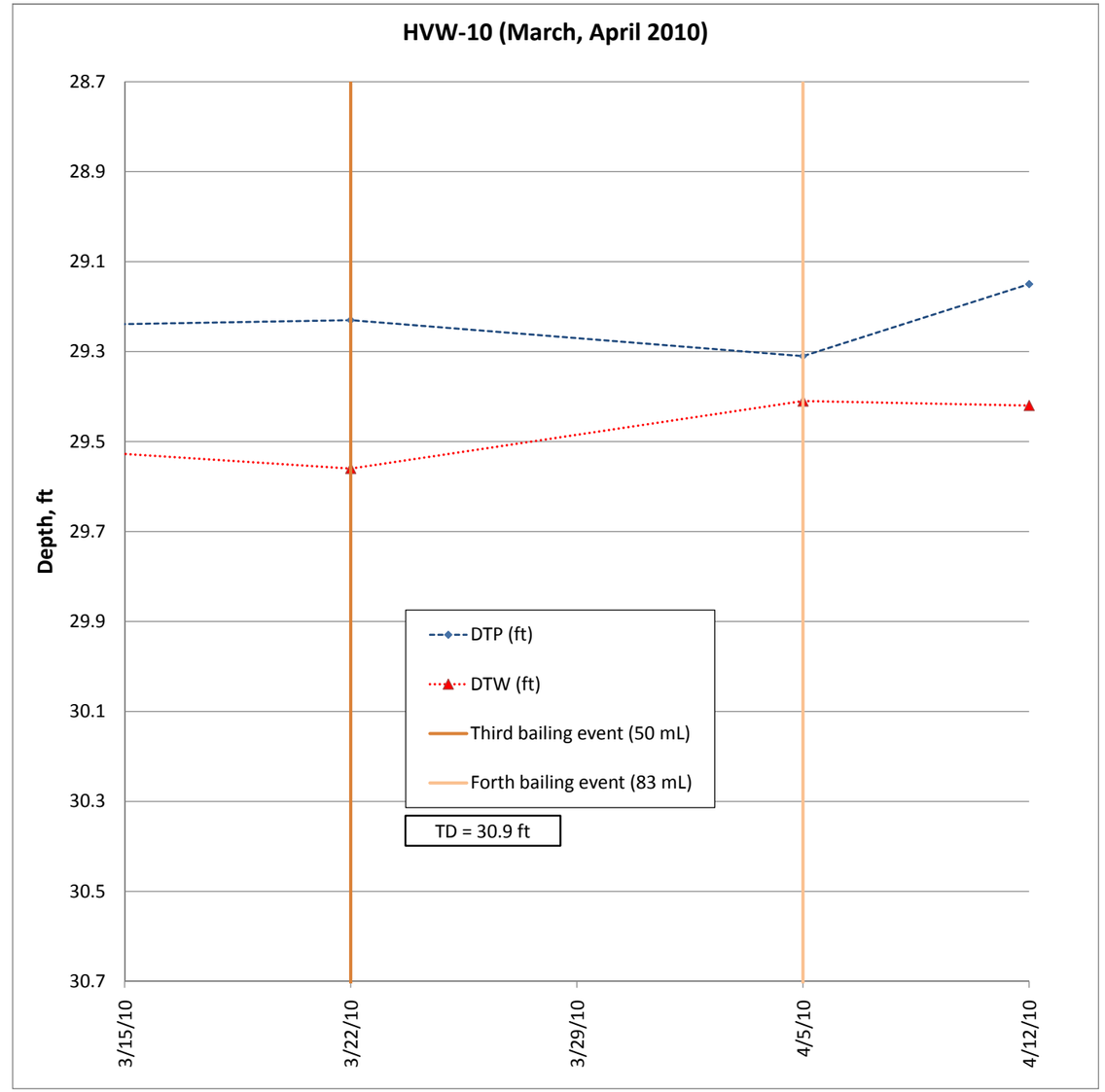
Appendix G. Water and Product Level Graphs, January and March - April 2010
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico





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Appendix G. Water and Product Level Data Summary, January and March - April 2010
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Well	Date	Time	TD (ft)	Measured DTW (ft)	Measued DTP (ft)	Product Thickness(ft)	Product Removed (mL)
HVW-01	1/19/2010	-	20.82	20.65	-	0	-
HVW-01	1/25/2010	-	20.82	20.66	-	0	-
HVW-01	3/22/2010	-	20.82	20.66	20.65	0.01	-
HVW-01	4/5/2010	-	20.82	20.64	-	0	-
HVW-01	4/12/2010	-	20.82	20.64	-	0	-
HVW-02	1/19/2010	-	37.1	29.12	-	0	-
HVW-02	1/25/2010	-	37.1	28.98	-	0	-
HVW-02	3/22/2010	-	37.1	29.08	-	0	-
HVW-02	4/5/2010	-	37.1	28.91	-	0	-
HVW-02	4/12/2010	-	37.1	29.05	29.04	0.01	-
HVW-03	1/19/2010	9:30	36.8	29.66	29.5	0.16	-
HVW-03	1/19/2010	11:00	36.8	29.66	29.5	0.16	200
HVW-03	1/19/2010	13:00	36.8	29.60	29.47	0.13	-
HVW-03	1/19/2010	12:00	36.8	29.72	29.6	0.12	-
HVW-03	1/20/2010	10:26	36.8	29.50	29.36	0.14	110
HVW-03	1/20/2010	14:20	36.8	29.43	29.36	0.07	-
HVW-03	1/20/2010	11:20	36.8	29.59	29.54	0.05	-
HVW-03	1/21/2010	10:55	36.8	29.54	29.46	0.08	197*
HVW-03	1/21/2010	12:20	36.8	29.66	-	0	-
HVW-03	1/21/2010	13:16	36.8	29.40	-	0	-
HVW-03	1/25/2010	-	36.8	29.82	-	0	-
HVW-03	3/22/2010	-	36.8	29.80	29.75	0.05	-
HVW-03	4/5/2010	-	36.8	29.65	-	0	-
HVW-03	4/12/2010	-	36.8	29.67	29.66	0.01	-
HVW-04	1/19/2010	-	36.75	29.11	-	0	-
HVW-04	1/25/2010	-	36.75	29.52	-	0	-
HVW-04	3/22/2010	-	36.75	29.43	29.42	0.01	-
HVW-04	4/5/2010	-	36.75	29.35	-	0	-
HVW-04	4/12/2010	-	36.75	29.35	-	0	-
HVW-05	1/19/2010	11:00	34.4	29.62	29.25	0.37	500
HVW-05	1/19/2010	9:30	34.4	29.62	29.25	0.37	-
HVW-05	1/19/2010	13:00	34.4	29.31	29.21	0.1	-
HVW-05	1/19/2010	12:00	34.4	29.61	29.57	0.04	-
HVW-05	1/20/2010	10:32	34.4	29.20	29.1	0.1	50
HVW-05	1/20/2010	11:50	34.4	29.31	-	0	-
HVW-05	1/20/2010	14:20	34.4	29.11	-	0	-
HVW-05	1/21/2010	10:57	34.4	29.19	-	0	-
HVW-05	1/21/2010	13:20	34.4	29.10	-	0	-
HVW-05	1/25/2010	-	34.4	29.54	-	0	-
HVW-05	3/22/2010	-	34.4	29.62	29.4	0.22	-
HVW-05	4/5/2010	-	34.4	29.39	29.37	0.02	-
HVW-05	4/12/2010	-	34.4	29.40	29.37	0.03	-
HVW-06	1/19/2010	9:30	29.74	25.55	-	0	-
HVW-06	1/19/2010	11:00	29.74	25.55	-	0	-
HVW-06	1/19/2010	12:00	29.74	25.53	-	0	-
HVW-06	1/19/2010	13:00	29.74	25.51	-	0	-
HVW-06	1/20/2010	10:37	29.74	25.48	-	0	-
HVW-06	1/21/2010	11:04	29.74	25.54	-	0	-
HVW-06	1/21/2010	13:25	29.74	25.50	-	0	-
HVW-06	1/25/2010	-	29.74	25.85	-	0	-
HVW-06	3/22/2010	-	29.74	28.86	28.85	0.01	-
HVW-06	4/5/2010	-	29.74	26.87	-	0	-
HVW-06	4/12/2010	-	29.74	26.85	-	0	-
HVW-07	1/19/2010	-	21.91	DRY	-	0	-
HVW-07	1/25/2010	-	21.91	DRY	-	0	-

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Appendix G. Water and Product Level Data Summary, January and March - April 2010
HELSTF TSA Gasoline Spill Site (SWMU 197)
White Sands Missile Range, New Mexico

Well	Date	Time	TD (ft)	Measured DTW (ft)	Measued DTP (ft)	Product Thickness(ft)	Product Removed (mL)
HVW-07	3/22/2010	-	21.91	DRY	-	0	-
HVW-07	4/5/2010	-	21.91	DRY	-	0	-
HVW-07	4/12/2010	-	21.91	DRY	-	0	-
HVW-08	1/19/2010	11:00	29.72	29.23	28.76	0.47	800
HVW-08	1/19/2010	9:30	29.72	29.23	28.76	0.47	-
HVW-08	1/19/2010	12:00	29.72	29.30	29.06	0.24	-
HVW-08	1/19/2010	13:00	29.72	29.11	28.9	0.21	-
HVW-08	1/20/2010	10:40	29.72	28.95	28.7	0.25	100
HVW-08	1/20/2010	13:45	29.72	28.94	-	0	-
HVW-08	1/20/2010	14:25	29.72	28.75	-	0	-
HVW-08	1/21/2010	11:05	29.72	28.99	28.79	0.2	124*
HVW-08	1/21/2010	12:50	29.72	28.97	-	0	-
HVW-08	1/21/2010	13:30	29.72	28.77	-	0	-
HVW-08	1/25/2010	13:00	29.72	29.52	29.09	0.43	400
HVW-08	1/25/2010	13:45	29.72	29.40	-	0	-
HVW-08	1/25/2010	14:30	29.72	29.20	-	0	-
HVW-08	3/22/2010	-	29.72	29.45	29.01	0.44	-
HVW-08	4/5/2010	-	29.72	29.15	29	0.15	150
HVW-08	4/12/2010	-	29.72	29.20	29	0.2	-
HVW-09	1/19/2010	-	20.78	DRY	-	0	-
HVW-09	1/25/2010	-	20.78	DRY	-	0	-
HVW-09	3/22/2010	-	20.78	DRY	-	0	-
HVW-09	4/5/2010	-	20.78	DRY	-	0	-
HVW-09	4/12/2010	-	20.78	DRY	-	0	-
HVW-10	1/19/2010	9:30	30.92	29.60	28.85	0.75	-
HVW-10	1/19/2010	11:00	30.92	29.60	28.85	0.75	900
HVW-10	1/19/2010	12:00	30.92	29.85	29.47	0.38	-
HVW-10	1/19/2010	13:00	30.92	29.32	28.98	0.34	-
HVW-10	1/20/2010	10:35	30.92	29.22	28.82	0.4	100
HVW-10	1/20/2010	13:19	30.92	29.29	-	0	-
HVW-10	1/20/2010	14:24	30.92	28.95	-	0	-
HVW-10	1/21/2010	11:00	30.92	28.95	-	0	-
HVW-10	1/21/2010	13:22	30.92	28.86	-	0	-
HVW-10	1/25/2010	-	30.92	29.30	-	0	-
HVW-10	3/22/2010	-	30.92	29.56	29.23	0.33	50
HVW-10	4/5/2010	-	30.92	29.41	29.31	0.1	83
HVW-10	4/12/2010	-	30.92	29.42	29.15	0.27	-
HVW-48	1/19/2010	-	111.21	92.89	-	0	-
HVW-48	1/25/2010	-	111.21	93.20	-	0	-
HVW-49	1/19/2010	-	112.8	93.01	-	0	-
HVW-49	1/25/2010	-	112.8	93.35	-	0	-
HVW-50	1/19/2010	-	112.95	92.82	-	0	-
HVW-50	1/25/2010	-	112.95	93.23	-	0	-
HVW-52	1/19/2010	-	99.6	89.20	-	0	-
HVW-52	1/25/2010	-	99.6	89.47	-	0	-

Notes:
TD - Total Depth
DTP - Depth to Product
DTW - Depth to Water
* - Amount of product recovered was estimated based on the measured thickness of product

Appendix H

Risk Assessment

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White Sands Missile Range

Appendix H

Supplemental Risk Assessment for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site SWMU 197 (CCWS-16)

November 2010

ARCADIS

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Appendix H
Supplemental Risk Assessment for the High Energy Laser System Test Facility Technical Support Area Gasoline Spill Site
SWMU 197 (CCWS-16)

White Sands Missile Range

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Attachments

A Site Photographs

B Risk Assessment Data Sets

C Ecological Characterization Worksheets

D ProUCL output

1. Introduction

The purpose of this report is to evaluate current and the reasonably anticipated future risks to human health and ecological receptors associated with exposure to constituents detected in environmental media at Solid Waste Management Unit 197 (SWMU 197) at the High Energy Laser Systems Test Facility (HELSTF) Technical Support Area (TSA) at the White Sands Missile Range (WSMR). The TSA is the site of a gasoline spill that occurred in March 2000.

The Supplemental Risk Assessment for SWMU 197 (Site) was conducted in a manner consistent with current New Mexico Environmental Department (NMED) guidance (NMED, 2009a,b) and the United States Environmental Protection Agency (USEPA) Risk Assessment Guidance for Superfund (RAGS) (USEPA, 1989), and in compliance with the Resource Conservation and Recovery Act (RCRA).

2. SWMU 197

2.1 Site Description and History

The HELSTF TSA is located approximately 20 miles east-northeast of the WSMR Main Post Headquarters on US Highway 70 in Otero County, New Mexico and approximately 2 miles southeast of the main HELSTF operations area. The HELSTF TSA was constructed in 1987 to support the main HELSTF operations area with facilities engineering support and includes an aboveground storage tank (AST) that formerly held gasoline, a gasoline fueling island, medical facilities, fire station, cafeteria, maintenance facilities, and staging areas (Figure 2-1).

On March 16, 2000 WSMR discovered that a release of unleaded gasoline had occurred at the TSA gasoline station. After the gasoline storage and distribution system was evaluated, it was determined that the release occurred along the underground supply line running from the AST to the dispenser island. SWMU 197 is a small area paved in concrete and measuring approximately 30 feet by 30 feet where the gasoline spill occurred. Photographs of SWMU 197 were taken during the site reconnaissance in March 2009 and are provided in Attachment A to this Risk Assessment.

2.2 Risk Assessment Data Set Evaluation

Soil data generated from the site characterization activities were used in the Supplemental Risk Assessment. The risk assessment data sets (Attachment B to this Supplemental Risk Assessment) for soil were evaluated following USEPA guidance for risk assessments (USEPA, 1989; 1992; 2002a). The data evaluation guidelines are summarized as follows:

- All soil sample types (i.e., hand auger, continuous core, direct-push technique) were considered usable for the risk assessment.

- Analytical results from soil samples collected from different depths at the same sampling location during the same sampling event were evaluated as independent samples.

- Constituents that were not detected in a medium and have sample quantitation limits (SQLs) below screening levels were not included in the data evaluation for that medium. Constituents that were not detected and have SQLs above screening levels were further evaluated.

- Analytical results reported as detected or estimated values were considered to be present at the reported value. Analytical results that are “U” or “UB” qualified were considered non-detect. Analytical results rejected during the data validation process (i.e., “R” qualified), or where the chemical identity is uncertain (i.e., “N” qualified) were not qualitatively or quantitatively evaluated.

- For duplicate samples (or constituents measured using two methods on the same sample [e.g., naphthalene via USEPA Methods 8260 and 8270]), the result to be used in the risk assessments was selected as follows: (1) if both samples reported positive detects, the higher measured analytical concentration was used, (2) if only one result was a positive detect, that concentration was used, or (3) if both samples reported non-detects, the lower SQL was used as the proxy concentration. The lower SQL was used because it is not reasonable to use the higher SQL when the duplicate analysis for the sample indicated that the constituent was not present at the lower SQL.

For purposes of the Supplemental Risk Assessment, the soil data were divided by sample depth interval based on the exposure pathways identified for the site. In brief, the soil data were categorized as follows:

- Surface and subsurface soil data (0 to 10 ft bgs) were used to evaluate potential exposure of human (future construction worker) and ecological receptors that could be exposed to subsurface soil (e.g., burrowing wildlife);

- Total soil data (vadose zone) were used to evaluate potential exposure of human receptors through the vapor intrusion exposure pathway; and

- Saturated vadose zone soil water data were assessed on a site by site basis for evaluating potential human exposure (i.e., potential for vapor intrusion).

The risk assessment data sets summarize the following: the number of detects, number of samples, frequency of detection (FOD), minimum and maximum detected concentrations, location of maximum detected concentration, minimum and maximum reporting limits, and upper confidence limit on the mean, and are presented in the attached Tables Data-1 (soil 0-10 foot (ft) depth interval), Data-2 (total soil), and Data-3 (saturated vadose zone soil water). No data set for soil 0 to 2 ft bgs is included in the Supplemental Risk Assessment because no data was collected in this depth interval.

2.2.1 Combined Surface and Subsurface Soil (0 to10 ft bgs)

Nine soil samples were collected in the 0 to 10 foot depth interval as part of the 2004 and 2009 investigations. Analytical results for these soil samples are summarized in Table Data-1. Combined surface and subsurface soil was analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), pesticides, total petroleum hydrocarbons (TPHs), explosives, and inorganics. Five inorganics were detected within this data set.

2.2.2 Total Soil (0 to 30 ft bgs)

Fifty-five soil samples were collected in the 0 to 30 foot depth interval as part of the 2004 and 2009 investigations. Analytical results for these soil samples are summarized in Table Data-2. Total soil was analyzed for VOCs, SVOCs, PAHs, pesticides, TPHs, explosives, and inorganics. Thirteen VOCs, three PAHs, one TPH, and seven inorganics were detected within this data set.

2.2.3 Saturated Vadose Zone Soil Water

Fourteen saturated vadose zone soil water samples were collected as part of the 2009 investigation. Analytical results for these soil water samples are summarized in Table

Data-3. Soil water was analyzed for VOCs, SVOCs, PAHs, TPHs, inorganics, and others. Eighteen VOCs, one PAH, one TPH, 6 inorganics, and methane were detected within this data set.

2.3 Human Health Risk Assessment

The purpose of this human health risk assessment (HHRA) is to evaluate the potential current and future risks and hazards to human health associated with constituents detected in soil samples and saturated vadose zone soil water collected from SWMU 197. Methods and parameters used in the HHRA are in compliance with NMED and USEPA guidance for risk assessments (NMED, 2009a; 2010; USEPA, 1989; 1991a,b; 1992; 1993b; 1999; 2002a,b; 2003a; 2005a,b).

2.3.1 Selection of Constituents of Potential Concern

The selection of constituents of potential concern (COPCs) is based primarily on the magnitude of the measured concentrations in the relevant environmental media, in relation to the appropriate screening level. Detected constituents for which a screening level is not available are also considered in the screening process. Non-detected constituents with sample quantitation limits (SQLs) exceeding their screening levels are identified during the screening process and discussed in the uncertainty section.

COPCs in the combined surface and subsurface soil (0 to 10 ft bgs) were identified by comparing maximum detected concentrations to the NMED (2009a,b) Soil Screening Levels (SSLs) for construction worker soil. The data screening table for soil presents construction worker screening levels. This was done because future hypothetical land use on-site may include construction activity.

For screening data at sites with multiple constituents, the following procedure was followed in accordance with NMED guidance (NMED, 2009a): separate the constituents by carcinogens and non-carcinogens, take the site-specific constituent concentration [represented by the maximum reported concentration], and divide by the screening level concentration for each constituent. For multiple constituents, simply add the ratio for each constituent and multiply by $1x10^{-5}$ for carcinogens or multiply by 1 for non-carcinogens. If the total screening risk is greater than the target risk level of 1×10^{-5} for carcinogens and/or greater than the target hazard index of 1 for non-carcinogens, then the concentrations at the site warrant further, site-specific evaluation in a risk assessment. Screening risk and hazard indices less than the target levels

indicate that the concentrations at the site are unlikely to result in adverse health impacts (NMED, 2009a).

For saturated vadose zone soil water at the Site, concentrations detected in the saturated vadose zone soil water were compared to vapor intrusion screening levels (USEPA, 2002). Saturated vadose zone soil water at SWMU 197 is not currently used for potable water, nor will it be used as such in the future. Therefore, screening based on potable use was not included in the HHRA.

2.3.1.1 Combined Surface and Subsurface Soil

Combined surface and subsurface soil COPCs were selected by comparing the analytical data with the appropriate screening levels and applying the NMED screening method. Table HHRA-1 presents the selection of the combined surface and subsurface soil COPCs for the HHRA.

The maximum concentrations of constituents in surface and subsurface soil (0 to 10 feet bgs) at SWMU 197 were compared to the construction worker SSLs. The total screening risk for carcinogenic effects could not be calculated because no carcinogens were detected at SWMU 197. The total screening hazard index for non-carcinogenic effects was 0.2 for the construction worker scenario. This total hazard index is less than the NMED target hazard index of 1.

As summarized in Table HHRA-1, no COPCs were identified for combined surface and subsurface soil at SWMU 197. This indicates that the constituent concentrations in surface and subsurface soil at the SWMU 197 are unlikely to result in adverse health impacts to future construction workers. Therefore, potential exposure to surface and subsurface soil at SWMU 197 is not evaluated further in this HHRA.

2.3.1.2 Total Soil

All detected VOCs in total soil (i.e., vadose zone) were selected as COPCs for the vapor intrusion evaluation because there are no NMED or USEPA soil screening levels for the vapor intrusion pathway. Table HHRA-2 presents the selection of the total soil COPCs for the HHRA. As summarized in Table HHRA-2, the following 16 volatile constituents were identified as vapor intrusion COPCs for the future industrial scenario and the future residential scenario:

Thirteen VOCs (benzene; n-butylbenzene; sec-butylbenzene; ethylbenzene; isopropylbenzene; toluene; methyl tert-butyl ether; n-propylbenzene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; m,p-xylene; o-xylene; and xylenes) and three PAHs (1-methylnaphthalene; 2-methylnaphthalene; and naphthalene).

2.3.1.3 Saturated Vadose Zone Soil Water

Saturated vadose zone soil water COPCs were selected by comparing the analytical data with vapor intrusion screening levels for groundwater (USEPA, 2002). Tables HHRA-3 and HHRA-4 presents the selection of the saturated vadose zone soil water COPCs for the human health risk assessment. As summarized in Table HHRA-3, the total screening risk for carcinogenic effects and the total screening hazard for non-carcinogenic effects were 2×10^{-2} and 632, respectively, at SWMU 197. The total screening risk is greater than NMED target risk of 1×10^{-5} and the total screening hazard is greater than the NMED target hazard of 1.

Because the total screening risk (using the maximum concentration) for carcinogenic effects was greater than the NMED target risk of 1×10^{-5}, and the total screening hazard index for non-carcinogenic effects was greater than the NMED target index of 1, the total screening risk and hazard using 95 percent upper confidence limits (95% UCLs) were calculated. The 95 percent UCL on the mean of constituents in saturated vadose zone soil water at SWMU 197 were compared to vapor intrusion screening levels for groundwater. The total screening risk for carcinogenic effects was 2×10^{-2} for the construction scenario. The total screening risk is above the NMED target level of 1×10^{-5}. The total screening hazard index for non-carcinogenic effects was 395.

Because the total screening risk for carcinogenic effects and the total screening hazard for non-carcinogenic effects using the UCLs were greater than the NMED target risk of 1×10^{-5} and the target hazard of 1, all detected volatile constituents are identified as COPCs for saturated vadose zone soil water for the vapor intrusion scenario. The 19 constituents selected as COPCs for saturated vadose zone soil water are listed below:

Eighteen VOCs (acetone, benzene; bromodichloromethane, 2-butanone, n-butylbenzene; sec-butylbenzene, chloroform, 1,2-dichloroethane, methylene chloride, ethylbenzene; isopropylbenzene; toluene; methyl tert-butyl benzene; n-propylbenzene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; m,p-xylene; and o-xylene) and one PAH (naphthalene).

2.3.2 Summary of Selected Constituents of Potential Concern

Thirteen VOCs and three PAHs were identified as COPCs for total soil to evaluate inhalation via vapor migration into a hypothetical future building. Eighteen VOCs and one PAH were identified as COPCs for saturated vadose zone soil water to evaluate inhalation via vapor migration into a hypothetical future building.

2.3.3 Toxicity Assessment

The toxicity assessment discusses the two general categories of toxic effects (non-carcinogenic and carcinogenic) and constituent-specific toxicity values used to calculate potential risks for these two types of toxic effects. Toxicity values for potential non-carcinogenic and carcinogenic effects are determined from available databases. For this HHRA, toxicity values were obtained from the following sources in order of priority as recommended by USEPA (2003a):

- Tier 1: USEPA's Integrated Risk Information System (IRIS) (USEPA, 2010a);
- Tier 2: National Center for Environmental Assessment (NCEA) Provisional Peer Reviewed Toxicity Values (PPRTV); and
- Tier 3: Additional USEPA and non-USEPA sources including the Agency for Toxic Substances and Disease Registry (ATSDR), the USEPA (2004a,b), and USEPA's Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997).

2.3.3.1 Toxicity Values for Non-carcinogenic Constituents

For many non-carcinogenic effects, protective mechanisms must be overcome before an adverse effect is manifested. Therefore, a finite dose (threshold), below which adverse effects will not occur, exists for non-carcinogens. Depending on the dose, a single compound might elicit several adverse effects within a given exposure route or during the duration of exposure. The susceptibility of the individual may also influence the adverse effect caused by various constituents. Constituents may exhibit their toxic effects at the point of application or contact (local effect) or at other sites (systemic effects) after they have been distributed throughout the body. Most constituents can produce more than one type of toxic effect, depending on the dose and the susceptibility of the exposed individual or receptor. The goal of toxicity studies for application in risk assessment is to identify the most sensitive toxic effect and the exposure levels that are expected to be safe. The potential for non-carcinogenic

effects is estimated by comparing a calculated exposure dose with a reference dose (RfD) for each individual constituent. The RfD represents a daily exposure level that is designed to be protective of human health, even for sensitive individuals or subpopulations.

For a given constituent, the dose or concentration that elicits no adverse effect when evaluating the most sensitive response in the most sensitive species is referred to as the "no observed adverse effect level" (NOAEL). The NOAEL is used to establish non-cancer toxicity values (called RfDs). The RfD represents a daily exposure level that is not expected to cause adverse non-carcinogenic health effects. Chronic RfDs are used to assess long-term exposures ranging from 7 years to a lifetime.

Table HHRA-5 presents the RfDs used to assess inhalation exposure. USEPA confidence values and uncertainty factors associated with the RfDs also are listed (USEPA, 2009). The uncertainty factor represents areas of uncertainty inherent in the extrapolation from the available data. The confidence levels (low, medium, high) assess the degree of confidence in the extrapolation of available data.

2.3.3.2 Toxicity Values for Carcinogenic Constituents

Cancer induction in humans and animals due to exposure to carcinogenic constituents proceeds through a complex series of reactions and processes. Carcinogenic constituents may produce tumors at the point of application or contact, or they may produce tumors in other tissues after they have been distributed throughout the body. Some constituents are associated only with one or two tumor types while others may cause tumors at many different sites.

Constituents are classified as known, probable, or possible human carcinogens based on a USEPA weight-of-evidence scheme in which they are systematically evaluated for their ability to cause cancer in humans or laboratory animals. The USEPA classification scheme (USEPA, 1989) contains five classes based on the weight of available evidence, as follows:

A known human carcinogen;

B probable human carcinogen:

B1 probable human carcinogen—limited evidence in humans;

B2 probable human carcinogen—sufficient evidence in animals and inadequate data in humans;

C possible human carcinogen—limited evidence in animals;

D inadequate evidence to classify; and

E evidence of noncarcinogenicity.

Constituents in Classes A, B1, and B2 generally are evaluated as carcinogens in risk assessments; however, Class C carcinogens may be evaluated on a case-by-case basis (USEPA, 1989).

For most carcinogens, USEPA (2005a) uses an extremely conservative approach in which it is assumed that any level of exposure could cause cancer. Based on this assumption, USEPA extrapolates from laboratory animal data using a mathematical model known as the linear multi-stage model. This model plots a line through the zero point and, based on the slope of this dose-response line, assigns a risk level for increasingly smaller doses of a particular compound. The 95 percent upper confidence limit for the slope of this line, called the cancer slope factor (CSF), is used to calculate the probability of an effect associated with a given dose. USEPA's slope factors thus are determined by a methodology that is likely to overestimate real risk.

Table HHRA-6 presents the carcinogenic toxicity values for inhalation exposure for the COPCs at SWMU 197. The carcinogenic toxicity value used in the calculation of potential cancer risks is the CSF, which is derived from the conservative assumption that any dose level has a possibility of causing cancer.

2.3.4 Exposure Assessment

The purpose of the exposure assessment is to evaluate the ways receptors might be exposed to constituents at a site. Without exposure there is no risk; thus, the exposure assessment is a key element of the risk assessment. The exposure assessment includes characterization of the physical environment, identification of exposure pathways (including migration pathways, exposure points, and exposure routes), and identification of potentially exposed individuals and populations.

2.3.4.1 Receptors and Exposure Pathways

Exposure pathways were identified based on the site characterization information and the fate and transport properties of the constituents detected on-site to identify likely points where human receptors may come in contact with affected media under current or potential future conditions at SWMU 197. The principal pathways by which exposure could occur at the site were identified for human receptors.

An exposure pathway consists of the following four elements: (1) a source and mechanism of constituent release to the environment, (2) a retention or transport medium for the released constituent, (3) a point of potential contact by the receptor with the impacted medium (the exposure point), and (4) a route of exposure to the receptor at the exposure point (e.g., ingestion, inhalation, or dermal contact).

2.3.4.2 Potential Receptors

This element of the exposure assessment identifies potential receptors present at SWMU 197. Volatile COPCs for total soil and saturated vadose zone soil water were evaluated for inhalation via vapor migration into hypothetical future buildings. Since no buildings currently exist at SWMU 197 the potential for vapor intrusion is an incomplete exposure pathway under current conditions, and would only be considered a potentially complete pathway in a future scenario that would involve the construction of a building on site.

SWMU 197 is wholly contained within an operating military installation, and based on past, present, and anticipated future land use for SWMU 197, it is reasonable to assume that SWMU 197 will remain in military use as opposed to other commercial or residential development. This logic is supported by the USEPA/ Office of Solid Waste and Emergency Response (OSWER) “Land Use Directive” (USEPA, 1995). Nevertheless, for purposes of conducting a comprehensive exposure assessment and in accordance with NMED guidance, it is assumed that a hypothetical future resident (child and adult) could be exposed to site-related COPCs in affected media at the site.

The following receptors were identified for quantitative analysis at each site:

- Future Site Worker; and
- Hypothetical Future Adult and Child Resident.

2.3.4.3 Exposure Parameters

This element of the exposure assessment identifies potentially complete pathways of exposure (e.g., inhalation of vapor from soil and saturated vadose zone soil water) to site-related constituents in soil by human receptors. This HHRA evaluated the potential for vapor intrusion to occur under potential future conditions. Potential exposure pathways associated with each receptor are identified below.

Future Site-Worker

Hypothetical future workers may be exposed to COPCs via inhalation of volatiles migrating to indoor air from subsurface soils and saturated vadose zone soil water. This pathway is only applicable for a hypothetical future scenario in which a building is placed over the affected media containing VOCs. The potential for exposure to vapors migrating to indoor air from total soil and saturated vadose zone soil water was evaluated for the hypothetical future site worker using the Screening-Level Johnson and Ettinger Model.

The exposure factors and equations that are used to calculate the chronic daily intake for hypothetical future site workers are presented in Table HHRA-7 (soil, future land-use conditions) and Table HHRA-8 (saturated vadose zone soil water, future land-use conditions). These exposure factors are summarized as follows:

- Exposure duration of 25 years (NMED, 2009a);
- Exposure frequency of 225 days/year (NMED, 2009a);
- Exposure time of 8 hours/day (USEPA, 1991b); and
- The volatilization factor for soils is calculated based on site-specific information.

Future Adult Resident

As discussed previously, SWMU 197 is wholly contained within an operating military installation, and based on past, present, and anticipated future land use for SWMU 197, it is reasonable to assume that sites will remain in military use as opposed to other commercial/industrial or residential development. This logic is supported by the USEPA/OSWER “Landuse Directive” (USEPA, 1995). Nevertheless, for purposes of conducting a comprehensive exposure assessment and in accordance with NMED guidance for the unrestricted future land use scenario, it is assumed that a hypothetical future resident (child and adult) could be exposed to site-related COPCs in affected soil and saturated vadose zone soil water at SWMU 197. Therefore, the potential for exposure to vapors migrating to indoor air from total soil and from saturated vadose zone soil water was evaluated for the hypothetical future resident using the Screening-Level Johnson and Ettinger Model.

The exposure factors and equations that were used to calculate the chronic daily intake for future hypothetical adult resident are presented in Table HHRA-9 (soil, future land-use conditions) and Table HHRA-10 (saturated vadose zone soil water, future land-use conditions).The adult exposure parameters are summarized as follows:

- Adult soil ingestion rate of 100 mg/day (NMED, 2009a);
- Exposure frequency of 350 days per year (NMED, 2009a);
- Exposure duration of 30 years (NMED, 2009a); and
- Exposure time of 24 hours/day.
- Exposed skin surface area for face, forearms, hands, and lower legs is 5,700 cm2 for soil exposure (NMED, 2009a);
- Soil adherence rate of 0.07 mg/cm2 (NMED, 2009a); and
- Body weight of 70 kg for an adult (NMED, 2009a).

Because exposure factors are different for adults and children, potential cancer risks were calculated using age-adjusted factors consistent with USEPA *Risk Assessment Guidance for Superfund* (RAGS) Part B (USEPA, 1991b) and NMED guidance (2009a). Age-adjusted factors (for 0 to 30 year exposure period) include body weight, exposure duration, ingestion rates, and skin surface area.

Future Child Resident

The exposure factors and equations that are used to calculate the non-cancer chronic daily intake for future hypothetical child resident through inhalation of vapors migrating to indoor air and saturated vadose zone soil water are presented in Table HHRA-11 (soil, future land-use conditions) and Table HHRA-12 (saturated vadose zone soil water, future land-use conditions). The child exposure parameters are summarized as follows:

- Soil ingestion rate of 200 mg/day (NMED, 2009a);
- Exposure frequency of 350 days per year (NMED, 2009a);

- Exposure duration of 6 years (NMED, 2009a); and
- Exposure time of 24 hours/day.
- Exposed skin surface area for face, forearms, hands, lower legs, and feet is 2,800 cm2 for soil exposure (NMED, 2009a);
- Soil adherence rate of 0.2 mg/cm2 (NMED, 2009a); and
- Body weight of 15 kg (NMED, 2009a).

Future Medical Aid Building Worker

The nearest current building to SWMU 197, the Medical Aid Building (26020) located approximately 100 feet to the southeast, was also evaluated for the vapor intrusion pathway. This evaluation assumes that in a hypothetical future scenario, the saturated vadose zone soil water plume at SWMU 197 is located directly beneath the medical aid building with building dimensions of 88 feet x 55 feet x 8 feet. Based on the exposure duration within the building (i.e., 24 hour work day shift), the exposure parameters used for the medical aid workers are slightly different than the site workers. The exposure factors and equations that are used to calculate the non-cancer chronic daily intake for future hypothetical medical aid worker through inhalation of vapors migrating to indoor air are presented in Table HHRA-13.

2.3.4.4 Calculation of Exposure Point Concentrations

USEPA (1989) defines the exposure point concentration (EPC) as “the arithmetic average of the concentration that is contacted over the exposure period.” To ensure that the estimate of the average (or mean) is conservative and not underestimated, USEPA (1989, 1992) recommends using the 95% upper confidence limit of the mean (95UCL) as an estimate for the EPC for each exposure area of a site. Statistical software provided by USEPA (i.e., ProUCL 4.00.05) has, to some extent, automated the process of calculating 95% UCLs and selecting the most representative statistic based on characteristics of the data set such as sample size, measures of variance, and frequency of detection (FOD). USEPA’s ProUCL 4.00.05 statistical software (USEPA, 2010b) was utilized to calculate EPCs for each exposure scenario evaluated. EPCs are presented in Table HHRA-14. The ProUCL output is provided in Attachment D.

2.3.4.5 Indoor Air

The potential for exposure to vapors from indoor air resulting from vapor intrusion from total soil was evaluated for the hypothetical future site worker and hypothetical future resident using the USEPA vapor intrusion model (USEPA, 2004b). This is a very conservative model that utilizes default parameters to evaluate potential risks from vapor inhalation in indoor air. There are no buildings currently on or near SWMU 197. Therefore, there is no potential for vapor intrusion to be a complete pathway under current conditions. The vapor intrusion scenarios evaluated in this HHRA are applicable for hypothetical future conditions in which buildings might be constructed overlying VOC impacted soil and saturated vadose zone soil water.

2.3.5 Risk Characterization

Potential risks to human health are evaluated quantitatively by combining calculated daily intakes and toxicity data. A distinction is made between non-carcinogenic and carcinogenic endpoints, and two general criteria are used to describe risk: the hazard quotient (HQ) for non-carcinogenic effects and excess lifetime cancer risk (ELCR) for constituents evaluated as human carcinogens.

2.3.5.1 Non-carcinogenic Effects – Hazard Quotients and Hazard Indices

Exposure doses are averaged over the expected exposure period to evaluate non-carcinogenic effects. The HQ is the ratio of the estimated exposure dose and the RfD. An HQ greater than 1 indicates that the estimated exposure level for that constituent is greater than the RfD. This ratio does not provide the probability of an adverse effect. Although an HQ of less than 1 indicates that adverse health effects should not occur, an HQ that is greater than 1 does not imply that health effects will occur, but that health effects are possible.

The sum of the HQs is the hazard index (HI). A limitation with the HI approach is the assumption of dose additivity is applied to compounds that may induce different effects by different mechanisms of action. Consequently, the summing of HIs for a number of compounds that are not expected to induce the same type of effects or that do not act by the same mechanism may overestimate the potential for toxic effects (USEPA, 1989). Consistent with NMED and USEPA risk assessment guidelines for constituent mixtures, in the event that the total HI for an exposure scenario is greater than 1, it is incumbent on a risk assessor to segregate HQs by target organ/critical effect (NMED, 2009a; USEPA, 1989). Therefore, if the calculated HI is greater than 1 as a

consequence of summing several HQs for constituents not expected to induce the same type of effects or that do not act by the same mechanism, the HIs may be segregated by effect and mechanism of action to derive separate HIs for each target-organ/critical-effect group (NMED, 2009a; USEPA, 1989). Where target organ HIs exceeded one, the COPCs contributing to those HIs are identified.

2.3.5.2 Carcinogenic Effects - Excess Lifetime Cancer Risk

The ELCR is an estimate of the potential increased risk of cancer that results from lifetime exposure, at specified average daily dosages, to COPCs at a site. Estimated doses or intakes for each COPC are averaged over the average lifetime of 70 years. It is assumed that a large dose received over a short period is equivalent to a smaller dose received over a longer period, as long as the total doses are equal. The ELCR is calculated as the product of the exposure dose and the CSF. The use of upper percentile EPC and reasonable maximum exposure (RME) parameters result in a risk estimate that is considered to be an upper-bound estimate; in other words, the true risk is less than that predicted by the model.

2.3.5.3 Human Health Risk Characterization

The toxicity values used to evaluate excess lifetime cancer risks and non-cancer hazards for the COPCs are presented in Tables HHRA-5 and HHRA-6. The exposure assumptions used to evaluate potentially exposed receptors are presented in Tables HHRA-7 through HHRA-13. The equations used in the risk characterization calculations are presented in Tables HHRA-7 through HHRA-13. Estimated EPCs in indoor air are presented in Tables HHRA-15 and HHRA-16.

Volatile COPCs for total soil and saturated vadose zone soil water were evaluated for inhalation via vapor migration into hypothetical future buildings. Since no buildings currently exist at SWMU 197, the potential for vapor intrusion is an incomplete exposure pathway under current conditions, and would only be considered a potentially complete pathway in a future scenario that would involve the construction of a building on-site. Therefore, potential exposures of a future site worker, and hypothetical future adult and child residents were evaluated for SWMU 197. As discussed previously, the nearest current building to SWMU 197, the Medical Aid Building (26020), was also evaluated in this assessment. This evaluation assumes that the saturated vadose zone soil water plume is located directly beneath the medical aid building. The Medical Aid Building is located approximately 100 ft southeast of the TSA spill site and, based on investigation results, the extent of impacts in vadose zone water from the spill is

limited to within an approximately 30 ft radius of the original spill. The excess lifetime cancer risks and non-cancer hazards for each potentially exposed receptor included in the risk assessment for SWMU 197 are summarized in the tables and subsections below.

2.3.5.4 Future Site Worker - Vapor Intrusion Scenario

A future site worker could be present at SWMU 197, and could be exposed to VOCs in total soil and saturated vadose zone soil water via vapor migration to indoor air (vapor concentrations in indoor air are calculated in Tables HHRA-17 through HHRA-20). The ELCR and HI for future site worker exposure to indoor air are presented in Table HHRA-21 (for total soil) and Table HHRA-22 (for saturated vadose zone soil water).

The total cumulative ELCR for a future site worker exposed to VOCs in total soil via vapor migration to indoor air is 2×10^{-5} which is within the acceptable target risk range of 1×10^{-6} to 1×10^{-4}. The total cumulative HI for a future site worker is 10, which is greater than the benchmark of 1.

When the HI is segregated into COPC-specific target organ site and critical effects, the HI for nasal and lung is 8, which is above the benchmark of 1. The segregation of the total HI by target organ site and critical effects is consistent with USEPA and NMED guidance (USEPA, 1989; NMED, 2009a).

The total cumulative ELCR for a future site worker exposed to VOCs in saturated vadose zone soil water via vapor migration to indoor air is 1×10^{-4} which is within the acceptable target risk range of 1×10^{-6} to 1×10^{-4}. The total cumulative HI for a future site worker is 2, which is greater than the benchmark of 1.

When the HI is segregated into COPC-specific target organ site and critical effects, the HI for all target organs were equal to or less than the benchmark of 1.

2.3.5.5 Hypothetical Future Residents - Vapor Intrusion Scenario

In the unlikely event the site is redeveloped in the future as a residential area, a hypothetical future adult and child resident could be present at SWMU 197 and could be exposed to VOCs in total soil and saturated vadose zone soil water via vapor migration into indoor air. The ELCR and HI for hypothetical future resident exposure to indoor air are presented in Table HHRA-23 (for total soil) and Table HHRA-24 (for saturated vadose zone soil water).

The total cumulative ELCR for a hypothetical age-adjusted future resident exposed to vapors in indoor air migrating from total soil at SWMU 197 is 1 x 10^{-4}, which is within the acceptable target risk range of 1 x 10^{-6} to 1 x 10^{-4}. The total cumulative HI for a hypothetical future child resident is 50, which is greater than the benchmark of 1.

When the HI is segregated into COPC-specific target organ site and critical effects, the HIs for central nervous system, immune system and whole body effects, and nasal and lung effects are 4 and 39 respectively, which are above the benchmark of 1.

The total cumulative ELCR for a hypothetical age-adjusted future resident exposed to vapors in indoor air migrating from saturated vadose zone soil water at SWMU 197 is 6 x 10^{-4}, which is above the acceptable target risk range of 1 x 10^{-6} to 1 x 10^{-4}. The total cumulative HI for a hypothetical future child resident is 10, which is greater than the benchmark of 1.

When the HI is segregated into COPC-specific target organ site and critical effects, the HIs for blood and nasal and lung effects are 6 and 4, respectively, which are above the benchmark of 1.

Hypothetical Future Medical Aid Building Worker – Vapor Intrusion Scenario

As discussed above, the nearest current building to SWMU 197, the Medical Aid Building (26020), was also evaluated in this assessment. This evaluation assumes that the saturated vadose zone soil water plume is located directly beneath the medical aid building. Vapor concentrations in indoor air are calculated in Tables HHRA-25 through HHRA-26. The ELCR and HI for hypothetical future medical aid worker exposure to indoor air are presented in Table HHRA-27.

The total cumulative ELCR for a hypothetical future medical aid worker exposed to VOCs in saturated vadose zone soil water via vapor migration to indoor air is 9 x 10^{-5} which is within the acceptable target risk range of 1 x 10^{-6} to 1 x 10^{-4}. The total cumulative HI for a future medical aid worker is 2, which is greater than the benchmark of 1.

However, when the HI for medical aid building worker exposure to indoor air is segregated by COPC-specific target organ site and critical effects (as shown in Table HHRA-18), none of the target organ-specific HIs are above the benchmark of 1, indicating adverse non-carcinogenic effects are unlikely to occur.

2.3.6 Uncertainties in the HHRA

The risk estimates presented herein are a conservative estimate of potential risks associated with exposure to constituents detected in soil at SWMU 197. Each of the three basic building blocks for risk assessment (monitoring data, exposure scenarios, and toxicity values) contributes uncertainties. Each of the uncertainties is accounted for by using conservative assumptions wherever site-specific data are unavailable.

This risk assessment is based on the assumption that the available monitoring data adequately describe the occurrence of constituents in media at the site. Environmental sampling itself introduces uncertainty. This source of uncertainty can be reduced through a well-designed sampling plan, use of appropriate sampling techniques, and implementation of laboratory data validation and quality assurance and quality control (QA/QC). The data utilized in this report meet QA/QC requirements and are appropriate for use in a risk assessment.

The assumption that the concentrations will remain constant throughout the exposure period is a conservative approach, since ongoing natural attenuation and degradation processes likely will reduce the concentrations over time. Using the UCL or the maximum concentration as the EPC is also conservative. It is highly unlikely that receptors would be exposed to those upper bound concentrations over an extended period of time.

The toxicity values and other toxicological information used in this report likewise are associated with significant uncertainty. Many toxicity values are developed using results of studies in which laboratory animals are exposed to massively high doses of particular constituents over an entire lifetime. As such, these studies do not represent realistic examples of environmental exposures. In addition, humans are different than laboratory animals. Many, if not most, animals used for laboratory studies are genetically designed to be more sensitive than humans to specific compounds. In addition, the effects shown by the animals in the high-dose studies are often very different than effects reported by humans in parallel epidemiological studies. This is because a particular compound may have a different mechanism of action in laboratory animals than it does in humans. Even epidemiological studies, which are generally preferable to animal toxicity studies, are characterized by several uncertainties, such as differential exposures and unknown (and uncontrolled) doses. Furthermore, some toxicity values are based on draft toxicity values and therefore may also produce uncertainty within the results.

Toxicity values are not available for dermal exposure. The USEPA-recommended approach to derivation of dermal toxicity values based on available oral toxicity values and oral absorption efficiencies contributes considerable uncertainty to the risk assessment.

Uncertainty is also associated with constituent mixtures. Information on the toxicity of specific mixtures is rarely available. The procedure generally applied to a potential event of simultaneous exposure to multiple constituents from a variety of sources assumes dose additivity, although it is possible that the interaction of multiple constituents could be synergistic or antagonistic.

Potential exposure scenarios contribute uncertainty to the risk assessment as well. The hypothetical future residential scenarios which assumes that receptors will be exposed to site soil is highly unrealistic since the site will most likely not be used for residential use. In addition, the hypothetical exposure scenario for personnel in the Medical Aid Building assumes that the vadose zone water plume is located under the building. Based on investigation results, this condition does not exist at the site. Exposure scenarios were developed based on site-specific information, NMED and USEPA exposure guidance documents, and professional judgment. Although uncertainty is inherent in the exposure assessment, and the exposure assumptions also were chosen to err on the side of conservatism, this uncertainty could lead to an overestimation or underestimation of potential risk.

Twenty VOCs (acrylonitrile, bromomethane, tert-butylbenzene, carbon tetrachloride, CFC-11, CFC-12, chlorobenzene, chloromethane,1,2-dibromomethane, 1,1-dichloroethylene, cis-1,2-dichlororethene, trans-1,2-dichloroethene, 1,2-dichloropropane, tetrachloroethene, 1,1,1,2-tetrachlororethane, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,2,3-trichloropropane, trichloroethylene, and vinyl chloride) were not detected in the saturated vadose zone soil water, but had some SQLs greater than the screening values. Because these constituents were not detected in any sample collected from SWMU 197, it is not possible to conduct a quantitative evaluation. However, it is unlikely that their presence would have a significant effect on the overall outcome of the risk assessment.

Methane was detected in the saturated vadose zone soil water. A methane groundwater vapor intrusion screening level was not available, nor were toxicity values available for methane; therefore a quantitative risk evaluation of methane could not be conducted.

2.3.7 Human Health Risk Summary

2.3.7.1 Soil Exposure Scenarios

In accordance with NMED guidance (NMED, 2009a), constituent concentrations in combined surface and subsurface soil (0 to 10 ft bgs) were compared to health-based screening levels and the calculated ratios summed and multiplied by $1x10^{-5}$ for carcinogens or by 1 for non-carcinogens. The total screening risks for carcinogenic effects were less than the NMED target risk of 1×10^{-5}. The total screening hazard indices were less than the NMED target hazard index of 1. The results of this data screening process indicate that after comparison to health-based soil screening levels for construction worker exposure, no COPCs were selected for combined surface and subsurface soil at the Site. This demonstrates that the constituent concentrations in combined surface and subsurface soil at SWMU 197 are unlikely to result in adverse health impacts to future construction workers via direct contact exposure (i.e., ingestion, inhalation of vapor/dust, dermal).

2.3.7.2 Vapor Intrusion Scenarios

Nineteen VOCs were detected in the shallow saturated vadose zone soil water. All detected VOCs in saturated vadose zone soil water were compared to the USEPA (2002c) groundwater screening levels for the protection of human health from vapor intrusion, and the calculated ratios summed and multiplied by $1x10^{-5}$ for carcinogens or by 1 for non-carcinogens. The total screening risk for carcinogenic effects was greater than the NMED target risk of 1×10^{-5}. The total screening hazard index was above the NMED target hazard index of 1.

All detected VOCs in total soil (i.e., vadose zone) were selected as COPCs for the future vapor intrusion evaluation because there are no NMED or USEPA soil screening levels that are protective of the vapor intrusion pathway.

The total ELCR value for the future vapor intrusion exposure pathway for the site worker scenario is within the acceptable target risk range of 10^{-6} to 10^{-4} for carcinogenic effects. The total HI value for the future vapor intrusion exposure pathway for the site worker scenario is above the benchmark of 1 for non-cancer hazard. When the HI for site worker exposure to indoor air is segregated by COPC-specific target organ site and critical effects, the HIs for blood and nasal and lung are above the benchmark of 1.

The total ELCR value for the vapor intrusion exposure pathway for a hypothetical future age-adjusted resident (0 to 30 years) is above the acceptable target risk range of 10^{-6} to 10^{-4} for carcinogenic effects. The total HI value for the vapor intrusion exposure pathway for a hypothetical future child resident scenario is above the benchmark of 1. When the HI for a hypothetical future child resident exposure to indoor air is segregated by target site and critical effects, the HIs for liver and kidney, CNS, whole body, immune system, blood, and nasal and lung are above the benchmark of 1.

The total ELCR value for the vapor intrusion exposure pathway for a hypothetical future medical aid building worker is within the acceptable target risk range of 10^{-6} to 10^{-4} for carcinogenic effects. The total HI value for the future vapor intrusion exposure pathway for the site worker scenario is above the benchmark of 1 for non-cancer hazard. However, when the HI for a hypothetical future medical aid building exposure to indoor air is segregated by COPC-specific target organ site and critical effects, none of the HIs were above the benchmark of 1, indicating adverse non-carcinogenic effects are unlikely to occur.

2.4 Ecological Risk Assessment

The purpose of the ecological risk assessment (ERA) is to evaluate whether ecological receptors may be adversely impacted by exposure to site-related constituents detected in combined surface and subsurface soil at SWMU 197. The ERA was conducted in a manner consistent with NMED and USEPA guidance for ecological risk assessment (NMED, 2008; USEPA 2001a; 2000a; 1997c). This ERA is intended to provide input for risk management decision-making for SWMU 197, while maintaining a conservative approach protective of wildlife populations and communities.

In accordance with USEPA guidance, this ERA is comprised of a screening level ecological risk assessment (SLERA) and a baseline ecological risk assessment (BERA) (NMED, 2008; USEPA, 2000a; 1997c). The SLERA evaluates the potential risk to terrestrial ecological receptors exposed to constituents in surface and subsurface soil. The SLERA provides a conservative estimate of potential ecological risks and compensates for uncertainty by incorporating numerous conservative assumptions. The purpose of the SLERA is to determine whether or not there is a high probability that there are no ecologically significant risks that would merit additional evaluation as provided by a BERA (USEPA, 2000a; 1997c). If the results of the SLERA warrant a BERA, the information developed in the SLERA is used to help focus the BERA. The BERA is more complex than the SLERA and uses more realistic and

site-specific information about potential exposures and effects in order to evaluate potential ecological risks.

The approach used to assess ecological risks associated with SWMU 197 is based on the USEPA eight-step process (USEPA, 2001a; 2000a; 1997c), as summarized in Figure 2-2. An expanded view of the USEPA eight-step process is provided in Figure 2-3. As illustrated on Figure 2-3, the USEPA paradigm divides Step 3 into two pieces, Step 3a and Step 3b (USEPA, 2000a). Step 3a allows for a more refined analysis of available information, while Steps 3b and beyond focus on further evaluation(s) for only those receptors, media, and constituents that are identified in previous steps. According to the USEPA (2000a), "for the majority of sites, ERA activities will cease after the completion of Step 3a." The details of each step and how they relate to the site ERA are described in this section.

The ERA process culminates in clearly defined scientific management decision points (SMDPs). The SMDPs represent critical steps where risk management decision-making occurs. Generally, the following types of decisions are considered at the SMDPs.

- Whether the available information is adequate to conclude that ecological risks (if any) are negligible and, therefore, there is no need for further action on the basis of ecological risk.

- Whether the available information is inadequate to make a decision at this point and the ecological risk assessment process should continue.

- Whether the available information indicates a potential for adverse ecological effects and a more thorough assessment or remediation is warranted.

The remainder of this section presents the methods used in the ERA and is organized as follows:

- Screening Level Ecological Risk Assessment – this section discusses the steps taken in the SLERA and indentifies results that would indicate the need for a more refined BERA; and

- Baseline Ecological Risk Assessment– this section discusses the steps taken in the BERA.

2.4.1 Screening Level Ecological Risk Assessment

A SLERA conservatively estimates potential risks that may affect ecological receptors, including terrestrial and aquatic organisms. The SLERA typically compensates for uncertainty in a precautionary manner, by incorporating numerous conservative assumptions. The outcome of the SLERA is the conclusion that either there is a high probability that ecologically significant risks are not posed to receptors, or further investigation in the form of a BERA is warranted. The SLERA is comprised of the following steps:

- Step 1: Screening-Level Problem Formation and Effects Evaluation;
- Step 2: Screening Level Exposure Estimate and Risk Calculation; and
- Scientific Management Decision Point (SMDP).

Step 1: Screening-Level Problem Formulation and Screening Level Ecological Effects Evaluation

Step 1 of a SLERA consists of both a screening level problem formulation and a screening level ecological effects evaluation. The screening-level problem formulation presents background information on site characterization, receptors, ecosystem characteristics, as well as information on the sources and effects of the stressors (USEPA, 1998). This information is used to develop a conceptual site model (CSM) that illustrates the potential relationships between stressors, pathways, and receptors such as:

- Environmental Setting;
- Identification of Constituents Detected;
- Description of Constituent Fate and Transport Pathways;
- Description of Constituent Mechanisms of Ecotoxicity;
- Description of Potentially Exposed Receptors;
- Identification of Potentially Complete Exposure Pathways; and

- Selection of Generic Assessment and Measurement Endpoints.

2.4.1.1 Environmental Setting

As discussed in Section 2.1, the HELSTF TSA is located approximately 20 miles east-northeast of the White Sands Missile Range (WSMR) Main Post Headquarters on US Highway 70 in Otero County, New Mexico and approximately 2 miles southeast of the main HELSTF operations area. The HELSTF TSA was constructed in 1987 to support the main HELSTF operations area with facilities engineering support and includes an aboveground storage tank (AST) that formerly held gasoline, a gasoline fueling island, medical facilities, fire station, cafeteria, maintenance facilities, and staging areas (Figure 2-1).

On March 16, 2000, WSMR discovered that a release of unleaded gasoline had occurred at the TSA gasoline station. After the gasoline storage and distribution system was evaluated, it was determined that the release occurred along the underground supply line running from the AST to the dispenser island. SWMU 197 is a small area paved in concrete and measuring approximately 30 feet by 30 feet where the gasoline spill occurred.

The following section describes the habitat at SWMU 197.

2.4.1.1.1 Terrestrial Habitat

No significant terrestrial habitat is present on or surrounding SWMU 197 because the site is covered with concrete pavement. Photographs of SWMU 197 were taken during the site reconnaissance in March 2009 and are provided in Attachment A. Ecological characterization worksheets for SWMU 197 are provided in Attachment C.

It is important to note that due to its current land cover (i.e., concrete pavement), SWMU 197 does not provide any significant habitat for ecological receptors and there are no complete exposure pathways to potentially affected media (i.e., soil) under current conditions. The potential risks described below are only associated with hypothetical future use conditions where no exposure barriers exist (i.e., where the current land cover has been removed).

2.4.1.2 Identification of Constituents Detected

The soil depth horizon of interest defined by NMED (2008) is from the ground surface to a depth of 10 ft bgs. While many wildlife species would only be exposed to near surface soils (e.g., 0 to 2 ft bgs), the subsurface soils down to a depth of 10 ft bgs were included in the evaluation to address potential exposure scenarios in the event there are burrowing wildlife or vegetation with deep rooting zones. The range of detected concentrations and other relevant statistics for the combined surface and subsurface soil data (0 to 10 ft bgs) was summarized for the site. Subsurface soil (i.e., soil at a depth greater than 10 ft bgs) was not evaluated with regard to ecological risks due to limited potential for wildlife exposures.

Soil data for SWMU 197 were evaluated as discussed in Section 2.2 and data summaries were prepared. The data summary tables present the frequency of detection, the range of sample quantitation limits, the range of detected concentrations, and the EPC for each detected constituent in each medium.

2.4.1.3 Description of Constituent Fate and Transport Pathways

Knowledge about the potential constituent fate and transport pathways is vital to understanding which constituents and receptors are associated with potentially complete current and future exposure pathways. This is because a constituent may reach an ecological receptor in a variety of ways. In addition, the pathway and route of exposure may have a strong influence on the ecological effect of a constituent. This information is used in the development of a CSM for potential ecological receptors.

2.4.1.4 Description of Constituent Mechanisms of Ecotoxicity

The mechanisms of ecotoxicity for constituents vary depending on a wide range of factors, such as constituent concentrations, the receptor species exposed, the exposure route (e.g., ingestion or direct contact), and physical factors (e.g., pH, soil type). Some of the effects that could be observed in wildlife are mortality, reduced reproductive ability, decreased fertility, decreased offspring survival, alteration of immune and behavioral function, decreased hatching success of eggs/larvae, and retarded growth (Sample et al., 1996; USEPA, 2001b). The remainder of this subsection discusses mechanisms of ecotoxicity for the classes of constituents detected at SWMU 197. These descriptions of constituent mechanisms of toxicity are presented without consideration of constituent concentrations, as the descriptions are

intended to convey an understanding of possible effects, rather than to describe the concentrations at which these effects might occur.

Volatile Organic Compounds

VOCs tend to attenuate rapidly in surface soil due to their inherent volatility. Although the effects of VOCs on ecological receptors are not well-understood, there have been extensive inhalation studies of the effects of VOCs under laboratory conditions. Inhaled volatile organics are typically metabolized in the body (often the liver), which may cause liver damage (depending on the organism) or the release of more toxic secondary metabolites. The VOCs or their metabolites may also cause neurological damage, and many are mutagenic or carcinogenic. Additionally, some VOCs are fetotoxic and/or teratogenic (USEPA, 1993a, 2003b, 2010; Sample et al., 1996; ATSDR, 2010).

Semi-Volatile Organic Compounds

Semi-volatile organic compounds (SVOCs) include a wide variety of compound classes, such as phenols, organochlorine alkenes, phthalates, and polycyclic aromatic hydrocarbons (PAHs). SVOCs vary greatly in regard to their toxicity, mechanism of action, bioaccumulative potential, and susceptibility to being metabolized. Phthalates, a class of SVOCs, are known endocrine disruptors affecting sexual development in males. They are common in the environment, but do not dissolve easily in water and generally attach strongly to soil particles. PAHs such as acenaphthene and naphthalene are often released to the environment as a result of human activities, including the incomplete combustion of fossil fuels or other organic materials. Most PAHs are sorbed to solid particles in the environment, which radically reduces the bioavailability and toxicity of the sorbed PAHs. PAHs have been shown to cause changes in liver enzymes and to perturb cell membranes, but in general, are not viewed as acutely toxic.

Inorganics

Many trace inorganics (e.g., cobalt, copper, chromium, iron, manganese, nickel, molybdenum, selenium, and zinc) are important in plant and animal nutrition, but the optimal concentration ranges are usually narrow (Leland and Kuwabara, 1985). Other

inorganics are nonessential, such as lead, cadmium, and mercury, and are toxic to receptors at very low concentrations.

Trace metals (such as arsenic, barium, beryllium, chromium, copper, lead, and zinc) are better understood than some organics (i.e., SVOCs, pesticides) with respect to their potential adverse impacts on aquatic wildlife (Newman, 1998). Chromium, copper, and zinc are essential for healthy enzyme function, and some organisms cannot survive without these metals. However, these naturally occurring constituents may cause adverse effects when exposure occurs at concentrations that significantly exceed background concentrations. The toxicity and effects of trace metals may be greatly influenced by pH and organic carbon content of the media in which they occur (Leland and Kuwabara, 1985).

Imbalances in the essential trace metals may cause a decrease in photosynthetic ability, poor spawning/hatching success, teratogenesis, susceptibility to predation and disease, reduced growth, mortality, histopathological changes, organ dysfunction of the liver or kidneys, neurological defects, changes in respiration and osmoregulation, and anemia. Some metals may bioaccumulate, but this mechanism is thought to be a less important ecological concern. Because these constituents are naturally occurring, many organisms have a capacity (albeit limited) to biotransform and/or eliminate naturally occurring inorganics (Newman, 1998; Leland and Kuwabara, 1985).

2.4.1.5 Description of Potentially Exposed Receptors

The identification of the categories of receptors most likely to be exposed helps to focus the SLERA. Potentially exposed receptors are designated based on the available habitat associated with SWMU 197. As described above, potentially exposed receptors include terrestrial wildlife (including mammals, birds, reptiles, and invertebrates), and terrestrial plants. However, it should be noted that surface soil (i.e., 0 to 2 ft bgs) at the site is not impacted and thus exposure by ecological receptors to site-related constituents in subsurface soil will be limited to receptors that have access to subsurface soils (e.g., burrowing wildlife).

This section also provides an evaluation of potential exposures to individual organisms of threatened and endangered species at the sites. The New Mexico Department of Game and Fish (NMDFG) biennial review of threatened and endangered species in New Mexico does list several birds, plants, fish, amphibians and reptiles as species of conservation concern in Socorro County. However, previous ecological evaluations of the facility have determined that there are no rare, threatened or endangered species

known or expected to occur in the habitat present at SWMU 197 (White Sands Technical Services, 2008). Furthermore, it has been reported that the habitat present at the site is not considered rare or sensitive by any of the regulatory agencies that oversee these issues, including the U.S. Fish and Wildlife Service (USFWS), NMDGF, and the White Sands Missile Range Directorate of Environment and Safety. Therefore, additional consideration of species and habitats of concern is not included in this risk assessment.

2.4.1.6 Identification of Potentially Complete Exposure Pathways

A complete exposure pathway is "one in which the chemical can be traced or expected to travel from the source to a receptor that can be affected by the chemicals" (USEPA, 2001c). Therefore, a constituent, its release and migration from the source, a receptor, and the mechanisms of toxicity of that constituent must be demonstrated before a complete exposure pathway can be identified. The table below illustrates possible exposure routes for the two general types of terrestrial receptors at SWMU 197 (USEPA, 1999).

Organism	Possible Exposure Routes
Terrestrial animals	Ingestion, inhalation, dermal contact, food chain
Terrestrial plants	Direct contact, leaf absorption of soil vapor, leaf absorption of constituents deposited on leaves, root uptake

Although inhalation is listed as a possible exposure route, under most exposure conditions inhalation pathways do not represent a significant contribution to receptor risk (USEPA, 2005c), and are not evaluated quantitatively in this risk assessment. Surface water and sediment habitats are not present on or adjacent to SWMU 197; thus, no aquatic organisms are evaluated.

2.4.1.7 Identification of Generic Assessment and Measurement Endpoints

Assessment endpoints are the explicit expression of the ecological values to be protected (USEPA, 1999). The selection of assessment endpoints depends on knowledge of the receiving environment, knowledge about the constituents released (including their toxicological properties and the relevant concentrations), and understanding of the values that will drive risk management decisions (Suter et al., 1995). Consistent with USEPA (1998) guidance, two elements are required to define

an assessment endpoint: the specific valued ecological entity and the characteristic about the entity that is important to protect.

The USEPA (1997c) guidance states "For the SLERA, assessment endpoints are any adverse effects on ecological receptors, where receptors are plant and animal populations and communities, habitats, and sensitive environments. Many of the screening ecotoxicity values are based on generic assessment endpoints (e.g., protection of communities from changes in structure or function) and are assumed to be widely applicable to sites around the United States". However, the identification of assessment endpoints is limited by the availability of ecotoxicity screening values for all media.

USEPA guidance provides that remedial actions should be designed not to protect organisms on an individual basis, but to protect local populations and communities of biota (USEPA, 1999). Thus, the first management principle for conducting an ERA is to provide a basis for selecting a response action "that will result in the recovery and/or maintenance of healthy local populations/communities of ecological receptors that are or should be present at or near the site" (USEPA, 1999).

For SWMU 197, hypothetical assessment endpoints include the following:

- Sustainability of small mammal populations;
- Sustainability of avian populations;
- Sustainability of terrestrial plant communities; and
- Sustainability of soil invertebrate communities.

Because direct measurement of assessment endpoints is often difficult or impossible, surrogate endpoints called measurement endpoints are used to provide the information necessary to evaluate whether the values associated with the assessment endpoint are being protected. A measurement endpoint is defined as a measurable ecological characteristic and/or response to a stressor (USEPA, 1998). Hazard quotients typically serve as the measurement endpoints for SLERAs and are further discussed in Section 2.4.3.

2.4.2 Screening-Level Ecological Effects Evaluation

The screening-level ecological effects evaluation involves the identification of ecological screening levels (ESLs) for each constituent found in soil at SWMU 197 (Table ERA-1). ESLs are generally based on effects such as mortality and reproductive impairment, and are assumed to be widely applicable to sites around the United States for screening purposes (USEPA, 1997c). For most constituents and receptors, the data available to generate ESLs are limited and related to effects on individual organisms, rather than populations or communities. Given these limitations, conservative assumptions are typically used to ensure that the ESLs are protective. ESLs available in the literature are screening values and do not constitute remediation goals, as they are sometimes based on highly conservative exposure assumptions and/or wildlife receptors that may not be applicable to a particular site. As such, their robustness and biological association with the assessment endpoint may be limited. However, conservative benchmarks provide a starting point for the SLERA in that they may provide an indication of the worst-case measure of the potential for adverse effects. Typically in a SLERA, ESLs are gathered from a few sources leaving constituents without ESLs to be evaluated in the BERA. Ecological soil screening levels have not been developed by NMED or USEPA Region 6. Therefore, the following hierarchy was used to identify soil ESLs for the SLERA:

- USEPA Ecological Soil Screening Levels (EcoSSLs) (USEPA, 2008c; http://www.epa.gov/ecotox/ecossl/);
- USEPA Region 4 Ecological Soil Screening Values (USEPA, 2001d); and
- USEPA Region 5 Ecological Soil Screening Levels (USEPA, 2003b).

Additionally, in this step, constituents that have a tendency to bioaccumulate were also identified if they are included in the USEPA list of bioaccumulative compounds (USEPA, 2000b).

2.4.3 Screening-Level Exposure Estimate and Risk Calculation

The screening-level exposure assessment is comprised of the identification of exposure estimates, risk calculations, and the evaluation of uncertainties (USEPA, 2001a; 1999). These components form the lines of evidence necessary to support the SMDP at the conclusion of the SLERA.

The exposure concentrations that are used in the SLERA are the maximum concentrations (NMED, 2008; USEPA, 2000a; 2001a). The data sets from which the maximum concentrations are drawn are the same site specific data sets used in the human health risk assessment.

Non-detected constituents are also evaluated with respect to the ecological screening levels. The SQLs or reporting limits (RLs) of non-detected constituents exceeding their screening level are identified during the screening process and discussed in the uncertainty section (Section 2.4.5.5).

Risks to ecological receptors are calculated by dividing the exposure estimates (i.e., the maximum detected concentrations) by the conservative ESLs. The resulting ratio, the "maximum HQ", is a highly conservative surrogate for the assessment endpoints. HQs equal to or less than a value of 1 (to nearest whole number) indicate that adverse or significant ecological effects are unlikely (USEPA, 1997c). Maximum HQs greater than 1 indicate that further evaluation is warranted to evaluate the potential for adverse ecological effects. Therefore, the constituents with HQs greater than 1 are identified as Constituents of Potential Ecological Concern (COPECs) and carried forward into Step 3a of the BERA. Detected constituents were also identified as COPECs if no ESL was available.

The lack of screening ecotoxicity values for some constituents is one of the main contributors to uncertainty associated with the SLERA evaluation. HQs cannot be calculated for constituents that lack screening ecotoxicity values. Therefore, a constituent that lacks a screening value was carried forward to the BERA. Exception to this may occur when risk managers for the site agree that a BERA is not warranted. For example, the situation may exist that a very limited number of constituents do not have screening values, and those constituents that do have screening values have HQs well below a value of 1. These risk management decisions are agreed to during the SMDP.

2.4.3.1 Combined Surface and Subsurface Soil

Combined surface and subsurface soil COPECs were selected by comparing the analytical data with ESLs from sources identified in Section 2.4.2. Table ERA-1 presents the selection of surface and subsurface soil COPECs for the ERA.

As summarized in Table ERA-1, two constituents (cadmium and lead) were identified as COPECs in combined surface and subsurface soil.

2.4.4 Scientific Management Decision Point and Reporting

This first SMDP is purposefully flexible (per the USEPA paradigm) to occur after Steps 2 or 3a, depending on the results obtained at Step 2 (Figure 2-3). The purpose of the flexibility of the first SMDP is so that additional evaluation of risks can occur and reporting can be streamlined into a single report. The results of the SLERA were expressed in terms of the following conclusions or recommended actions:

1. There is adequate information to conclude that ecological risks are unlikely and no further action is warranted.

2. The information is not adequate to make a decision at this point. The ecological risk assessment process will continue to Step 3a – the initial step of the BERA.

3. Remedial actions may be considered for the media and constituents that are identified at the end of Step 2, to determine if cost-effective actions can be implemented to reduce or prevent risks to wildlife.

Based on the results of the SLERA, the following conclusions regarding the potential for adverse ecological risks at SWMU 197 can be drawn: the ERA should continue at this time. As such, a BERA is presented in the following sections.

2.4.5 Baseline Ecological Risk Assessment

The BERA is designed to more realistically identify the nature and extent of ecological risks to support informed risk management decision-making (USEPA, 2000a; 1997c). This approach contrasts with the SLERA, which is designed to conservatively rule out further evaluation of constituents and media that clearly do not pose a significant ecological risk.

The BERA was conducted in a manner consistent with the following guidance:

- “Guidance for Assessing Ecological Risks Posed by Chemicals: Screening-Level Ecological Risk Assessment” (NMED, 2008);

- “Ecological Risk Assessment Guidance for Superfund” (USEPA, 1997c; 1999);

- "Amended Guidance on Ecological Risk Assessment at Military Bases: Process Considerations, Timing of Activities, and Inclusion of Stakeholders" (USEPA, 2000a);

- "ECO-Update: Role of Screening-level Risk Assessments and Refining Contaminants of Concern in Baseline Ecological Risk Assessments," (USEPA, 2001a); and

- "Guidelines for Ecological Risk Assessment" (USEPA, 1998).

Step 3a of the BERA for SWMU 197 is a refinement of the Step 2 exposure estimates and risk characterization, focused only on the constituents and media that progress beyond the SLERA. The assumptions used in Step 3a are refinements of the conservative estimates of exposure and toxicological impacts, to site-specific (or receptor-specific) estimates of exposure, and more relevant ecotoxicity screening values, if available (USEPA, 2001a). Risks are recalculated using these refined assumptions. The outcome of this refined screening process is a list of COPECs to be retained for further evaluation in the BERA process. This effort was conducted as part of the Step 3a, BERA Problem Formulation. Step 3a involves the refinement of the following:

- Media of Concern;

- Constituents of Potential Ecological Concern (COPECs);

- Risk Calculations for Direct Contact COPECs;

- Assessment and Measurement Endpoints for Bioaccumulative COPECs;

- Bioaccumulative COPECs by Preliminary Food Chain Modeling;

- Risk Characterization by Evaluation of Weight of Evidence and Ecological Significance; and

- Uncertainties.

Step 3a is followed by a SMDP that involves the reporting of results of Steps 1 through 3a.

2.4.5.1 Refinement of Media of Concern

The process of refining media of concern helps focus the BERA on the media that may be associated with potentially significant ecological exposure pathways, and therefore, potentially contribute to significant ecological risks. This methodology is consistent with the concepts addressed in American Society for Testing and Materials (ASTM) Ecological Risk-Based Corrective Action (Eco-RBCA) guidance (ASTM, 2002), which was developed in partnership with the USEPA. Eco-RBCA demonstrates that there are criteria that can be used to refine the media of concern for an ERA. The states of Pennsylvania, Massachusetts, Louisiana, and Texas (among others) have a component of their ERA guidance that allows for refinement of media of concern based on specified criteria (Pennsylvania Department of Environmental Protection [PADEP], 1998; Massachusetts Department of Environmental Protection [MADEP], 1996; Louisiana Department of Environmental Quality [LDEQ], 1999; and TCEQ, 2001).

The process for refining the media of concern results in a detailed discussion of how key practical considerations are incorporated into the decision-making process.

2.4.5.1.1 Spatial Extent

The spatial extent of the release area is also considered in the decision logic. The size or space of a contaminated area is directly related to the potential for ecological exposure if ecological habitat is present. Spatial scale can be useful as a screening criterion if used in conjunction with other considerations, such as the valued ecological resources that may be present, current and future land use, the likelihood for contaminant migration from the site, and the proximity to a valued or sensitive ecological habitat.

Spatial scale screening criteria are used widely in ERA. Although New Mexico does not have any guidance on spatial scale criteria, several states' guidance address the importance of spatial scale in ecological assessments, as does the ASTM Standard Guide for Risk-Based Corrective Action for Protection of Ecological Resources. E-2205-02 (ASTM, 2002). For example, the following spatial scale screening criteria are used by the following states: 1 to 2 acres for Minnesota (the smaller scale for bioaccumulative compounds); 1 acre for Texas and Mississippi; 2 acres for Pennsylvania; and 5 acres for Louisiana. (Minnesota Pollution Control Agency [MPCA], 1998; TCEQ, 2001; Mississippi Department of Environmental Quality [MDEQ], 1997; LADEQ, 1999; PADEP, 1998). Massachusetts' Stage I screening recommends evaluating the size of the terrestrial habitat and the extent to which it is connected with

other habitats: no action recommended for less than 2 acres (and some considerations for affected areas greater than 2 acres but less than 6 acres, dependent on an evaluation of "significant exposure pathways"). Pennsylvania actually provides the rationale for the criteria, discussing how population-level exposures are unlikely to occur at small spatial scales such as less than 2 acres (PADEP, 1998). This criterion has often been referred to as *de minimis* because it is not expected to cause adverse impacts to the population, community, or ecosystem, providing other conditions are met (Suter et al., 1995; Henning and Shear, 1998; Efroymson et al., 2003).

A 1-acre screening criterion was used at SWMU 197 to refine the media of concern, providing the following additional *de minimis* criteria are met:

- Similar but unimpacted habitat must be available adjacent to the impacted area;
- Sensitive habitat must not be present within ¼ mile if the COPECs will migrate off site; and
- COPEC fate and transport must be unlikely to increase the spatial extent to greater than 1 acre.

2.4.5.2 Refinement of Risk Calculations for Direct Contact Constituents of Potential Ecological Concern

The refinement of the COPECs identified in the SLERA is necessary to help focus further risk assessment activities on the constituents which pose the greatest potential risk to ecological receptors. USEPA guidance for this approach (USEPA, 1999; 2000a; 2001a; 1997c) indicates that the refinement of COPECs streamlines the overall ERA process by using realistic criteria to focus the risk assessment on those constituents that may pose unacceptable ecological risks. It is intended as an "incremental iteration of exposure, effects, and risk characterization" (USEPA, 2001a). The outcome of this screening is that constituents are either excluded as COPECs or retained for further evaluation in the BERA process.

The refinement of COPECs is focused on refining the ecological exposure assumptions. An EPC is calculated for each constituent separately. These EPCs are compared with the relevant SLERA screening toxicity values. To the extent appropriate, the 95 percent UCL on the mean concentration is used as the EPC for the refinement of COPECs. The UCL for each COPEC is calculated using the USEPA's

ProUCL 4.00.05 statistical software (USEPA, 2010b). The ProUCL output is provided in Attachment D.

The UCL represents an upperbound estimate of average exposure conditions, which is an appropriate estimate for mobile terrestrial wildlife species and for exposures of plant and animal communities (rather than individuals). In cases where the UCL is greater than the maximum detected concentration, the maximum detected concentration is used as the EPC. Constituents with EPCs greater than the SLERA screening ecotoxicity value, and analytes for which there are no screening ecotoxicity values, are retained for further consideration.

Each of the constituents identified as a COPEC is considered a COPEC for direct contact exposures. A subset of these COPECs is also considered for bioaccumulative exposures. A list of bioaccumulative constituents prepared by the USEPA is used to identify potential bioaccumulative COPECs (i.e., those constituents that will magnify in the food chain). Table ERA-2 identifies bioaccumulative constituents as defined in the USEPA guidance *Bioaccumulative Testing and Interpretation for the Purpose of Sediment Quality Assessment, Status and Needs* (USEPA, 2000b). Direct contact COPECs that are listed as bioaccumulative compounds are also considered and evaluated as bioaccumulative COPECs.

The COPECs identified in the SLERA were re-evaluated for the combined surface and subsurface soil data set by calculating refined HQs. The refined HQs were calculated for the COPEC using refined EPCs (shown in Table ERA-3). Both cadmium and lead were identified as bioaccumulative. However, as discussed below, lead was not carried through the BERA and therefore was not evaluated further. The results of the refined HQ calculations for SWMU 197 are summarized in the subsections below.

2.4.5.2.1 Combined Surface and Subsurface Soil (0 to 10 ft bgs)

Two COPECs in combined surface and subsurface soil (i.e. cadmium and lead), were carried forward into the BERA. When the refined EPC for lead (16.2 mg/kg) was compared with the ESL (11 mg/kg), lead had a refined HQ equal to 1 (rounded to nearest whole number). Therefore, adverse impacts are not expected for terrestrial wildlife potentially exposed to lead in surface and subsurface soil at SWMU 197. The BERA results for the remaining surface and subsurface soil COPEC at SWMU 197 are presented in Table ERA-2 and are discussed below:

- Cadmium– Cadmium was detected in 9 of 9 combined surfaces and subsurface soil samples. A HQ of 5 was calculated using the UCL (1.69 mg/kg) and the

USEPA EcoSSL (0.36 mg/kg). The calculated HQ of 5 is based on an EcoSSL for a shrew (mammalian ground insectivore) which was calculated assuming a diet of earthworms. For all practical purposes, earthworms do not occur in the desert southwest (Werner and Olson, 1994). Therefore, the EcoSSLs for herbivorous and carnivorous receptors may be more appropriate for the Site. EcoSSLs for herbivorous and carnivorous mammals are 73 mg/kg and 84 mg/kg, respectively. Avian EcoSSLs for cadmium are 28 mg/kg for herbivores and 630 mg/kg for carnivores. The UCL for cadmium in combined surface and subsurface soil was 1.69 mg/kg, which is below the benchmarks for herbivorous and carnivorous mammals and birds. Considering that the refined HQs are less than 1 when the EcoSSLs for herbivores and carnivores are used, and that the area of the entire site is approximately 0.02 acre, adverse impacts are not expected for terrestrial wildlife potentially exposed to cadmium in combined surface and subsurface soil at SWMU 197.

- Cadmium was identified as bioaccumulative and evaluated in the terrestrial food chain model for the kit fox[1] presented in Section 2.4.5.5.

2.4.5.3 Assessment and Measurement Endpoints for Bioaccumulative COPECs

The assessment and measurement endpoints from the SLERA are refined for bioaccumulative COPECs listed in Tables ERA-2. Bioaccumulative COPECs are those COPECs that may have toxic effects when they transfer through the food chain. The bioaccumulative COPECs indentified in soil at SWMU 197 are lead and cadmium. The SLERA assessment and measurement endpoints were refined for bioaccumulative COPECs because the SLERA endpoints are general in nature and do not necessarily identify receptors that are susceptible to food chain exposures. BERA assessment endpoints for bioaccumulation are based on receptors appropriate to the habitat present at the site, as well as the media in which bioaccumulative COPECs are identified (i.e., soil). The food chain assessment and measurement endpoints considered appropriate for SWMU 197 are as follows:

[1] The desert kit fox can burrow to a depth of 3 meters and may be exposed to surface and subsurface soil (0 to 10 ft bgs).

Assessment Endpoint	Measurement Endpoint	Effects Measured
Survival and reproductive success of mammals exposed to bioaccumulative compounds in the terrestrial food chain	Changes in survival and reproduction as indicated by food chain modeling for mammalian indicator species	NOAELs and LOAELs related to chronic effects such as reduced survival and reduced litter size

NOAEL no-observed-adverse-effect-level

LOAEL lowest-observed-adverse-effect-level

2.4.5.4 Terrestrial Food Chain Modeling

Ingestion-based food chain modeling was used in Step 3a of the BERA to evaluate bioaccumulative COPECs. The purpose of the food chain modeling is to characterize potential exposures to COPECs via the food chain and to identify potential adverse effects for mammals. The remainder of this section provides general information regarding the following components of the model:

- Wildlife receptors and exposure parameters;
- Bioaccumulation and bioconcentration factors;
- Food chain ingestion modeling;
- Ecotoxicity benchmarks and extrapolation approach; and
- Risk characterization for food chain modeling.

2.4.5.4.1 Terrestrial Wildlife Receptors and Exposure Parameters

Indicator species were chosen to represent a cross-section of feeding guilds for selected assessment endpoints.

Indicator species selected are as follows:

- carnivorous mammal: desert kit fox (*Vulpes macrotis*).

Indicator species were selected to represent mammalian populations that might reside or forage in habitats present at the site and surrounding area and be exposed to subsurface soil. Indicator species were not selected to represent reptiles that might access the site, because the available toxicity data are insufficient to support

establishing distinct risk-based screening criteria (USEPA, 2005c). Because effects data for reptiles are extremely limited (Sparling, et al., 2000), it is often necessary to assume that the risk characterizations for other receptors are protective of these species.

Selection of Carnivorous Mammalian Receptor – The desert kit fox is carnivorous, preying on black-tailed hare, desert cottontails, rodents, birds, and reptiles. They are residents of arid regions, and live in annual grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. They dig dens in open, level areas of sandy soil. Kit fox dens/burrows on average range from 1.5 to 3 meters deep (Arjo, et al., 2003). Home range size has been reported as approximately 9.8 km^2 and 12.3 km^2, for females and males, respectively (Zoellick and Smith, 1992). Pups are born February through April with an average of four per litter.

The desert kit fox was chosen as a representative species for the following reasons:

- Desert kit fox are a protected fur-bearing species (i.e., hunting is regulated) in New Mexico;
- Desert kit fox are a common carnivorous species present in desert habitats;
- Suitable habitat for desert kit fox is available near SWMU 197;
- It preys on small mammals, which may bioaccumulate COPECs;
- COPEC bioaccumulation data are available for small mammals;
- It plays an important role in providing cover for other species by its burrowing activity; and
- Desert kit fox dens range from 1.5 to 3 meters deep and therefore are exposed to subsurface soil.

Indicator receptor exposure parameters are presented in Table ERA-4.

2.4.5.4.2 Bioaccumulation and Bioconcentration Factors

The processes of bioaccumulation and bioconcentration are important to an ERA because they provide a basis of prediction and discussion regarding the potential for

constituent uptake into flora and fauna. Constituents in tissues of organisms in the food chain are likely to be ingested by the species which feed on them (i.e., those occupying higher trophic levels), the result of which may be the expression of toxicological effects by the higher trophic level species.

Bioaccumulation and bioconcentration factors used for the food chain modeling are obtained from literature sources such as USEPA, 2007c; Baes, et al., 1984; Travis and Arms, 1988; and other related literature, and are presented in Table ERA-5.

If a bioaccumulation factor (BAF) or bioconcentration factor (BCF) obtained from the literature was in dry weight, it was converted to wet weight in the estimated ingestion calculation using the following conversion factors: 0.167 for invertebrates; 0.12 for plants and 0.32 for mammals.

*BAF (wet weight) = BAF (dry weight) * Conversion Factor*

2.4.5.4.3 Food Chain Ingestion Modeling

Food chain ingestion-based exposure calculations were performed for the identified representative receptor species to characterize potential exposures to soil constituents via the food chain and to identify potential adverse effects for wildlife at SWMU 197. Ingestion modeling is based on species-specific exposure parameters and ingestion intake requirements. Arithmetic mean and UCL concentrations were used to evaluate the range of potential ingestion-based exposures. The use of mean concentrations is appropriate because mammals are highly mobile and consume prey items containing varying levels of COPECs. The use of UCL concentrations is intended to represent, in effect, a reasonable maximum exposure estimate. The following model is used to calculate the ingestion based exposure for each indicator receptor:

$$\text{Ingestion (mg/kg - day)} = \left(\frac{\{(P_{MEDIUM} \times C_{MEDIUM} \times (IR_M)) + ((P_{FOOD1} \times C_{FOOD1}) + (P_{FOOD2} \times C_{FOOD2}) \times (IR_F))\} \times (SUF) \times (ED)}{BW} \right)$$

Where:

P_{MEDIUM} = Proportion of the diet comprised of the medium (unitless)

C_{MEDIUM} = Concentration of the constituent in the medium (mg/kg)

P_{FOOD1} = Proportion of the diet comprised of the first food item (unitless)

C_{FOOD1} = Concentration of the constituent in the first food item (mg/kg)

P_{FOOD2}	=	Proportion of the diet comprised of the second food item (unitless)
C_{FOOD2}	=	Concentration of the constituent in the second food item (mg/kg)
IR_F	=	Ingestion rate of food (kg/day)
IR_M	=	Ingestion rate of media (kg/day)
SUF	=	Site use factor (unitless)
ED	=	Exposure duration (unitless)
BW	=	Body weight of the organism (kg)

and:

C_{FOOD1}	=	$C_{MEDIUM} \times BAF_{FOOD1}$
C_{FOOD2}	=	$C_{MEDIUM} \times BAF_{FOOD2}$
BAF_{FOOD1}	=	Bioaccumulation factor for first food item (unitless)
BAF_{FOOD2}	=	Bioaccumulation factor for second food item (unitless)

2.4.5.4.4 Site Use Factor Approach

A site use factor (SUF) of 1 was employed in this ERA for the maximum scenario under the assumption that the receptors obtain their entire diet SWMU 197. However, for the refined scenarios, SUFs were adjusted based on literature values for the foraging/home range of a measurement receptor. For the desert kit fox the home range is larger than the area evaluated for SWMU 197. The SUF calculation is represented by a simple ratio where the size of the affected area is divided by the size of the home or foraging range of the receptor. As a conservative measure in this report, the size of the affected area was based on the boundary of SWMU 197. The calculated SUF for SWMU 197 is based on the desert kit fox's home range and the approximate size of SWMU 197 (i.e., 0.02 acres). Table ERA-4 provides the home range obtained from the literature for the desert kit fox.

2.4.5.4.5 Ecotoxicity Benchmarks and Extrapolation Approach

Ecological risk assessment uses constituent-specific toxicity reference values (TRVs) for the purpose of estimating risk. For the most part, TRVs are based on studies using laboratory species because toxicological studies have not been conducted on most wildlife species. TRVs are available from a variety of sources such as USEPA (2010; 2005c); Sample, et al., (1996 and 1997); ATSDR, and many constituent-specific scientific sources and publications. Toxicological benchmarks are typically reported as no observed adverse effect levels (NOAELs) and lowest observed adverse effect levels (LOAELs). Both NOAELS and LOAELs for each COPEC are used in the food

chain modeling so that a range of predicted food chain impacts can be evaluated. A list of ecotoxicity values for the specific COPECs associated with the site are provided in the site-specific BERA and presented in Tables ERA-9 and ERA-10. These ecotoxicity values will vary depending on the species, as described below.

Toxicity values must be carefully selected, and may require mathematical adjustment in order to represent the species selected for a site. In order to have a toxicity value representative of specific mammalian wildlife species rather than a mammalian laboratory species, an extrapolation (i.e., a mathematical formula based on differences in body weights) is needed (Sample, et al., 1997). The extrapolation is necessary because the laboratory mammalian species and wildlife species are of varying sizes.

A generic approach for modeling a constituent-specific reference toxicity value for the purpose of estimating risk to a generic mammalian "wildlife species," is shown below (Sample, et al., 1996):

$$\text{NOAEL}_{\text{WildlifeSpecies}} = \text{NOAEL}_{\text{Test Species}} \times \left[\frac{\text{BW}_{\text{TestSpecies}}}{\text{BW}_{\text{WildlifeSpecies}}} \right]^{\frac{1}{4}}$$

Where:

$\text{NOAEL}_{\text{Wildlife Species}}$	=	NOAEL for the wildlife species (i.e., the TRV)
$\text{NOAEL}_{\text{Test Species}}$	=	NOAEL for the laboratory test species (i.e., the toxicological benchmark)
$\text{BW}_{\text{Test Species}}$	=	Body weight of the laboratory test species
$\text{BW}_{\text{Wildlife Species}}$	=	Body weight of the wildlife species

No body size scaling extrapolation was applied to toxicity values obtained from USEPA EcoSSL guidance (2005c) since those values are derived using multiple mammal test species.

2.4.5.5 Terrestrial Food Chain Modeling Risk Characterization

As summarized in Tables ERA-6 and ERA-7, the maximum and refined scenario Lowest Observed Adverse Effect Level (LOAEL) and No Observed Adverse Effect Level (NOAEL) HQs for the desert kit fox potentially exposed to combined surface and subsurface soil containing cadmium were less than 1 at SWMU 197. These results indicate that if kit foxes (or other similar burrowing mammals) are exposed to this COPEC in the future, they are not expected to experience adverse effects.

Based on the overall analysis of terrestrial food chain modeling HQs, including the limited spatial extent of the affected soil, if exposure to this bioaccumulative COPEC were to occur, then adverse effects are not expected for wildlife.

2.4.5.6 Evaluation of Uncertainties

Uncertainty is "the imperfect knowledge concerning the present or future state of the system under consideration; a component of risk resulting from imperfect knowledge of the degree of hazard or of its spatial and temporal distribution," (USEPA, 1997c). Uncertainties that may lead to either an overestimate or underestimate of risk are associated with each stage of risk assessment. Uncertainty is inherent to ERA, in part, because the sciences of ecology and ecotoxicology are relatively young and not yet fully developed (Kapustka and Landis, 1998; Newman, 1998; Emlen and Springman, 2007; Kapustka, 2008; Suter, 2008). Uncertainty also exists in many aspects of the toxicology relied upon for conducting ERAs (Newman, 1998; Lovett Doust, et al., 1993; Dale, et al., 2008). General uncertainties associated with the SLERA are identified on Table ERA-4.

Twenty-nine constituents, including one VOCs (i.e., 2-chlorophenol), fifteen SVOCs (i.e., 4-aminobiphenyl; aniline; benzyl butyl phthalate; bis[2-ethylhexyl]phthalate; chlorophenols, 4-dimethylaminoazobenzene; 2,4-dimethylphenol; hexachloro-1,3-butadiene; hexachlorobenzene; n-methyl-n-nitrosomethanamine; 2-methyl-4,6-dinitrophenol, n-nitrosopiperidine, pentachlorobenzene, propyzamide, and pyridine), ten PAHs (i.e., anthracene; benzo[a]pyrene; benzo[b]fluoranthene; 1-chloronaphthalene; 2-chloronaphthalene; fluoranthene; 3-methylchloranthene, naphthalene; phenanthrene; and pyrene), one explosive (i.e., 2,6-dinitrotoluene), and two inorganics (i.e., mercury and selenium), were not detected, but had some SQLs greater than the screening values. Because these 29 constituents were not detected in any sample collected from SWMU 197, it is not possible to conduct a quantitative evaluation. The soil samples collected in 2004, while analyzed using standard laboratory methods and instrumentation appropriate for that time period, have SQLs that are elevated in relation to SQLs that have become increasingly lower over the past approximately 6 year period. The high SQLs associated with the SWMU 197 data set are believed to be the result of outdated laboratory methods and instrumentation rather than a function of constituent content within a sample. Therefore, the SQLs associated with historical data are considered a minor uncertainty in the risk assessment.

2.4.6 Ecological Risk Summary

A SLERA and BERA were completed for SWMU 197. After the SLERA, two constituents (i.e., cadmium and lead) were selected as COPECs in combined surface and subsurface soil because the HQs were greater than 1. In the BERA, cadmium was retained for further evaluation in the food chain modeling since it was identified as bioaccumulative.

Table ERA-8 summarizes the constituent in combined surface and subsurface soil that was carried through the BERA and evaluated in the terrestrial food chain model. As shown in Table ERA-8, all receptors evaluated in the terrestrial food chain refined scenarios had LOAEL and NOAEL HQs less than 1. Based on the overall analysis of the ERA for SWMU 197, the results indicate that if subsurface soil exposure were to occur, then adverse effects are not expected for wildlife that may access the site.

2.5 SWMU 197 Summary and Conclusions

A HHRA was conducted to evaluate exposure to COPCs in combined surface and subsurface soil, total soil and saturated vadose zone soil water for site workers under hypothetical future land-use conditions, and residents (adult and child) under hypothetical future land-use conditions. Since no buildings currently exist at SWMU 197 and there are currently no activities at the SWMU, the potential for vapor intrusion is an incomplete exposure pathway under current conditions.

In accordance with NMED guidance (NMED, 2009a), constituent concentrations in combined surface and subsurface soil were compared to health-based screening levels and the calculated ratios summed. The ratios were multiplied by $1x10^{-5}$ for carcinogens and by 1 for non-carcinogens. The results of this data screening process indicate that after comparison to health-based soil screening levels for construction worker exposure, no COPCs were selected for combined surface and subsurface soil at SWMU 197. This demonstrates that the constituent concentrations in combined surface and subsurface soil at SWMU 197 are unlikely to result in adverse health impacts to hypothetical future construction worker via direct contact exposure (i.e., ingestion, inhalation of vapor/dust, dermal):

All detected VOCs in total soil (i.e., vadose zone) were selected as COPCs for the future vapor intrusion evaluation because there are no NMED or USEPA soil screening levels screening levels that are protective of the vapor intrusion pathway. Saturated

vadose zone soil water COPCs were selected by comparing the analytical data with vapor intrusion screening levels for groundwater.

Under hypothetical future conditions, the ELCR and HI are within or below acceptable target risk ranges for medical aid building worker exposure to indoor air containing VOCs originating from saturated vadose zone soil water. The total ELCR value for the future vapor intrusion exposure pathway for the residential scenario is above the acceptable target risk range of 10^{-6} to 10^{-4} for carcinogenic effects. The total HI values for the future vapor intrusion exposure pathway for the site worker scenario and the residential scenario are above the benchmark of 1 for non-cancer hazard, indicating adverse non-carcinogenic effects are possible if all assumptions are met.

The HHRA for SWMU 197 indicates that future industrial use of the site could result in potential exposures that exceed the regulatory benchmarks for non-cancer hazards. The evaluation also indicates that potential future residential redevelopment of the site may result in potential exposures that exceed the regulatory benchmarks for cancer risks and non-cancer hazards. Based on these results, if a future hypothetical building were to be built on SWMU 197, additional risk assessment may be warranted.

It is important to reiterate that the scenarios for which unacceptable risks and/or hazards were calculated are all hypothetical future scenarios. There are no unacceptable risks and/or hazards to current receptors (i.e., site workers) at SWMU 197.

A SLERA and BERA were completed for SWMU 197, to evaluate whether ecological receptors may be adversely impacted by exposure to site-related constituents detected in combined surface and subsurface soil (0 to 10 ft bgs), and to conduct food chain modeling for the COPEC identified as bioaccumulative (i.e., cadmium). The results of the SLERA and BERA for direct contact exposure and for food chain modeling indicate there is adequate information to conclude that potential current and future impacts are unlikely to occur for ecological receptors potentially exposed to constituents in soil. Therefore, no further ecological evaluation at SWMU 197 is warranted.

3. References

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ARCADIS

Tables

Table Data-1
Soil Risk Assessment Dataset
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]		Detects		Sample Quantitation Limit		Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples	FOD %	Min (mg/kg)	Max (mg/kg)	Min (mg/kg)	Max (mg/kg)			
Volatile Organic Compounds									
Acetone	0 - 9	0	–	–	0.01	0.01	–	0.0100	–
Acetophenone	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Acrylonitrile	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Benzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Bis(2-chloroethyl)ether	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Bis(2-chloroisopropyl)ether	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Bromobenzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Bromodichloromethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Bromomethane	0 - 9	0	–	–	0.005	0.005	–	0.00500	–
2-Butanone	0 - 9	0	–	–	0.005	0.005	–	0.00500	–
n-Butylbenzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
sec-Butylbenzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
tert-Butylbenzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Carbon disulfide	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Carbon tetrachloride	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
CFC-11	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
CFC-12	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Chlorobenzene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Bromochloromethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Chlorodibromomethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Chloroethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
2-Chloroethyl vinyl ether	0 - 9	0	–	–	0.005	0.005	–	0.00500	–
Chloroform	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Chloromethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
2-Chlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Chlorotoluene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
4-Chlorotoluene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Cymene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Dibenzofuran	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1,2-Dibromo-3-chloropropane	0 - 9	0	–	–	0.005	0.005	–	0.00500	–
1,2-Dibromoethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
Dibromomethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
1,2-Dichlorobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1,4-Dichlorobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
trans-1,4-Dichlorobutene	0 - 9	0	–	–	0.01	0.01	–	0.0100	–
1,1-Dichloroethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
1,2-Dichloroethane	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
1,1-Dichloroethylene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
cis-1,2-Dichloroethene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
trans-1,2-Dichloroethene	0 - 9	0	–	–	0.001	0.001	–	0.00100	–

Table Data-1
Soil Risk Assessment Dataset
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
Methylene chloride	0	-	9	0	–	-	–	0.005	-	0.005	–	0.00500	–
1,2-Dichloropropane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,3-Dichloropropane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
2,2-Dichloropropane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1-Dichloropropene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
cis-1,3-Dichloropropene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
trans-1,3-Dichloropropene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Ethylbenzene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Iodomethane	0	-	9	0	–	-	–	0.005	-	0.005	–	0.00500	–
Isopropylbenzene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,3-Dichlorobenzene	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Methyl n-butyl ketone	0	-	9	0	–	-	–	0.005	-	0.005	–	0.00500	–
Toluene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
4-Methyl-2-pentanone (MIBK)	0	-	9	0	–	-	–	0.005	-	0.005	–	0.00500	–
Methyl tert-butyl ether (MTBE)	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Nitrobenzene	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
n-Propylbenzene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Styrene (monomer)	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Tetrachloroethene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,1,2-Tetrachloroethane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,2,2-Tetrachloroethane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,1-Trichloroethane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,2-Trichloroethane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2,3-Trichlorobenzene	0	-	9	0	–	-	–	0.005	-	0.005	–	0.00500	–
1,2,3-Trichloropropane	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2,4-Trichlorobenzene	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
1,2,4-Trimethylbenzene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,3,5-Trimethylbenzene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Trichloroethylene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Vinyl chloride	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
m,p-Xylene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
o-Xylene	0	-	9	0	–	-	–	0.001	-	0.001	–	0.00100	–
Semi Volatile Organic Compounds													
4-Aminobiphenyl	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Aniline	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzidine	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzoic acid	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzyl alcohol	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzyl butyl phthalate	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Bis(2-chloroethoxy)methane	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–
Bis(2-ethylhexyl)phthalate	0	-	9	0	–	-	–	0.248	-	0.248	–	0.248	–

Table Data-1
Soil Risk Assessment Dataset
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]		Detects		Sample Quantitation Limit		Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples	FOD %	Min (mg/kg)	Max (mg/kg)	Min (mg/kg)	Max (mg/kg)			
4-Bromophenyl phenyl ether	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Chloroaniline	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Chloro-3-methylphenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Chlorophenols	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Chlorophenyl phenyl ether	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Dibenz[a,,j]acridine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
3,3'-Dichlorobenzidine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,4-Dichlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,6-Dichlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Diethyl phthalate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Dimethylaminoazobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,4-Dimethylphenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,4-Dinitrophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,4-Dinitrotoluene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Methyl-4,6-Dinitrophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
a,a-Dimethylphenethylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Dimethyl phthalate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Di-n-butyl phthalate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Di-n-octyl phthalate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Diphenylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Diphenylhydrazine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Ethyl methanesulfonate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Hexachloro-1,3-butadiene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Hexachlorobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Hexachlorocyclopentadiene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Hexachloroethane	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Methanamine, n-methyl-n-nitroso	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Methyl-4,6-Dinitrophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Methyl methanesulfonate	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Methylphenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
3-Methylphenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Methyl pyridine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1-Naphthylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Naphthylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Nitroaniline	0 - 9	0	–	–	0.248	0.248	–	0.248	–
3-Nitroaniline	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Nitroaniline	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Nitrophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
4-Nitrophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
n-Nitrosodi-n-butylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
n-Nitrosodi-n-propylamine	0 - 9	0	–	–	0.248	0.248	–	0.248	–

Table Data-1
Soil Risk Assessment Dataset
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]		Detects		Sample Quantitation Limit		Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples	FOD %	Min (mg/kg)	Max (mg/kg)	Min (mg/kg)	Max (mg/kg)			
n-Nitrosopiperidine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Pentachlorobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Pentachlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Phenacetin	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Phenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Propyzamide	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Pyridine	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1,2,4,5-Tetrachlorobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Bromoform	0 - 9	0	–	–	0.001	0.001	–	0.00100	–
2,4,5-Trichlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2,4,6-Trichlorophenol	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Isophorone	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Acenaphthylene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Anthracene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Benzo(a)anthracene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Benzo(a)pyrene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Benzo(b)fluoranthene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Benzo(g,h,i)perylene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Benzo(k)fluoranthene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1,2-Benzphenanthracene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1-Chloronaphthalene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Chloronaphthalene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Dibenz(a,h)anthracene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
7,12-Dimethylbenz(a)anthracene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Fluoranthene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Fluorene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Indeno(1,2,3-cd)pyrene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
3-Methylchloranthrene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
1-Methylnaphthalene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
2-Methylnaphthalene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Naphthalene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Phenanthrene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Pyrene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Pesticides									
Pentachloronitrobenzene	0 - 9	0	–	–	0.248	0.248	–	0.248	–
Total Petroleum Hydrocarbons (TPH)									
Gasoline Range Organics (GRO)	0 - 9	0	–	–	1	1	–	1.00	–
Explosives									
2,6-Dinitrotoluene	0 - 9	0	–	–	0.248	0.248	–	0.248	–

Table Data-1
Soil Risk Assessment Dataset
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
Inorganics													
Arsenic	7	-	9	77.8	2.72	-	5.91	2	-	2	TSA-SB-010(6.5 - 7)	3.71	4.722
Barium	9	-	9	100	12.6	-	99.8	–	-	–	TSA-SB-018(6.5 - 7)	54.4	75.53
Cadmium	9	-	9	100	0.612	-	2.46	–	-	–	TSA-SB-010(6.5 - 7)	1.35	1.691
Chromium	9	-	9	100	3.58	-	13.8	–	-	–	TSA-SB-010(6.5 - 7)	7.72	9.466
Lead	9	-	9	100	5.93	-	24.3	–	-	–	TSA-SB-010(6.5 - 7)	12.5	16.27
Mercury	0	-	9	0	–	-	–	0.15	-	0.15	–	0.150	–
Selenium	0	-	9	0	–	-	–	1	-	1	–	1.00	–
Silver	0	-	9	0	–	-	–	0.2	-	0.2	–	0.200	–

Notes:

– = Not analyzed/ not applicable.

mg/kg = Milligrams per kilogram.

[a] Only constituents analyzed are presented.
For duplicate samples, the highest detected value or the lowest sample quantitation limit were used.
For constituents analyzed in two methods, the result of the more precise method was used.

[b] Frequency of detection (FOD) = number of detects / total number of samples analyzed.

[c] "–" indicates that the upper confidence limit on the mean (UCL) cannot be calculated due to small data set size. The upper confidence limit on the mean (UCL) was calculated using ProUCL 4.0.

Table Data-2
Soil Risk Assessment Dataset
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
Volatile Organic Compounds													
Acetone	0	-	45	0	–	-	–	0.01	-	0.01	–	0.0100	–
Acetophenone	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Acrylonitrile	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Benzene	16	-	51	31.4	0.0193	-	10.1	0.001	-	0.02	TSA-SB-017(21 - 21.5)	0.331	1.249
Bis(2-chloroethyl)ether	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Bis(2-chloroisopropyl)ether	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Bromobenzene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Bromodichloromethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Bromomethane	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
2-Butanone	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
n-Butylbenzene	3	-	45	6.67	0.55	-	19.6	0.001	-	0.001	TSA-SB-018(20.5 - 21)	0.496	–
sec-Butylbenzene	2	-	45	4.44	0.238	-	1.02	0.001	-	0.001	TSA-SB-016(20.5 - 21)	0.0289	–
tert-Butylbenzene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Carbon disulfide	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Carbon tetrachloride	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
CFC-11	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
CFC-12	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Chlorobenzene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Bromochloromethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Chlorodibromomethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Chloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
2-Chloroethyl vinyl ether	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
Chloroform	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Chloromethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
2-Chlorophenol	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
2-Chlorotoluene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
4-Chlorotoluene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Cymene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Dibenzofuran	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
1,2-Dibromo-3-chloropropane	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
1,2-Dibromoethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Dibromomethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2-Dichlorobenzene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
1,4-Dichlorobenzene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
trans-1,4-Dichlorobutene	0	-	45	0	–	-	–	0.01	-	0.01	–	0.0100	–
1,1-Dichloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2-Dichloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1-Dichloroethylene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
cis-1,2-Dichloroethene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
trans-1,2-Dichloroethene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–

Table Data-2
Soil Risk Assessment Dataset
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
Methylene chloride	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
1,2-Dichloropropane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,3-Dichloropropane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
2,2-Dichloropropane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1-Dichloropropene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
cis-1,3-Dichloropropene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
trans-1,3-Dichloropropene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Ethylbenzene	14	-	51	27.5	0.0102	-	149	0.001	-	0.02	TSA-SB-018(20.5 - 21)	4.58	36.47
Iodomethane	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
Isopropylbenzene	3	-	45	6.67	0.876	-	30.9	0.001	-	0.001	TSA-SB-018(20.5 - 21)	0.754	–
1,3-Dichlorobenzene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Methyl n-butyl ketone	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
Toluene	18	-	51	35.3	0.0269	-	177	0.001	-	0.02	TSA-SB-017(21 - 21.5)	4.42	39.87
4-Methyl-2-pentanone (MIBK)	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
Methyl tert-butyl ether (MTBE)	2	-	51	3.92	0.0222	-	0.146	0.001	-	0.02	TSA-SB-017(26.5 - 27)	0.00649	–
Nitrobenzene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
n-Propylbenzene	10	-	45	22.2	0.0107	-	92	0.001	-	0.001	TSA-SB-018(20.5 - 21)	2.47	23.77
Styrene (monomer)	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Tetrachloroethene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,1,2-Tetrachloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,2,2-Tetrachloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,1-Trichloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,1,2-Trichloroethane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2,3-Trichlorobenzene	0	-	45	0	–	-	–	0.005	-	0.005	–	0.00500	–
1,2,3-Trichloropropane	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
1,2,4-Trichlorobenzene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
1,2,4-Trimethylbenzene	13	-	45	28.9	0.0207	-	388	0.001	-	0.001	TSA-SB-018(20.5 - 21)	10.7	99.49
1,3,5-Trimethylbenzene	12	-	45	26.7	0.0135	-	107	0.001	-	0.001	TSA-SB-018(20.5 - 21)	2.94	27.53
Trichloroethylene	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
Vinyl chloride	0	-	45	0	–	-	–	0.001	-	0.001	–	0.00100	–
m,p-Xylene	17	-	45	37.8	0.0134	-	340	0.001	-	0.001	TSA-SB-018(20.5 - 21)	11.8	93.1
o-Xylene	16	-	45	35.6	0.0155	-	109	0.001	-	0.001	TSA-SB-018(20.5 - 21)	4.04	30.6
Xylenes	4	-	6	66.7	0.0709	-	13.2	0.02	-	0.02	HVW-10(25.5 - 26.5)	3.52	–
Semi Volatile Organic Compounds													
4-Aminobiphenyl	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Aniline	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzidine	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzoic acid	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzyl alcohol	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Benzyl butyl phthalate	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Bis(2-chloroethoxy)methane	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–

Table Data-2
Soil Risk Assessment Dataset
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
Bis(2-ethylhexyl)phthalate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Bromophenyl phenyl ether	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Chloroaniline	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Chloro-3-methylphenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Chlorophenols	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Chlorophenyl phenyl ether	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Dibenz[a,j]acridine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
3,3'-Dichlorobenzidine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,4-Dichlorophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,6-Dichlorophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Diethyl phthalate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Dimethylaminoazobenzene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,4-Dimethylphenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,4-Dinitrophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,4-Dinitrotoluene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Methyl-4,6-Dinitrophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
a,a-Dimethylphenethylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Dimethyl phthalate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Di-n-butyl phthalate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Di-n-octyl phthalate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Diphenylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Diphenylhydrazine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Ethyl methanesulfonate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Hexachloro-1,3-butadiene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Hexachlorobenzene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Hexachlorocyclopentadiene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Hexachloroethane	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Methanamine, n-methyl-n-nitroso	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Methyl-4,6-Dinitrophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Methyl methanesulfonate	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Methylphenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
3-Methylphenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Methyl pyridine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
1-Naphthylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Naphthylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Nitroaniline	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
3-Nitroaniline	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Nitroaniline	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Nitrophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
4-Nitrophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
n-Nitrosodi-n-butylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--

Table Data-2
Soil Risk Assessment Dataset
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
n-Nitrosodi-n-propylamine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
n-Nitrosopiperidine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Pentachlorobenzene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Pentachlorophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Phenacetin	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Phenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Propyzamide	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Pyridine	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
1,2,4,5-Tetrachlorobenzene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Bromoform	0	-	45	0	--	-	--	0.001	-	0.001	--	0.00100	--
2,4,5-Trichlorophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2,4,6-Trichlorophenol	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Isophorone	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Polycyclic Aromatic Hydrocarbons													
Acenaphthene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Acenaphthylene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Anthracene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Benzo(a)anthracene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Benzo(a)pyrene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Benzo(b)fluoranthene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Benzo(g,h,i)perylene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Benzo(k)fluoranthene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
1,2-Benzphenanthracene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
1-Chloronaphthalene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
2-Chloronaphthalene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Dibenz(a,h)anthracene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
7,12-Dimethylbenz(a)anthracene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Fluoranthene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Fluorene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Indeno(1,2,3-cd)pyrene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
3-Methylchloranthrene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
1-Methylnaphthalene	3	-	45	6.67	2.83	-	13	0.248	-	0.248	TSA-SB-018(20.5 - 21)	0.760	--
2-Methylnaphthalene	3	-	45	6.67	5.33	-	23.8	0.248	-	0.248	TSA-SB-018(20.5 - 21)	1.20	--
Naphthalene	3	-	45	6.67	5.72	-	19.9	0.248	-	0.248	TSA-SB-018(20.5 - 21)	1.11	--
Phenanthrene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Pyrene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Pesticides													
Pentachloronitrobenzene	0	-	45	0	--	-	--	0.248	-	0.248	--	0.248	--
Total Petroleum Hydrocarbons (TPH)													
Gasoline Range Organics (GRO)	17	-	51	33.3	1.54	-	3200	1	-	1	TSA-SB-018(20.5 - 21)	144	940.7
Explosives													

Table Data-2
Soil Risk Assessment Dataset
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/kg)	-	Max (mg/kg)	Min (mg/kg)	-	Max (mg/kg)			
2,6-Dinitrotoluene	0	-	45	0	–	-	–	0.248	-	0.248	–	0.248	–
Inorganics													
Arsenic	28	-	45	62.2	1.77	-	10.9	2	-	2	TSA-SB-015(16.5 - 17)	3.59	4.134
Barium	45	-	45	100	12.4	-	4200	–	-	–	TSA-SB-017(11.5 - 12)	157	558
Cadmium	43	-	45	95.6	0.522	-	3.12	0.5	-	0.5	TSA-SB-014(26.5 - 27)	1.52	1.707
Chromium	44	-	45	97.8	2.64	-	18	2.5	-	2.5	TSA-SB-010(21.5 - 22)	7.98	9.152
Lead	54	-	55	98.2	1.65	-	42.1	1	-	1	TSA-SB-012(26.5 - 27)	10.4	15.05
Mercury	1	-	45	2.22	12.1	-	12.1	0.15	-	0.15	TSA-SB-010(11.5 - 12)	0.416	–
Selenium	3	-	45	6.67	1.41	-	3.31	1	-	1	TSA-SB-018(11.5 - 12)	1.09	–
Silver	0	-	45	0	–	-	–	0.2	-	0.2	–	0.200	–

Notes:

– = Not analyzed/ not applicable.

mg/kg = Milligrams per kilogram.

[a] Only constituents analyzed are presented.
For duplicate samples, the highest detected value or the lowest sample quantitation limit were used.
For constituents analyzed in two methods, the result of the more precise method was used.

[b] Frequency of detection (FOD) = number of detects / total number of samples analyzed.

[c] "–" indicates that the upper confidence limit on the mean (UCL) cannot be calculated due to small data set size. The upper confidence limit on the mean (UCL) was calculated using ProUCL 4.0.

Table Data-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/L)	-	Max (mg/L)	Min (mg/L)	-	Max (mg/L)			
Volatile Organic Compounds													
Acetone	3	-	7	42.9	1.87	-	8.44	0.01	-	2	HVW-10(5/12/2009)	2.08	–
Acrylonitrile	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Benzene	14	-	14	100	0.00306	-	31	–	-	–	HVW-05(5/12/2009)	11.4	30.3
Bromobenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Bromodichloromethane	1	-	7	14.3	0.00161	-	0.00161	0.01	-	0.5	HVW-06(5/11/2009)	0.147	–
Bromomethane	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
2-Butanone	3	-	7	42.9	0.487	-	6.37	0.005	-	1	HVW-10(5/12/2009)	1.24	–
n-Butylbenzene	1	-	7	14.3	0.00052	-	0.00052	0.01	-	0.5	HVW-06(5/11/2009)	0.147	–
sec-Butylbenzene	1	-	7	14.3	0.00046	-	0.00046	0.01	-	0.5	HVW-06(5/11/2009)	0.147	–
tert-Butylbenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Carbon disulfide	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Carbon tetrachloride	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
CFC-11	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
CFC-12	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Chlorobenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Bromochloromethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Chlorodibromomethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Chloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
2-Chloroethyl vinyl ether	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
Chloroform	1	-	7	14.3	0.00176	-	0.00176	0.01	-	0.5	HVW-06(5/11/2009)	0.147	–
Chloromethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
2-Chlorotoluene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
4-Chlorotoluene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Cymene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,2-Dibromo-3-chloropropane	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
1,2-Dibromoethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Dibromomethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,2-Dichlorobenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,4-Dichlorobenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
trans-1,4-Dichlorobutene	0	-	7	0	–	-	–	0.01	-	5	–	1.47	–
1,1-Dichloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,2-Dichloroethane	1	-	7	14.3	0.777	-	0.777	0.001	-	0.5	HVW-05(5/12/2009)	0.23	–
1,1-Dichloroethylene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
cis-1,2-Dichloroethene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
trans-1,2-Dichloroethene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–

Table Data-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/L)	-	Max (mg/L)	Min (mg/L)	-	Max (mg/L)			
Methylene chloride	1	-	7	14.3	0.312	-	0.312	0.005	-	1	HVW-10(5/12/2009)	0.424	–
1,2-Dichloropropane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,3-Dichloropropane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
2,2-Dichloropropane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,1-Dichloropropene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
cis-1,3-Dichloropropene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
trans-1,3-Dichloropropene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Ethylbenzene	14	-	14	100	0.00039	-	9.8	–	-	–	HVW-08(9/24/2009)	3.82	5.369
Iodomethane	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
Isopropylbenzene	6	-	7	85.7	0.00098	-	0.325	0.02	-	0.02	HVW-10(5/12/2009)	0.144	–
1,3-Dichlorobenzene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Methyl n-butyl ketone	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
Toluene	14	-	14	100	0.00298	-	66	–	-	–	HVW-10(9/24/2009)	26	35.928
4-Methyl-2-pentanone (MIBK)	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
Methyl tert-butyl ether (MTBE)	9	-	14	64.3	0.0891	-	1.24	0.001	-	0.5	HVW-08(9/24/2009)	0.455	0.6531
n-Propylbenzene	13	-	14	92.9	0.00185	-	2.18	0.02	-	0.02	HVW-08(9/24/2009)	0.46	1.176
Styrene (monomer)	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Tetrachloroethene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,1,1,2-Tetrachloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,1,2,2-Tetrachloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,1,1-Trichloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,1,2-Trichloroethane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,2,3-Trichlorobenzene	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
1,2,3-Trichloropropane	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
1,2,4-Trichlorobenzene	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
1,2,4-Trimethylbenzene	14	-	14	100	0.00651	-	10.4	–	-	–	HVW-08(9/24/2009)	2.52	6.46
1,3,5-Trimethylbenzene	13	-	14	92.9	0.00268	-	2.69	0.02	-	0.02	HVW-08(9/24/2009)	0.6	1.473
Trichloroethylene	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Vinyl chloride	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
m,p-Xylene	14	-	14	100	0.01	-	22.8	–	-	–	HVW-08(9/24/2009)	9.14	12.779
o-Xylene	14	-	14	100	0.00498	-	9.79	–	-	–	HVW-08(9/24/2009)	4.2	5.816
Semi Volatile Organic Compounds													
Hexachloro-1,3-butadiene	0	-	7	0	–	-	–	0.005	-	2.5	–	0.736	–
Bromoform	0	-	7	0	–	-	–	0.001	-	0.5	–	0.147	–
Polycyclic Aromatic Hydrocarbons													
Naphthalene	10	-	14	71.4	0.00061	-	1.3	0.005	-	1	HVW-08(9/24/2009)	0.423	0.5614

Table Data-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent [a]	Frequency of Detection [b]				Detects			Sample Quantitation Limit			Maximum Location	Arithmetic Average	Upper Confidence Limit on the Mean [c]
	number of detects / number of samples			FOD %	Min (mg/L)	-	Max (mg/L)	Min (mg/L)	-	Max (mg/L)			
Total Petroleum Hydrocarbons (TPH)													
Gasoline Range Organics (GRO)	11	-	11	100	0.182	-	254	–	-	–	HVW-10(9/24/2009)	103	145.667
Inorganics													
ferrous iron	1	-	3	33.3	0.7	-	0.7	1	-	2	HVW-02(2/25/2009)	1.23	–
feric iron	0	-	3	0	–	-	–	1	-	2	–	1.33	–
Manganese	3	-	3	100	0.43	-	1.2	–	-	–	HVW-03(2/24/2009)	0.877	–
Divalent Manganese	2	-	3	66.7	1.2	-	1.3	1	-	1	HVW-04(2/24/2009)	1.17	–
Nitrate	2	-	3	66.7	52.2	-	221	2.5	-	2.5	HVW-04(2/24/2009)	91.9	–
Sulfate	3	-	3	100	4420	-	10700	–	-	–	HVW-02(2/25/2009)	7310	–
Other													
methane	3	-	3	100	0.00029	-	0.0012	–	-	–	HVW-02(2/25/2009)	0.000617	–

Notes:

– = Not analyzed/ not applicable.

mg/L = Milligrams per liter.

[a] Only constituents analyzed are presented.
For duplicate samples, the highest detected value or the lowest sample quantitation limit were used.
For constituents analyzed in two methods, the result of the more precise method was used.

[b] Frequency of detection (FOD) = number of detects / total number of samples analyzed.

[c] "–" indicates that the upper confidence limit on the mean (UCL) cannot be calculated due to small data set size. The upper confidence limit on the mean (UCL) was calculated using ProUCL 4.0.

Table HHRA-1
Selection of Constituents of Potential Concern in Soil - Based on Maximum Detected Concentrations
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects / number of samples			FOD %	Max Detect [a] (mg/kg)	Max SQL (mg/kg)	Site Screening Level (SL) [b] Construction Scenario (mg/kg)		Is EPC > Screening Level? Construction Scenario	Construction Scenario Max / SL (cancer)	Construction Scenario Max / SL (noncancer)	Constituent of Potential Concern (COPC)? Construction
Volatile Organic Compounds												
Acetone	0	/	9	0	–	0.01	2.63E+05	n	–	–	–	no
Acetophenone	0	/	9	0	–	0.248	3.10E+04	n	–	–	–	no
Acrylonitrile	0	/	9	0	–	0.001	2.90E+02	n	–	–	–	no
Benzene	0	/	9	0	–	0.001	4.71E+02	n	–	–	–	no
Bis(2-chloroethyl)ether	0	/	9	0	–	0.248	1.46E+02	c	–	–	–	no
Bis(2-chloroisopropyl)ether	0	/	9	0	–	0.248	3.10E+03	c	–	–	–	no
Bromobenzene	0	/	9	0	–	0.001	1.40E+03	n	–	–	–	no
Bromodichloromethane	0	/	9	0	–	0.001	3.50E+03	c	–	–	–	no
Bromomethane	0	/	9	0	–	0.005	6.71E+01	n	–	–	–	no
2-Butanone	0	/	9	0	–	0.005	1.48E+05	n	–	–	–	no
n-Butylbenzene	0	/	9	0	–	0.001	1.80E+04	n	–	–	–	no
sec-Butylbenzene	0	/	9	0	–	0.001	1.05E+04	n	–	–	–	no
tert-Butylbenzene	0	/	9	0	–	0.001	1.04E+04	n	–	–	–	no
Carbon disulfide	0	/	9	0	–	0.001	5.89E+03	n	–	–	–	no
Carbon tetrachloride	0	/	9	0	–	0.001	1.99E+02	n	–	–	–	no
CFC-11	0	/	9	0	–	0.001	5.82E+03	n	–	–	–	no
CFC-12	0	/	9	0	–	0.001	1.37E+03	n	–	–	–	no
Chlorobenzene	0	/	9	0	–	0.001	1.58E+03	n	–	–	–	no
Bromochloromethane	0	/	9	0	–	0.001	NA	n	–	–	–	no
Chlorodibromomethane	0	/	9	0	–	0.001	1.99E+03	c	–	–	–	no
Chloroethane	0	/	9	0	–	0.001	1.23E+05	n	–	–	–	no
2-Chloroethyl vinyl ether	0	/	9	0	–	0.005	NA	n	–	–	–	no
Chloroform	0	/	9	0	–	0.001	6.71E+02	c	–	–	–	no
Chloromethane	0	/	9	0	–	0.001	1.13E+03	n	–	–	–	no
2-Chlorophenol	0	/	9	0	–	0.248	1.55E+03	n	–	–	–	no
2-Chlorotoluene	0	/	9	0	–	0.001	6.19E+03	n	–	–	–	no
4-Chlorotoluene	0	/	9	0	–	0.001	2.17E+04	n	–	–	–	no
Cymene	0	/	9	0	–	0.001	NA	n	–	–	–	no
Dibenzofuran	0	/	9	0	–	0.248	9.53E+02	n	–	–	–	no
1,2-Dibromo-3-chloropropane	0	/	9	0	–	0.005	5.99E+01	n	–	–	–	no
1,2-Dibromoethane	0	/	9	0	–	0.001	4.86E+01	c	–	–	–	no
Dibromomethane	0	/	9	0	–	0.001	3.10E+03	n	–	–	–	no
1,2-Dichlorobenzene	0	/	9	0	–	0.248	9.71E+03	n	–	–	–	no
1,4-Dichlorobenzene	0	/	9	0	–	0.248	3.78E+03	c	–	–	–	no
trans-1,4-Dichlorobutene	0	/	9	0	–	0.01	9.80E+00	c	–	–	–	no
1,1-Dichloroethane	0	/	9	0	–	0.001	6.88E+03	c	–	–	–	no
1,2-Dichloroethane	0	/	9	0	–	0.001	7.51E+02	c	–	–	–	no
1,1-Dichloroethylene	0	/	9	0	–	0.001	1.83E+03	n	–	–	–	no
cis-1,2-Dichloroethene	0	/	9	0	–	0.001	3.10E+03	c	–	–	–	no
trans-1,2-Dichloroethene	0	/	9	0	–	0.001	8.14E+02	n	–	–	–	no
Methylene chloride	0	/	9	0	–	0.005	1.06E+04	n	–	–	–	no
1,2-Dichloropropane	0	/	9	0	–	0.001	1.17E+02	n	–	–	–	no
1,3-Dichloropropane	0	/	9	0	–	0.001	6.19E+03	n	–	–	–	no
2,2-Dichloropropane	0	/	9	0	–	0.001	3.51E+01	n	–	–	–	no
1,1-Dichloropropene	0	/	9	0	–	0.001	2.17E+03	c	–	–	–	no
cis-1,3-Dichloropropene	0	/	9	0	–	0.001	5.10E+02	n	–	–	–	no
trans-1,3-Dichloropropene	0	/	9	0	–	0.001	5.10E+02	n	–	–	–	no
Ethylbenzene	0	/	9	0	–	0.001	6.63E+03	c	–	–	–	no
Iodomethane	0	/	9	0	–	0.005	5.41E+01	n	–	–	–	no
Isopropylbenzene	0	/	9	0	–	0.001	1.03E+04	n	–	–	–	no
1,3-Dichlorobenzene	0	/	9	0	–	0.248	9.29E+03	n	–	–	–	no
Methyl n-butyl ketone	0	/	9	0	–	0.005	1.13E+03	n	–	–	–	no
Toluene	0	/	9	0	–	0.001	2.11E+04	n	–	–	–	no
4-Methyl-2-pentanone (MIBK)	0	/	9	0	–	0.005	2.31E+04	n	–	–	–	no
Methyl tert-butyl ether (MTBE)	0	/	9	0	–	0.001	6.55E+04	c	–	–	–	no
Nitrobenzene	0	/	9	0	–	0.248	5.20E+02	n	–	–	–	no
n-Propylbenzene	0	/	9	0	–	0.001	1.64E+04	n	–	–	–	no
Styrene (monomer)	0	/	9	0	–	0.001	3.03E+04	n	–	–	–	no
Tetrachloroethene	0	/	9	0	–	0.001	3.38E+02	c	–	–	–	no

Table HHRA-1
Selection of Constituents of Potential Concern in Soil - Based on Maximum Detected Concentrations
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects / number of samples			FOD %	Max Detect [a] (mg/kg)	Max SQL (mg/kg)	Site Screening Level (SL) [b] Construction Scenario (mg/kg)		Is EPC > Screening Level? Construction Scenario	Construction Scenario Max / SL (cancer)	Construction Scenario Max / SL (noncancer)	Constituent of Potential Concern (COPC)? Construction
1,1,1,2-Tetrachloroethane	0	/	9	0	–	0.001	2.78E+03	c	–	–	–	no
1,1,2,2-Tetrachloroethane	0	/	9	0	–	0.001	5.99E+02	c	–	–	–	no
1,1,1-Trichloroethane	0	/	9	0	–	0.001	6.43E+04	n	–	–	–	no
1,1,2-Trichloroethane	0	/	9	0	–	0.001	1.24E+03	n	–	–	–	no
1,2,3-Trichlorobenzene	0	/	9	0	–	0.005	2.48E+02	n	–	–	–	no
1,2,3-Trichloropropane	0	/	9	0	–	0.001	3.10E+01	c	–	–	–	no
1,2,4-Trichlorobenzene	0	/	9	0	–	0.248	4.27E+02	n	–	–	–	no
1,2,4-Trimethylbenzene	0	/	9	0	–	0.001	4.65E+02	n	–	–	–	no
1,3,5-Trimethylbenzene	0	/	9	0	–	0.001	3.10E+03	n	–	–	–	no
Trichloroethylene	0	/	9	0	–	0.001	4.60E+03	c	–	–	–	no
Vinyl chloride	0	/	9	0	–	0.001	2.48E+02	c	–	–	–	no
m,p-Xylene	0	/	9	0	–	0.001	2.38E+04	n	–	–	–	no
o-Xylene	0	/	9	0	–	0.001	2.75E+04	n	–	–	–	no
Semi Volatile Organic Compounds												
4-Aminobiphenyl	0	/	9	0	–	0.248	7.88E+00	c	–	–	–	no
Aniline	0	/	9	0	–	0.248	1.41E+03	n	–	–	–	no
Benzidine	0	/	9	0	–	0.248	7.20E-01	c	–	–	–	no
Benzoic acid	0	/	9	0	–	0.248	9.53E+05	n	–	–	–	no
Benzyl alcohol	0	/	9	0	–	0.248	2.38E+04	n	–	–	–	no
Benzyl butyl phthalate	0	/	9	0	–	0.248	4.76E+04	n	–	–	–	no
Bis(2-chloroethoxy)methane	0	/	9	0	–	0.248	7.15E+02	n	–	–	–	no
Bis(2-ethylhexyl)phthalate	0	/	9	0	–	0.248	4.76E+03	n	–	–	–	no
4-Bromophenyl phenyl ether	0	/	9	0	–	0.248	NA	n	–	–	–	no
4-Chloroaniline	0	/	9	0	–	0.248	8.34E+02	c	–	–	–	no
4-Chloro-3-methylphenol	0	/	9	0	–	0.248	2.38E+04	n	–	–	–	no
Chlorophenols	0	/	9	0	–	0.248	7.15E+03	n	–	–	–	no
4-Chlorophenyl phenyl ether	0	/	9	0	–	0.248	NA	n	–	–	–	no
Dibenz[a,j]acridine	0	/	9	0	–	0.248	1.39E+02	c	–	–	–	no
3,3'-Dichlorobenzidine	0	/	9	0	–	0.248	3.64E+02	c	–	–	–	no
2,4-Dichlorophenol	0	/	9	0	–	0.248	7.15E+02	n	–	–	–	no
2,6-Dichlorophenol	0	/	9	0	–	0.248	7.15E+02	n	–	–	–	no
Diethyl phthalate	0	/	9	0	–	0.248	1.91E+05	n	–	–	–	no
4-Dimethylaminoazobenzene	0	/	9	0	–	0.248	3.60E+01	c	–	–	–	no
2,4-Dimethylphenol	0	/	9	0	–	0.248	4.76E+03	n	–	–	–	no
2,4-Dinitrophenol	0	/	9	0	–	0.248	4.76E+02	n	–	–	–	no
2,4-Dinitrotoluene	0	/	9	0	–	0.248	4.76E+02	n	–	–	–	no
a,a-Dimethylphenethylamine	0	/	9	0	–	0.248	NA	n	–	–	–	no
Dimethyl phthalate	0	/	9	0	–	0.248	2.38E+06	n	–	–	–	no
Di-n-butyl phthalate	0	/	9	0	–	0.248	2.38E+04	n	–	–	–	no
Di-n-octyl phthalate	0	/	9	0	–	0.248	9.53E+03	n	–	–	–	no
Diphenylamine	0	/	9	0	–	0.248	5.96E+03	n	–	–	–	no
Diphenylhydrazine	0	/	9	0	–	0.248	2.07E+02	c	–	–	–	no
Ethyl methanesulfonate	0	/	9	0	–	0.248	NA	n	–	–	–	no
Hexachloro-1,3-butadiene	0	/	9	0	–	0.248	2.38E+02	n	–	–	–	no
Hexachlorobenzene	0	/	9	0	–	0.248	1.03E+02	c	–	–	–	no
Hexachlorocyclopentadiene	0	/	9	0	–	0.248	8.11E+02	n	–	–	–	no
Hexachloroethane	0	/	9	0	–	0.248	2.38E+02	n	–	–	–	no
Methanamine, n-methyl-n-nitroso	0	/	9	0	–	0.248	1.91E+00	n	–	–	–	no
2-Methyl-4,6-Dinitrophenol	0	/	9	0	–	0.248	2.38E+01	n	–	–	–	no
Methyl methanesulfonate	0	/	9	0	–	0.248	1.67E+03	c	–	–	–	no
2-Methylphenol	0	/	9	0	–	0.248	1.19E+04	n	–	–	–	no
3-Methylphenol	0	/	9	0	–	0.248	1.19E+04	n	–	–	–	no
2-Methyl pyridine	0	/	9	0	–	0.248	NA	n	–	–	–	no
1-Naphthylamine	0	/	9	0	–	0.248	NA	n	–	–	–	no
2-Naphthylamine	0	/	9	0	–	0.248	9.26E+01	c	–	–	–	no
2-Nitroaniline	0	/	9	0	–	0.248	3.88E+02	n	–	–	–	no

Table HHRA-1
Selection of Constituents of Potential Concern in Soil - Based on Maximum Detected Concentrations
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects /	number of samples	FOD %	Max Detect [a] (mg/kg)	Max SQL (mg/kg)	Site Screening Level (SL) [b] Construction Scenario (mg/kg)		Is EPC > Screening Level? Construction Scenario	Construction Scenario Max / SL (cancer)	Max / SL (noncancer)	Constituent of Potential Concern (COPC)? Construction
3-Nitroaniline	0	/ 9	0	–	0.248	3.88E+02	n	–	–	–	no
4-Nitroaniline	0	/ 9	0	–	0.248	9.37E+02	n	–	–	–	no
2-Nitrophenol	0	/ 9	0	–	0.248	NA	n	–	–	–	no
4-Nitrophenol	0	/ 9	0	–	0.248	NA	n	–	–	–	no
n-Nitrosodi-n-butylamine	0	/ 9	0	–	0.248	2.90E+01	c	–	–	–	no
n-Nitrosodi-n-propylamine	0	/ 9	0	–	0.248	2.38E+01	c	–	–	–	no
n-Nitrosopiperidine	0	/ 9	0	–	0.248	1.76E+01	c	–	–	–	no
Pentachlorobenzene	0	/ 9	0	–	0.248	1.91E+02	n	–	–	–	no
Pentachlorophenol	0	/ 9	0	–	0.248	1.03E+03	c	–	–	–	no
Phenacetin	0	/ 9	0	–	0.248	7.52E+04	c	–	–	–	no
Phenol	0	/ 9	0	–	0.248	6.68E+04	n	–	–	–	no
Propyzamide	0	/ 9	0	–	0.248	1.79E+04	n	–	–	–	no
Pyridine	0	/ 9	0	–	0.248	3.10E+02	n	–	–	–	no
1,2,4,5-Tetrachlorobenzene	0	/ 9	0	–	0.248	7.15E+01	n	–	–	–	no
Bromoform	0	/ 9	0	–	0.001	4.76E+03	n	–	–	–	no
2,4,5-Trichlorophenol	0	/ 9	0	–	0.248	2.38E+04	n	–	–	–	no
2,4,6-Trichlorophenol	0	/ 9	0	–	0.248	2.38E+02	n	–	–	–	no
Isophorone	0	/ 9	0	–	0.248	4.75E+04	n	–	–	–	no
Polycyclic Aromatic Hydrocarbons											
Acenaphthene	0	/ 9	0	–	0.248	1.86E+04	n	–	–	–	no
Acenaphthylene	0	/ 9	0	–	0.248	1.34E+04	n	–	–	–	no
Anthracene	0	/ 9	0	–	0.248	6.68E+04	n	–	–	–	no
Benzo(a)anthracene	0	/ 9	0	–	0.248	2.13E+02	c	–	–	–	no
Benzo(a)pyrene	0	/ 9	0	–	0.248	2.13E+01	c	–	–	–	no
Benzo(b)fluoranthene	0	/ 9	0	–	0.248	2.13E+02	c	–	–	–	no
Benzo(g,h,i)perylene	0	/ 9	0	–	0.248	6.68E+03	n	–	–	–	no
Benzo(k)fluoranthene	0	/ 9	0	–	0.248	2.06E+03	c	–	–	–	no
Chrysene	0	/ 9	0	–	0.248	2.06E+04	c	–	–	–	no
1-Chloronaphthalene	0	/ 9	0	–	0.248	2.48E+04	n	–	–	–	no
2-Chloronaphthalene	0	/ 9	0	–	0.248	2.48E+04	n	–	–	–	no
Dibenz(a,h)anthracene	0	/ 9	0	–	0.248	2.13E+01	c	–	–	–	no
7,12-Dimethylbenz(a)anthracene	0	/ 9	0	–	0.248	6.20E-01	c	–	–	–	no
Fluoranthene	0	/ 9	0	–	0.248	8.91E+03	n	–	–	–	no
Fluorene	0	/ 9	0	–	0.248	8.91E+03	n	–	–	–	no
Indeno(1,2,3-cd)pyrene	0	/ 9	0	–	0.248	2.13E+02	c	–	–	–	no
3-Methylchloranthrene	0	/ 9	0	–	0.248	7.52E+00	c	–	–	–	no
1-Methylnaphthalene	0	/ 9	0	–	0.248	5.38E+03	c	–	–	–	no
2-Methylnaphthalene	0	/ 9	0	–	0.248	8.91E+02	n	–	–	–	no
Naphthalene	0	/ 9	0	–	0.248	7.02E+02	n	–	–	–	no
Phenanthrene	0	/ 9	0	–	0.248	7.15E+03	n	–	–	–	no
Pyrene	0	/ 9	0	–	0.248	6.68E+03	n	–	–	–	no
Pesticides											
Pentachloronitrobenzene	0	/ 9	0	–	0.248	6.41E+02	c	–	–	–	no
Total Petroleum Hydrocarbons (TPH)											
Gasoline Range Organics (GRO)	0	/ 9	0	–	1	NA	n	–	–	–	no
Explosives											
2,6-Dinitrotoluene	0	/ 9	0	–	0.248	2.39E+02	n	–	–	–	no
Inorganics											
Arsenic	7	/ 9	77.8	5.91	2	6.54E+01	n	no	–	9.04E-02	no
Barium	9	/ 9	100	99.8	–	4.35E+03	n	no	–	2.29E-02	no
Cadmium	9	/ 9	100	2.46	–	3.09E+02	n	no	–	7.97E-03	no
Chromium	9	/ 9	100	13.8	–	4.49E+02	n	no	–	3.07E-02	no
Lead	9	/ 9	100	24.3	–	8.00E+02	IEUBK	no	–	–	no
Mercury	0	/ 9	0	–	0.15	6.36E+01	n	–	–	–	no
Selenium	0	/ 9	0	–	1	1.55E+03	n	–	–	–	no
Silver	0	/ 9	0	–	0.2	1.55E+03	n	–	–	–	no
Total Maximum / Screening Level Ratios									NA	0.2	
Total Maximum / Screening Level Risk (multiply cancer ratio by 1E-5 and non cancer ratio by 1)									NA	0.2	

Table HHRA-1
Selection of Constituents of Potential Concern in Soil - Based on Maximum Detected Concentrations
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects / number of samples	FOD %	Max Detect [a] (mg/kg)	Max SQL (mg/kg)	Site Screening Level (SL) [b] Construction Scenario (mg/kg)	Is EPC > Screening Level? Construction Scenario	Construction Scenario Max / SL (cancer)	Construction Scenario Max / SL (noncancer)	Constituent of Potential Concern (COPC)? Construction
						Target Organ Max/SL Ratios			
						Kidney and Liver		0.03	
						Brain		NA	
						Nasal		NA	
						Eyes		NA	
						Skin		0.09	
						Lungs		0.03	
						Gastrointestinal Tract and Forestomach		NA	
						Whole Body		NA	
						Blood		NA	
						Nervous System		NA	
						Dental		NA	
						Red Blood Cells		NA	
						Glands		NA	
						Fetus		0.02	
						Immune System		NA	
						Development		NA	
						Reproduction		NA	
						Bone		NA	
						Not Available/ Not Reported		NA	

Notes:

– =	Not applicable.
Max =	Maximum concentration.
mg/kg =	Milligrams per kilogram.
NA =	Not available.
SQL =	Sample Quantification Limit.
UTL =	Upper tolerance limit.

[a]	Maximum detected concentration.
[b]	See Appendix E, Table E.2-2 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.

Table HHRA-2
Selection of Constituents of Potential Concern in Soil for the Vapor Intrusion Pathway
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent [a]	Frequency of Detection (FOD) number of detects /		number of samples	FOD %	Max Detect (mg/kg)	Constituent of Potential Concern for Vapor Inhalation [a]
Volatile Organic Compounds						
Acetone	0	/	45	0	–	no
Acetophenone	0	/	45	0	–	no
Acrylonitrile	0	/	45	0	–	no
Benzene	16	/	51	31.4	10.1	yes
Bis(2-chloroethyl)ether	0	/	45	0	–	no
Bis(2-chloroisopropyl)ether	0	/	45	0	–	no
Bromobenzene	0	/	45	0	–	no
Bromodichloromethane	0	/	45	0	–	no
Bromomethane	0	/	45	0	–	no
2-Butanone	0	/	45	0	–	no
n-Butylbenzene	3	/	45	6.67	19.6	yes
sec-Butylbenzene	2	/	45	4.44	1.02	yes
tert-Butylbenzene	0	/	45	0	–	no
Carbon disulfide	0	/	45	0	–	no
Carbon tetrachloride	0	/	45	0	–	no
CFC-11	0	/	45	0	–	no
CFC-12	0	/	45	0	–	no
Chlorobenzene	0	/	45	0	–	no
Bromochloromethane	0	/	45	0	–	no
Chloroethane	0	/	45	0	–	no
2-Chloroethyl vinyl ether	0	/	45	0	–	no
Chloroform	0	/	45	0	–	no
Chloromethane	0	/	45	0	–	no
2-Chlorophenol	0	/	45	0	–	no
2-Chlorotoluene	0	/	45	0	–	no
4-Chlorotoluene	0	/	45	0	–	no
Cymene	0	/	45	0	–	no
Dibenzofuran	0	/	45	0	–	no
1,2-Dibromoethane	0	/	45	0	–	no
Dibromomethane	0	/	45	0	–	no
1,2-Dichlorobenzene	0	/	45	0	–	no
1,4-Dichlorobenzene	0	/	45	0	–	no
trans-1,4-Dichlorobutene	0	/	45	0	–	no
1,1-Dichloroethane	0	/	45	0	–	no
1,2-Dichloroethane	0	/	45	0	–	no
1,1-Dichloroethylene	0	/	45	0	–	no
cis-1,2-Dichloroethene	0	/	45	0	–	no
trans-1,2-Dichloroethene	0	/	45	0	–	no
Methylene chloride	0	/	45	0	–	no
1,2-Dichloropropane	0	/	45	0	–	no
1,3-Dichloropropane	0	/	45	0	–	no
2,2-Dichloropropane	0	/	45	0	–	no
1,1-Dichloropropene	0	/	45	0	–	no
cis-1,3-Dichloropropene	0	/	45	0	–	no
trans-1,3-Dichloropropene	0	/	45	0	–	no
Ethylbenzene	14	/	51	27.5	149	yes
Iodomethane	0	/	45	0	–	no
Isopropylbenzene	3	/	45	6.67	30.9	yes
1,3-Dichlorobenzene	0	/	45	0	–	no
Methyl n-butyl ketone	0	/	45	0	–	no
Toluene	18	/	51	35.3	177	yes
4-Methyl-2-pentanone (MIBK)	0	/	45	0	–	no
Methyl tert-butyl ether (MTBE)	2	/	51	3.92	0.146	yes
Nitrobenzene	0	/	45	0	–	no
n-Propylbenzene	10	/	45	22.2	92	yes
Styrene (monomer)	0	/	45	0	–	no
Tetrachloroethene	0	/	45	0	–	no
1,1,1,2-Tetrachloroethane	0	/	45	0	–	no

Table HHRA-2
Selection of Constituents of Potential Concern in Soil for the Vapor Intrusion Pathway
Total Soil Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent [a]	Frequency of Detection (FOD) number of detects / number of samples			FOD %	Max Detect (mg/kg)	Constituent of Potential Concern for Vapor Inhalation [a]
1,1,2,2-Tetrachloroethane	0	/	45	0	--	no
1,1,1-Trichloroethane	0	/	45	0	--	no
1,1,2-Trichloroethane	0	/	45	0	--	no
1,2,3-Trichlorobenzene	0	/	45	0	--	no
1,2,3-Trichloropropane	0	/	45	0	--	no
1,2,4-Trichlorobenzene	0	/	45	0	--	no
1,2,4-Trimethylbenzene	13	/	45	28.9	388	yes
1,3,5-Trimethylbenzene	12	/	45	26.7	107	yes
Trichloroethylene	0	/	45	0	--	no
Vinyl chloride	0	/	45	0	--	no
m,p-Xylene	17	/	45	37.8	340	yes
o-Xylene	16	/	45	35.6	109	yes
Xylenes	4	/	6	66.7	13.2	yes
Semi Volatile Organic Compounds						
n-Nitrosodi-n-butylamine	0	/	45	0	--	no
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0	/	45	0	--	no
Acenaphthylene	0	/	45	0	--	no
Anthracene	0	/	45	0	--	no
1-Chloronaphthalene	0	/	45	0	--	no
2-Chloronaphthalene	0	/	45	0	--	no
Fluorene	0	/	45	0	--	no
1-Methylnaphthalene	3	/	45	6.67	13	yes
2-Methylnaphthalene	3	/	45	6.67	23.8	yes
Naphthalene	3	/	45	6.67	19.9	yes
Phenanthrene	0	/	45	0	--	no

Notes:

-- = Not applicable.
Max = Maximum concentration.
mg/kg = Milligrams per kilogram.
NA = Not available.
SQL = Sample Quantification Limit.

[a] All detected volatile constituents were selected as COPCs for the vapor inhalation pathway.

Table HHRA-3
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Maximum Detected Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects / number of			FOD %	Max Detect [a] (mg/L)	Max SQL (mg/L)		Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)		Is Max > Screening Level?	Max / SL (cancer)	Max / SL (noncancer)
Volatile Organic Compounds												
Acetone	3	/	7	42.9	8.44	2		2.20E+02	n	no	–	3.84E-02
Acrylonitrile	0	/	7	0	–	0.5	^	8.50E-02	c	–	–	–
Benzene	14	/	14	100	31	–		1.40E-02	c	YES	2.21E+03	–
Bromobenzene	0	/	7	0	–	0.5		NA	n	–	–	–
Bromodichloromethane	1	/	7	14.3	0.00161	0.5		2.10E-02	c	no	7.67E-02	–
Bromomethane	0	/	7	0	–	2.5	^	2.00E-02	n	–	–	–
2-Butanone	3	/	7	42.9	6.37	1		4.40E+02	n	no	–	1.45E-02
n-Butylbenzene	1	/	7	14.3	0.00052	0.5		2.60E-01	n	no	–	2.00E-03
sec-Butylbenzene	1	/	7	14.3	0.00046	0.5		2.50E-01	n	no	–	1.84E-03
tert-Butylbenzene	0	/	7	0	–	0.5	^	2.90E-01	n	–	–	–
Carbon disulfide	0	/	7	0	–	0.5		5.60E-01	n	–	–	–
Carbon tetrachloride	0	/	7	0	–	0.5	^	5.00E-03	c	–	–	–
CFC-11	0	/	7	0	–	0.5	^	1.80E-01	n	–	–	–
CFC-12	0	/	7	0	–	0.5	^	1.40E-02	n	–	–	–
Chlorobenzene	0	/	7	0	–	0.5	^	3.90E-01	n	–	–	–
Bromochloromethane	0	/	7	0	–	0.5		NA	n	–	–	–
Chloroethane	0	/	7	0	–	0.5		2.80E+01	n	–	–	–
2-Chloroethyl vinyl ether	0	/	7	0	–	2.5		NA	n	–	–	–
Chloroform	1	/	7	14.3	0.00176	0.5		8.00E-02	c	no	2.20E-02	–
Chloromethane	0	/	7	0	–	0.5	^	6.70E-02	c	–	–	–
2-Chlorotoluene	0	/	7	0	–	0.5		NA	n	–	–	–
4-Chlorotoluene	0	/	7	0	–	0.5		NA	n	–	–	–
Cymene	0	/	7	0	–	0.5		NA	n	–	–	–
1,2-Dibromoethane	0	/	7	0	–	0.5	^	3.60E-03	c	–	–	–
Dibromomethane	0	/	7	0	–	0.5		9.90E-01	n	–	–	–
1,2-Dichlorobenzene	0	/	7	0	–	0.5		2.60E+00	n	–	–	–
1,4-Dichlorobenzene	0	/	7	0	–	0.5		8.20E+00	c	–	–	–
trans-1,4-Dichlorobutene	0	/	7	0	–	5		NA	c	–	–	–
1,1-Dichloroethane	0	/	7	0	–	0.5		2.20E+00	c	–	–	–
1,2-Dichloroethane	1	/	7	14.3	0.777	0.5		2.30E-02	c	YES	3.38E+01	–
1,1-Dichloroethylene	0	/	7	0	–	0.5	^	1.90E-01	n	–	–	–
cis-1,2-Dichloroethene	0	/	7	0	–	0.5	^	2.10E-01	n	–	–	–
trans-1,2-Dichloroethene	0	/	7	0	–	0.5	^	1.80E-01	n	–	–	–
Methylene chloride	1	/	7	14.3	0.312	1		5.80E-01	c	no	5.38E-01	–
1,2-Dichloropropane	0	/	7	0	–	0.5	^	3.50E-02	c	–	–	–
1,3-Dichloropropane	0	/	7	0	–	0.5		NA	n	–	–	–

Table HHRA-3
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Maximum Detected Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects / number of			FOD %	Max Detect [a] (mg/L)	Max SQL (mg/L)		Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)		Is Max > Screening Level?	Max / SL (cancer)	Max / SL (noncancer)
2,2-Dichloropropane	0	/	7	0	–	0.5		NA	n	–	–	–
1,1-Dichloropropene	0	/	7	0	–	0.5		NA	c	–	–	–
cis-1,3-Dichloropropene	0	/	7	0	–	0.5		NA	c	–	–	–
trans-1,3-Dichloropropene	0	/	7	0	–	0.5		NA	c	–	–	–
Ethylbenzene	14	/	14	100	9.8	–		7.00E-01	c	YES	1.40E+01	–
Iodomethane	0	/	7	0	–	2.5		NA	n	–	–	–
Isopropylbenzene	6	/	7	85.7	0.325	0.02		8.40E-03	n	YES	–	3.87E+01
1,3-Dichlorobenzene	0	/	7	0	–	0.5		8.30E-01	n	–	–	–
Methyl n-butyl ketone	0	/	7	0	–	2.5		NA	n	–	–	–
Toluene	14	/	14	100	66	–		1.50E+00	n	YES	–	4.40E+01
4-Methyl-2-pentanone (MIBK)	0	/	7	0	–	2.5		1.40E+01	n	–	–	–
Methyl tert-butyl ether (MTBE)	9	/	14	64.3	1.24	0.5		1.20E+02	c	no	1.03E-02	–
n-Propylbenzene	13	/	14	92.9	2.18	0.02		3.20E-01	n	YES	–	6.81E+00
Styrene (monomer)	0	/	7	0	–	0.5		8.90E+00	n	–	–	–
Tetrachloroethene	0	/	7	0	–	0.5	^	1.10E-02	c	–	–	–
1,1,1,2-Tetrachloroethane	0	/	7	0	–	0.5	^	3.30E-02	c	–	–	–
1,1,2,2-Tetrachloroethane	0	/	7	0	–	0.5	^	3.00E-02	c	–	–	–
1,1,1-Trichloroethane	0	/	7	0	–	0.5		3.10E+00	n	–	–	–
1,1,2-Trichloroethane	0	/	7	0	–	0.5	^	4.10E-02	c	–	–	–
1,2,3-Trichlorobenzene	0	/	7	0	–	2.5		NA	n	–	–	–
1,2,3-Trichloropropane	0	/	7	0	–	0.5	^	2.90E-01	c	–	–	–
1,2,4-Trichlorobenzene	0	/	7	0	–	2.5		3.40E+00	n	–	–	–
1,2,4-Trimethylbenzene	14	/	14	100	10.4	–		2.40E-02	n	YES	–	4.33E+02
1,3,5-Trimethylbenzene	13	/	14	92.9	2.69	0.02		2.50E-02	n	YES	–	1.08E+02
Trichloroethylene	0	/	7	0	–	0.5	^	5.00E-03	c	–	–	–
Vinyl chloride	0	/	7	0	–	0.5	^	2.50E-03	c	–	–	–
m,p-Xylene	14	/	14	100	22.8	–		2.30E+01	n	no	–	9.91E-01
o-Xylene	14	/	14	100	9.79	–		3.30E+01	n	no	–	2.97E-01
Polycyclic Aromatic Hydrocarbons												
Naphthalene	10	/	14	71.4	1.3	1		1.50E-01	c	YES	8.67E+00	–
Total Maximum / Screening Level Ratios											2270	632
Total Maximum / Screening Level Risk (multiply cancer ratio by 1E-5 and non cancer ratio by 1)											2.E-02	632

Table HHRA-3
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Maximum Detected Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects / number of	FOD %	Max Detect [a] (mg/L)	Max SQL (mg/L)	Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)	Is Max > Screening Level?	Max / SL (cancer)	Max / SL (noncancer)
						Target Organ Max/SL Ratios		
						Kidney and Liver		82.7
						Brain		NA
						Nasal		NA
						Eyes		NA
						Skin		NA
						Lungs		NA
						Gastrointestinal Tract and Forestomach		NA
						Whole Body		1
						Blood		NA
						Nervous System		45.3
						Dental		NA
						Red Blood Cells		NA
						Glands		38.7
						Fetus		0.01
						Immune System		NA
						Development		0.01
						Reproduction		NA
						Bone		NA
						Not Available/ Not Reported		548

Notes:

– = Not applicable.
^ = Maximum SQL exceeds minimum criteria for constituent not detected otherwise.
Max = Maximum concentration.
mg/L = Milligrams per liter.
NA = Not available.
SQL = Sample Quantification Limit.

[a] Maximum detected concentration.
[b] See Appendix E, Table E.2-3 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.

Table HHRA-4
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Exposure Point Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects / number of			FOD %	EPC [a] (mg/L)		Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)		Is EPC > Screening Level?	EPC / SL (cancer)	EPC / SL (noncancer)	Constituent of Potential Concern (COPC)? [c]
Volatile Organic Compounds												
Acetone	3	/	7	42.9	8.44	m	2.20E+02	n	no	–	3.84E-02	yes
Acrylonitrile	0	/	7	0	–		8.50E-02	c	–	–	–	no
Benzene	14	/	14	100	30.3		1.40E-02	c	YES	2.16E+03	–	yes
Bromobenzene	0	/	7	0	–		NA	n	–	–	–	no
Bromodichloromethane	1	/	7	14.3	0.00161	m	2.10E-02	c	no	7.67E-02	–	yes
Bromomethane	0	/	7	0	–		2.00E-02	n	–	–	–	no
2-Butanone	3	/	7	42.9	6.37	m	4.40E+02	n	no	–	1.45E-02	yes
n-Butylbenzene	1	/	7	14.3	0.00052	m	2.60E-01	n	no	–	2.00E-03	yes
sec-Butylbenzene	1	/	7	14.3	0.00046	m	2.50E-01	n	no	–	1.84E-03	yes
tert-Butylbenzene	0	/	7	0	–		2.90E-01	n	–	–	–	no
Carbon disulfide	0	/	7	0	–		5.60E-01	n	–	–	–	no
Carbon tetrachloride	0	/	7	0	–		5.00E-03	c	–	–	–	no
CFC-11	0	/	7	0	–		1.80E-01	n	–	–	–	no
CFC-12	0	/	7	0	–		1.40E-02	n	–	–	–	no
Chlorobenzene	0	/	7	0	–		3.90E-01	n	–	–	–	no
Bromochloromethane	0	/	7	0	–		NA	n	–	–	–	no
Chloroethane	0	/	7	0	–		2.80E+01	n	–	–	–	no
2-Chloroethyl vinyl ether	0	/	7	0	–		NA	n	–	–	–	no
Chloroform	1	/	7	14.3	0.00176	m	8.00E-02	c	no	2.20E-02	–	yes
Chloromethane	0	/	7	0	–		6.70E-02	c	–	–	–	no
2-Chlorotoluene	0	/	7	0	–		NA	n	–	–	–	no
4-Chlorotoluene	0	/	7	0	–		NA	n	–	–	–	no
Cymene	0	/	7	0	–		NA	n	–	–	–	no
1,2-Dibromoethane	0	/	7	0	–		3.60E-03	c	–	–	–	no
Dibromomethane	0	/	7	0	–		9.90E-01	n	–	–	–	no
1,2-Dichlorobenzene	0	/	7	0	–		2.60E+00	n	–	–	–	no
1,4-Dichlorobenzene	0	/	7	0	–		8.20E+00	c	–	–	–	no
trans-1,4-Dichlorobutene	0	/	7	0	–		NA	c	–	–	–	no
1,1-Dichloroethane	0	/	7	0	–		2.20E+00	c	–	–	–	no
1,2-Dichloroethane	1	/	7	14.3	0.777	m	2.30E-02	c	YES	3.38E+01	–	yes
1,1-Dichloroethylene	0	/	7	0	–		1.90E-01	n	–	–	–	no
cis-1,2-Dichloroethene	0	/	7	0	–		2.10E-01	n	–	–	–	no
trans-1,2-Dichloroethene	0	/	7	0	–		1.80E-01	n	–	–	–	no
Methylene chloride	1	/	7	14.3	0.312	m	5.80E-01	c	no	5.38E-01	–	yes
1,2-Dichloropropane	0	/	7	0	–		3.50E-02	c	–	–	–	no
1,3-Dichloropropane	0	/	7	0	–		NA	n	–	–	–	no
2,2-Dichloropropane	0	/	7	0	–		NA	n	–	–	–	no
1,1-Dichloropropene	0	/	7	0	–		NA	c	–	–	–	no
cis-1,3-Dichloropropene	0	/	7	0	–		NA	c	–	–	–	no
trans-1,3-Dichloropropene	0	/	7	0	–		NA	c	–	–	–	no
Ethylbenzene	14	/	14	100	5.369		7.00E-01	c	YES	7.67E+00	–	yes
Iodomethane	0	/	7	0	–		NA	n	–	–	–	no
Isopropylbenzene	6	/	7	85.7	0.325	m	8.40E-03	n	YES	–	3.87E+01	yes
1,3-Dichlorobenzene	0	/	7	0	–		8.30E-01	n	–	–	–	no

Table HHRA-4
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Exposure Point Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects /	number of	FOD %	EPC [a] (mg/L)	Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)		Is EPC > Screening Level?	EPC / SL (cancer)	EPC / SL (noncancer)	Constituent of Potential Concern (COPC)? [c]
Methyl n-butyl ketone	0 /	7	0	–	NA	n	–	–	–	no
Toluene	14 /	14	100	35.928	1.50E+00	n	YES	–	2.40E+01	yes
4-Methyl-2-pentanone (MIBK)	0 /	7	0	–	1.40E+01	n	–	–	–	no
Methyl tert-butyl ether (MTBE)	9 /	14	64.3	0.6531	1.20E+02	c	no	5.44E-03	–	yes
n-Propylbenzene	13 /	14	92.9	1.176	3.20E-01	n	YES	–	3.68E+00	yes
Styrene (monomer)	0 /	7	0	–	8.90E+00	n	–	–	–	no
Tetrachloroethene	0 /	7	0	–	1.10E-02	c	–	–	–	no
1,1,1,2-Tetrachloroethane	0 /	7	0	–	3.30E-02	c	–	–	–	no
1,1,2,2-Tetrachloroethane	0 /	7	0	–	3.00E-02	c	–	–	–	no
1,1,1-Trichloroethane	0 /	7	0	–	3.10E+00	n	–	–	–	no
1,1,2-Trichloroethane	0 /	7	0	–	4.10E-02	c	–	–	–	no
1,2,3-Trichlorobenzene	0 /	7	0	–	NA	n	–	–	–	no
1,2,3-Trichloropropane	0 /	7	0	–	2.90E-01	c	–	–	–	no
1,2,4-Trichlorobenzene	0 /	7	0	–	3.40E+00	n	–	–	–	no
1,2,4-Trimethylbenzene	14 /	14	100	6.46	2.40E-02	n	YES	–	2.69E+02	yes
1,3,5-Trimethylbenzene	13 /	14	92.9	1.473	2.50E-02	n	YES	–	5.89E+01	yes
Trichloroethylene	0 /	7	0	–	5.00E-03	c	–	–	–	no
Vinyl chloride	0 /	7	0	–	2.50E-03	c	–	–	–	no
m,p-Xylene	14 /	14	100	12.779	2.30E+01	n	no	–	5.56E-01	yes
o-Xylene	14 /	14	100	5.816	3.30E+01	n	no	–	1.76E-01	yes
Polycyclic Aromatic Hydrocarbons										
Naphthalene	10 /	14	71.4	0.5614	1.50E-01	c	YES	3.74E+00	–	yes

Total Maximum / Screening Level Ratios	2210	395
Total Maximum / Screening Level Risk (multiply cancer ratio by 1E-5 and non cancer ratio by 1)	2.E-02	395

Target Organ Max/SL Ratios	
Kidney and Liver	62.7
Brain	NA
Nasal	NA
Eyes	NA
Skin	NA
Lungs	NA
Gastrointestinal Tract and Forestomach	NA
Whole Body	0.7
Blood	NA
Nervous System	24.7
Dental	NA
Red Blood Cells	NA
Glands	38.7
Fetus	0.01
Immune System	NA
Development	0.01
Reproduction	NA
Bone	NA

Table HHRA-4
Selection of Constituents of Potential Concern for the Vapor Intrusion Pathway - Based on Exposure Point Concentrations
Saturated Vadose Zone Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Volatile Constituent	Frequency of Detection (FOD) detects / number of	FOD %	EPC [a] (mg/L)	Saturated Vadose Zone Soil Water Screening Level [b] (mg/L)	Is EPC > Screening Level?	EPC / SL (cancer)	EPC / SL (noncancer)	Constituent of Potential Concern (COPC)? [c]
				Not Available/ Not Reported			332	

Notes:

– = Not applicable.
mg/L = Milligrams per liter.
NA = Not available.
SQL = Sample Quantification Limit.

[a] The exposure point concentrations (EPCs) were upper confidence level on the mean (UCL) or the maximum concentration where the UCL was incalculable. EPCs marked with "m" are based on the maximum detected concentration.

[b] See Appendix E, Table E.2-3 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.

[c] Constituents were selected as COPCs if the screening risk (Exposure Point Concentration/Screening Level) exceeded 1×10^{-5} for cancer effects and/or 1 for non-cancer effects, and any of the sums for target organ ratios also exceeded 1.

Table HHRA-5
Noncarcinogenic Toxicity Values for Inhalation Exposure
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Inhalation RfC (mg/m^3) Chronic	[ref]	Target Site/ Critical Effect	Confidence Level/ Uncertainty Factor
Volatile Organic Compounds				
Acetone	3.1E+01	*A*	NA	NA
Benzene	3.0E-02	*I*	blood	medium/100
Bromodichloromethane	NA		NA	NA
2-Butanone	5.0E+00	*I*	developmental	medium/300
n-Butylbenzene	1.0E+00	*I*	developmental	medium/100
sec-Butylbenzene	4.0E-01	*I*	kidney, adrenal	medium/1000
Chloroform	9.8E-02	*A*	liver, kidney, CNS	low-med/100
1,2-Dichloroethane	2.4E+00	*A*	liver	low/3000
Dichloromethane	1.0E+00	*A*	liver	NA/30
Ethylbenzene	1.0E+00	*I*	developmental	medium/100
Isopropylbenzene	4.0E-01	*I*	kidney, adrenal	medium/1000
Toluene	5.0E+00	*I*	CNS	medium/300
Methyl tert-Butyl Ether (MTBE)	3.0E+00	I	liver, kidney	medium/100
n-Propylbenzene	1.0E+00	Ps	NA	NA
1,2,4-Trimethylbenzene	7.0E-03	P	lung	low/3000
1,3,5-Trimethylbenzene	NA		NA	NA
m,p-Xylene	7.0E-01	C	CNS	NA
o-Xylene	7.0E-01	C	CNS	NA
Xylenes	1.0E-01	I	CNS	medium/300
Polycyclic Aromatic Hydrocarbons				
1-Methylnaphthalene	NA		NA	NA
2-Methylnaphthalene	NA		NA	NA
Naphthalene	3.0E-03	I	nasal	medium/3000

References [ref]:

A	Agency for Toxic Substances Disease Registry (ATDSR) as referenced in USEPA Regional Screening Level Table (USEPA, 2010a).
C	CalEPA, Toxicity Criteria database (CalEPA, 2010).
I	USEPA, Integrated Risk Information System (IRIS; USEPA, 2010).
P	Provisional Peer Reviewed Toxicity Values (PPRTV) by the National Center for Environmental Assessment (NCEA) as referenced in
CNS	Central nervous system.
mg/m^3	Milligrams per cubic meter.
NA	Not available.
RfC	Reference Concentration.
s	Value is based on use of a surrogate compound, as indicated.

Table HHRA-6
Carcinogenic Toxicity Values for Inhalation Exposure
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Inhalation Unit Risk Factor $(mg/m^3)^{-1}$	[ref]	Tumor Site	Weight of Evidence Classification [a]
Volatile Organic Compounds				
Acetone	NA		–	D
Benzene	7.8E-03	I	leukemia	A
Bromodichloromethane	NA		–	B2
2-Butanone	NA		–	D
n-Butylbenzene	NA		–	NA
sec-Butylbenzene	NA		–	NA
Chloroform	2.3E-02	I	liver	B2
1,2-Dichloroethane	2.6E-02	I	circulatory system	B2
Dichloromethane	4.7E-04	I	lung, liver	B2
Ethylbenzene	NA		–	D
Isopropylbenzene	NA		–	D
Toluene	NA		–	D
Methyl tert-Butyl Ether (MTBE)	2.6E-04	C	–	NA
n-Propylbenzene	NA		–	NA
1,2,4-Trimethylbenzene	NA		–	NA
1,3,5-Trimethylbenzene	NA		–	NA
m,p-Xylene	NA		–	D
o-Xylene	NA		–	D
Xylenes	NA		–	D
Polycyclic Aromatic Hydrocarbons				
1-Methylnaphthalene	NA		–	NA
2-Methylnaphthalene	NA		–	NA
Naphthalene	NA		respiratory	C

References [ref]:

C — CalEPA, Toxicity Criteria database (CalEPA, 2010).
I — USEPA, Integrated Risk Information System (IRIS; USEPA, 2010).

– — Not applicable.
$(mg/m^3)^{-1}$ — inverse milligrams per cubic meter.
NA — Not available.

[a] USEPA cancer weight-of-evidence categories are as follows:

Group A: Human Carcinogen (sufficient evidence of carcinogenicity in humans)
Group B: Probable Human Carcinogen
B1 - limited evidence of carcinogenicity in humans
B2 - sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans
Group C: Possible Human Carcinogen (limited evidence of carcinogenicity in animals and inadequate or lack of human data)
Group D: Not Classifiable as to Human Carcinogenicity (inadequate or no evidence)
Group E: Evidence of Noncarcinogenicity for Humans (no evidence of carcinogenicity in adequate studies)

Table HHRA-7
Values Used for Daily Intake Calculations – Potential Current/Hypothetical Future Site Worker Exposure to Indoor Vapors from Soil
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air	CA	Chemical Concentration in Air	mg/m3	TBD	--	Chronic Daily Intake (CDI) (mg/m^3)=
	EF	Exposure Frequency	days/year	225	NMED, 2009a	CA x EF x ED x ET x CF x 1/AT
	ED	Exposure Duration	years	25	NMED, 2009a	
	ET	Exposure Time	hrs/day	8	USEPA, 1991b	
	CF	Conversion Factor	days/hour	0.042	--	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, 1989	

Table HHRA-8
Values Used for Daily Intake Calculations – Potential Current/Hypothetical Future Site Worker Exposure to Groundwater
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air (if pathway complete)	CA	Chemical Concentration in Air	mg/m^3	TBD	--	CDI (mg/m^3)=
	CF3	Conversion Factor	days/hour	0.042	USEPA, 2009	CA x EFx ED x ET x CF3
	EF	Exposure Frequency	days/year	225	NMED, 2009a	x 1/AT
	ED	Exposure Duration	years	25	NMED, 2009a	
	ET	Exposure Time	hrs/day	8	USEPA, 1991a	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, 1989	

Table HHRA-9

Values Used for Daily Intake Calculations – Potential Hypothetical Future Adult Resident Exposure to Indoor Vapors from Soil
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air	CA	Chemical Concentration in Air	mg/m^3	TBD	--	CDI (mg/m^3)=CA x EF x ED x ET x CF x 1/AT
	CF	Conversion Factor	days/hour	0.042	--	
	EF	Exposure Frequency	days/year	350	NMED, 2009a	
	ED	Exposure Duration	years	30	NMED, 2009a	
	ET	Exposure Time	hrs/day	24	Assumed	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	

Table HHRA-10
Values Used for Daily Intake Calculations – Potential Hypothetical Future Adult Resident Exposure to Groundwater
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air (if pathway complete)	CA	Chemical Concentration in Air	mg/m^3	TBD	--	CDI (mg/m^3)=
	CF3	Conversion Factor 3	days/hour	0.042	USEPA, 2009	CA x EF x ED x ET x CF3 x
	EF	Exposure Frequency	days/year	350	NMED, 2009a	1/AT
	ED	Exposure Duration	years	30	NMED, 2009a	
	ET	Exposure Time	hrs/day	24	USEPA, 1991a	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	

Table HHRA-11

Values Used for Daily Intake Calculations – Potential Hypothetical Future Child Resident Exposure to Indoor Vapors from Soil
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of Volatiles Migrating to Indoor Air	CA	Chemical Concentration in Air	mg/m^3	TBD	--	SDI (mg/m^3)=CA x CF x EF x ED x ET x 1/AT
	CF	Conversion Factor	days/hour	0.042	--	
	EF	Exposure Frequency	days/year	350	NMED, 2009a	
	ED	Exposure Duration	years	6	NMED, 2009a	
	ET	Exposure Time	hrs/day	24	NMED, 2009a	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	

Table HHRA-12
Values Used for Daily Intake Calculations – Potential Hypothetical Future Child Resident Exposure to Groundwater
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air (if pathway complete)	CA	Chemical Concentration in Air	mg/m^3	TBD	–	SDI (mg/m^3)=
	CF3	Conversion Factor 3	days/hour	0.042	USEPA, 2009	CA x CF3 x EF x ED x ET x
	EF	Exposure Frequency	days/year	350	NMED, 2009a	1/AT
	ED	Exposure Duration	years	6	NMED, 2009a	
	ET	Exposure Time	hrs/day	24	NMED, 2009a	
	BW	Body Weight	kg	15	NMED, 2009a	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, 1989	

Table HHRA-13
Values Used for Daily Intake Calculations – Potential Current/Hypothetical Future Site Worker Exposure to Groundwater
Medical Aid Building
Solid Waste Management Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	Intake Equation/ Model Name
Inhalation of volatiles migrating to indoor air (if pathway complete)	CA	Chemical Concentration in Air	mg/m^3	TBD	--	CDI (mg/m^3)=
	CF3	Conversion Factor	days/hour	0.042	USEPA, 2009	CA x EFx ED x ET x CF3
	EF	Exposure Frequency	days/year	84	Assumed	x 1/AT
	ED	Exposure Duration	years	25	NMED, 2009a	
	ET	Exposure Time	hrs/day	24	Assumed	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, 1989	

Table HHRA-14
Summary of Constituents of Potential Concern and Exposure Point Concentrations
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent of Potential Concern (COPC)	COPC?			Exposure Point Concentrations [a]			
	Soil (0-10) Construction	Soil All Depths	Saturated Vadose Zone Soil Water	Soil (0-10) (mg/kg)	Soil (All Depths) (mg/kg)	Saturated Vadose Zone Soil Water (mg/L)	
Volatile Organic Compounds							
Acetone	no	no	yes	–	–	8.44E+00	m
Benzene	no	yes	yes	–	1.25E+00	3.03E+01	
Bromodichloromethane	no	no	yes	–	–	1.61E-03	m
2-Butanone	no	no	yes	–	–	6.37E+00	m
n-Butylbenzene	no	yes	yes	–	1.96E+01 m	5.20E-04	m
sec-Butylbenzene	no	yes	yes	–	1.02E+00 m	4.60E-04	m
Chloroform	no	no	yes	–	–	1.76E-03	m
1,2-Dichloroethane	no	no	yes	–	–	7.77E-01	m
Methylene chloride	no	no	yes	–	–	3.12E-01	m
Ethylbenzene	no	yes	yes	–	3.65E+01	5.37E+00	
Isopropylbenzene	no	yes	yes	–	3.09E+01 m	3.25E-01	m
Toluene	no	yes	yes	–	3.99E+01	3.59E+01	
Methyl tert-butyl ether (MTBE)	no	yes	yes	–	1.46E-01 m	6.53E-01	
n-Propylbenzene	no	yes	yes	–	2.38E+01	1.18E+00	
1,2,4-Trimethylbenzene	no	yes	yes	–	9.95E+01	6.46E+00	
1,3,5-Trimethylbenzene	no	yes	yes	–	2.75E+01	1.47E+00	
m,p-Xylene	no	yes	yes	–	9.31E+01	1.28E+01	
o-Xylene	no	yes	yes	–	3.06E+01	5.82E+00	
Xylenes	no	yes	no	–	1.32E+01 m	–	
Polycyclic Aromatic Hydrocarbons							
1-Methylnaphthalene	no	yes	no	–	1.30E+01 m	–	
2-Methylnaphthalene	no	yes	no	–	2.38E+01 m	–	
Naphthalene	no	yes	yes	–	1.99E+01 m	5.61E-01	

Notes:
– = Not detected/ not analyzed/ not applicable.
CASN = Chemical abstracts registry number.
mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.

[a] The exposure point concentration (EPC) was the upper confidence level on the mean (UCL) or the maximum concentration where the UCL was incalculable. EPCs marked with "m" are based on the maximum detected concentration.

Table HHRA-15

Estimates of Vapor Concentrations in Indoor Air Migrating from Total Soil and Saturated Vadose Zone Soil Water

Solid Waste Managment Unit 197 (SWMU 197)

White Sands Missile Range, New Mexico

Constituent	Exposure Point Concentration in Soil (EPCs) [a] (mg/kg)		Exposure Point Concentration in Indoor Air due to Soil (EPCair_s) [b] (µg/m³)	Exposure Point Concentration in Saturated Vadose Zone Soil Water (EPCgw) [a] (mg/L)		Exposure Point Concentration in Indoor Air due to Saturated Vadose Zone Soil Water (EPCair_gw) [b] (µg/m³)
Volatile Organic Compounds						
Acetone	–		–	8.44E+00	m	6.28E-01
Benzene	1.25E+00		2.99E+01	3.03E+01		1.94E+02
Bromodichloromethane	–		–	1.61E-03	m	1.59E-03
2-Butanone	–		–	6.37E+00	m	5.55E-01
n-Butylbenzene	1.96E+01	m	2.61E+01	5.20E-04	m	4.98E-03
sec-Butylbenzene	1.02E+00	m	8.53E-02	4.60E-04	m	6.48E-05
Chloroform	–		–	1.76E-03	m	8.45E-03
1,2-Dichloroethane	–		–	7.77E-01	m	9.94E-01
Dichloromethane	–		–	3.12E-01	m	9.18E-01
Ethylbenzene	3.65E+01		4.20E+02	5.37E+00		4.00E+01
Isopropylbenzene	3.09E+01	m	4.59E+02	3.25E-01	m	2.85E+02
Toluene	3.99E+01		6.47E+02	3.59E+01		2.59E+02
Methyl tert-Butyl Ether (MTBE)	1.46E-01	m	6.23E-01	6.53E-01		5.78E-01
n-Propylbenzene	2.38E+01		2.47E+02	1.18E+00		9.71E+00
1,2,4-Trimethylbenzene	9.95E+01		2.76E+02	6.46E+00		3.08E+01
1,3,5-Trimethylbenzene	2.75E+01		1.17E+01	1.47E+00		6.70E+00
m,p-Xylene	9.31E+01		9.13E+02	1.28E+01		8.47E+01
o-Xylene	3.06E+01		2.32E+02	5.82E+00		3.11E+01
Xylenes	1.32E+01	m	2.20E+02	–		–
Polycyclic Aromatic Hydrocarbons						
1-Methylnaphthalene	1.30E+01	m	1.23E+00	–		–
2-Methylnaphthalene	2.38E+01	m	2.25E+00	–		–
Naphthalene	1.99E+01	m	2.85E+00	5.61E-01		2.29E-01

References:

USEPA. 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. Office of Solid Waste and Emergency Response (OSWER). Washington, D.C. November.

USEPA. 2003. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings. Office of Emergency and Remedial Response. June.

USEPA. 2004a. Spreadsheet for the Johnson and Ettinger Model - Soil Screen. Version 3.1. Last modified 02/2004.

USEPA. 2004b. Spreadsheet for the Johnson and Ettinger Model - Groundwater Screen. Version 3.1. Last modified 02/2004.

Notes:

–	Not applicable.
µg/m³	Micrograms per cubic meter.
mg/kg	Milligrams per kilogram.
mg/L	Milligrams per liter.
m	Maximum.

[a] EPCs are presented in table Table HHRA-15.

[b] Concentrations of vapors in indoor air were estimated using USEPA's Spreadsheet for the Johnson and Ettinger Vapor Intrusion Model (USEPA, 2004a,b), as directed by the User's Guide (USEPA, 2003e), consistent with methods in the vapor intrusion guidance (USEPA, 2002a).

Table HHRA-16

Estimates of Vapor Concentrations in Indoor Air Migrating from Total Soil and Saturated Vadose Zone Soil Water

Medical Aid Building

Solid Waste Managment Unit 197 (SWMU 197)

White Sands Missile Range, New Mexico

Constituent	Exposure Point Concentration in Saturated Vadose Zone Soil Water (EPCgw) [a] (mg/L)		Exposure Point Concentration in Indoor Air due to Saturated Vadose Zone Soil Water (EPCair_gw) [b] (µg/m³)
Volatile Organic Compounds			
Acetone	8.44E+00	m	3.64E-01
Benzene	3.03E+01		1.33E+02
Bromodichloromethane	1.61E-03	m	1.25E-03
2-Butanone	6.37E+00	m	3.43E-01
n-Butylbenzene	5.20E-04	m	3.67E-03
sec-Butylbenzene	4.60E-04	m	4.35E-05
Chloroform	1.76E-03	m	5.62E-03
1,2-Dichloroethane	7.77E-01	m	6.51E-01
Dichloromethane	3.12E-01	m	6.10E-01
Ethylbenzene	5.37E+00		2.82E+01
Isopropylbenzene	3.25E-01	m	2.06E+02
Toluene	3.59E+01		1.78E+02
Methyl tert-Butyl Ether (MTBE)	6.53E-01		3.76E-01
n-Propylbenzene	1.18E+00		7.10E+00
1,2,4-Trimethylbenzene	6.46E+00		2.24E+01
1,3,5-Trimethylbenzene	1.47E+00		4.88E+00
m,p-Xylene	1.28E+01		6.04E+01
o-Xylene	5.82E+00		2.13E+01
Polycyclic Aromatic Hydrocarbons			
Naphthalene	5.61E-01		1.61E-01

References:

USEPA. 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils. Office of Solid Waste and Emergency Response (OSWER). Washington, D.C. November.

USEPA. 2003. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings. Office of Emergency and Remedia

USEPA. 2004a. Spreadsheet for the Johnson and Ettinger Model - Soil Screen. Version 3.1. Last modified 02/2004.

USEPA. 2004b. Spreadsheet for the Johnson and Ettinger Model - Groundwater Screen. Version 3.1. Last modified 02/2C

Notes:

---	Not applicable.
µg/m³	Micrograms per cubic meter.
mg/kg	Milligrams per kilogram.
mg/L	Milligrams per liter.
m	Maximum.

[a] EPCs are presented in table Table HHRA-6.

[b] Concentrations of vapors in indoor air were estimated using USEPA's Spreadsheet for the Johnson and E Intrusion Model (USEPA, 2004a,b), as directed by the User's Guide (USEPA, 2003e), consistent with methods in the vapor intrusion guidance (USEPA, 2002a).

Table HHRA-17
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Total Soil
Future Scenario
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

Chemical CAS No. (numbers only, no dashes)	Initial Soil Concentration C_R (µg/kg)	Chemical
71432	1.25E+03	Benzene
104518	1.96E+04	n-Butylbenzene
135988	1.02E+03	sec-Butylbenzene
100414	3.65E+04	Ethylbenzene
98828	3.09E+04	Cumene
108883	3.99E+04	Toluene
1634044	1.46E+02	MTBE
103651	2.38E+04	n-Propylbenzene
95636	9.95E+04	1,2,4-Trimethylbenzene
108678	2.75E+04	1,3,5-Trimethylbenzene
108383	9.31E+04	m-Xylene
95476	3.06E+04	o-Xylene
1330207	1.32E+04	Xylenes (total)
90120	1.30E+04	1-Methylnaphthalene
91576	2.38E+04	2-Methylnaphthalene
91203	1.99E+04	Naphthalene

ENTER Average soil temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to top of contamination, L_t (cm)	ENTER Depth below grade to bottom of contamination, (enter value of 0 if value is unknown) L_b (cm)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
				Totals must add up to value of L_t (cell G45)					
16.7	15	625	0	1310			SIL		

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-filled porosity, θ_w^A (cm^3/cm^3)	ENTER Stratum A soil organic carbon fraction, f_{oc}^A (unitless)	ENTER Stratum B SCS soil type (Lookup Soil Parameters)	ENTER Stratum B soil dry bulk density, ρ_b^B (g/cm^3)	ENTER Stratum B soil total porosity, n^B (unitless)	ENTER Stratum B soil water-filled porosity, θ_w^B (cm^3/cm^3)	ENTER Stratum B soil organic carbon fraction, f_{oc}^B (unitless)
SIL	1.55	0.44	0.26	0.0015					

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate Q_{soil} (L/m)
10	40	1000	1000	244	0.1	0.25	

Table HHRA-18
Intercalculations
Estimating Vapor Concentrations in Indoor Air Migrating from Total Soil
Future Scenario
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

Constituent	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Source vapor conc., C_{source} (µg/m^3)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
Benzene	8,053	3.75E-03	1.58E-01	1.77E-04	1.51E-03	7.11E-04	7.18E+05	1.65E+00	1.51E-03	7.57E+11	4.17E-05	2.99E+01
n-Butylbenzene	11,763	7.43E-03	3.13E-01	1.77E-04	9.77E-04	4.60E-04	6.25E+05	1.65E+00	9.77E-04	2.26E+18	4.17E-05	2.61E+01
sec-Butylbenzene	107,393	7.72E-05	3.24E-03	1.77E-04	1.12E-03	5.28E-04	2.05E+03	1.65E+00	1.12E-03	9.86E+15	4.17E-05	8.53E-02
Ethylbenzene	10,078	4.83E-03	2.03E-01	1.77E-04	1.29E-03	6.05E-04	1.01E+07	1.65E+00	1.29E-03	8.85E+13	4.17E-05	4.20E+02
Cumene	12,550	7.96E-03	3.35E-01	1.77E-04	1.11E-03	5.24E-04	1.10E+07	1.65E+00	1.11E-03	1.27E+16	4.17E-05	4.59E+02
Toluene	9,082	4.27E-03	1.80E-01	1.77E-04	1.49E-03	7.02E-04	1.55E+07	1.65E+00	1.49E-03	1.05E+12	4.17E-05	6.47E+02
MTBE	7,208	4.40E-04	1.85E-02	1.77E-04	1.78E-03	8.41E-04	1.49E+04	1.65E+00	1.78E-03	1.11E+10	4.17E-05	6.23E-01
n-Propylbenzene	11,281	6.18E-03	2.60E-01	1.77E-04	1.03E-03	4.85E-04	5.93E+06	1.65E+00	1.03E-03	2.54E+17	4.17E-05	2.47E+02
1,2,4-Trimethylbenzene	11,608	3.51E-03	1.47E-01	1.77E-04	1.04E-03	4.90E-04	6.63E+06	1.65E+00	1.04E-03	1.73E+17	4.17E-05	2.76E+02
1,3,5-Trimethylbenzene	11,591	3.35E-03	1.41E-01	1.77E-04	1.03E-03	4.87E-04	2.82E+05	1.65E+00	1.03E-03	2.22E+17	4.17E-05	1.17E+01
m-Xylene	10,177	4.48E-03	1.88E-01	1.77E-04	1.20E-03	5.65E-04	2.19E+07	1.65E+00	1.20E-03	8.69E+14	4.17E-05	9.13E+02
o-Xylene	10,328	3.14E-03	1.32E-01	1.77E-04	1.49E-03	7.03E-04	5.56E+06	1.65E+00	1.49E-03	1.02E+12	4.17E-05	2.32E+02
Xylenes (total)	10,158	4.06E-03	1.71E-01	1.77E-04	1.22E-03	5.77E-04	5.27E+06	1.65E+00	1.22E-03	4.34E+14	4.17E-05	2.20E+02
1-Methylnaphthalene	16,153	2.37E-04	9.95E-03	1.77E-04	9.38E-04	4.42E-04	2.95E+04	1.65E+00	9.38E-04	1.27E+19	4.17E-05	1.23E+00
2-Methylnaphthalene	16,153	2.37E-04	9.95E-03	1.77E-04	9.38E-04	4.42E-04	5.40E+04	1.65E+00	9.38E-04	1.27E+19	4.17E-05	2.25E+00
Naphthalene	12,844	2.59E-04	1.09E-02	1.77E-04	1.05E-03	4.94E-04	6.84E+04	1.65E+00	1.05E-03	1.21E+17	4.17E-05	2.85E+00

Table HHRA-19
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

Chemical CAS No. (numbers only, no dashes)	Initial Groundwater Concentration C_W (µg/L)	Chemical
67641	8.4E+03	Acetone
71432	3.0E+04	Benzene
75274	1.6E+00	Bromodichloromethane
78933	6.4E+03	2-Butanone
104518	5.2E-01	n-Butylbenzene
135988	4.6E-01	sec-Butylbenzene
67663	1.8E+00	Chloroform
107062	7.8E+02	1,2-Dichloroethane
75092	3.1E+02	Methylene chloride
100414	5.4E+03	Ethylbenzene
98828	3.3E+02	Cumene
108883	3.6E+04	Toluene
1634044	6.5E+02	MTBE
103651	1.2E+03	n-Propylbenzene
95636	6.5E+03	1,2,4-Trimethylbenzene
108678	1.5E+03	1,3,5-Trimethylbenzene
108383	1.3E+04	m-Xylene
95476	5.8E+03	o-Xylene
91203	5.6E+02	Naphthalene

Table HHRA-19
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of L_{WT} (cell G28)							
16.7	15	821	821	0	0	A	SIL	SIL		

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-fillec porosity, θ_w^A (cm^3/cm^3)	(Lookup Soil Parameters)			(Lookup Soil Parameters)
SIL	1.55	0.440	0.26				

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)
10	40	1000	1000	244	0.1	0.25

Table HHRA-20
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario
Solid Waste Management Unit 197 (SWMU 197)
High Energy Laser Systems Test Facility (HELSTF), U.S. Army White Sand Missile Range
White Sand Missile Range, New Mexico

Chemical Name	Enthalpy of vaporization at ave. gw temp $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. gw temp H_{TS} (atm-m^3/mol)	Henry's law constant at ave. gw temp H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Source vapor conc., C_{source} (µg/m^3)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
Acetone	7,476	2.70E-05	1.13E-03	1.77E-04	2.71E-03	1.78E-03	2.59E-03	9.57E+03	1.65E+00	2.71E-03	4.20E+06	6.56E-05	6.28E-01
Benzene	8,053	3.75E-03	1.58E-01	1.77E-04	1.51E-03	1.67E-04	8.97E-04	4.78E+06	1.65E+00	1.51E-03	7.57E+11	4.06E-05	1.94E+02
Bromodichloromethane	8,599	1.05E-03	4.43E-02	1.77E-04	5.24E-04	9.02E-05	3.72E-04	7.13E+01	1.65E+00	5.24E-04	1.69E+34	2.23E-05	1.59E-03
2-Butanone	8,336	3.73E-05	1.57E-03	1.77E-04	1.75E-03	1.11E-03	1.67E-03	9.98E+03	1.65E+00	1.75E-03	1.84E+10	5.56E-05	5.55E-01
n-Butylbenzene	11,763	7.43E-03	3.13E-01	1.77E-04	9.77E-04	1.06E-04	5.76E-04	1.63E+02	1.65E+00	9.77E-04	2.26E+18	3.06E-05	4.98E-03
sec-Butylbenzene	107,393	7.72E-05	3.24E-03	1.77E-04	1.12E-03	4.89E-04	1.01E-03	1.49E+00	1.65E+00	1.12E-03	9.86E+15	4.34E-05	6.48E-05
Chloroform	7,485	2.55E-03	1.07E-01	1.77E-04	1.78E-03	2.00E-04	1.07E-03	1.89E+02	1.65E+00	1.78E-03	1.11E+10	4.48E-05	8.45E-03
1,2-Dichloroethane	8,449	6.49E-04	2.73E-02	1.77E-04	1.80E-03	2.42E-04	1.16E-03	2.12E+04	1.65E+00	1.80E-03	9.06E+09	4.69E-05	9.94E-01
Methylene chloride	6,963	1.56E-03	6.56E-02	1.77E-04	1.74E-03	2.08E-04	1.07E-03	2.05E+04	1.65E+00	1.74E-03	2.05E+10	4.49E-05	9.18E-01
Ethylbenzene	10,078	4.83E-03	2.03E-01	1.77E-04	1.29E-03	1.40E-04	7.59E-04	1.09E+06	1.65E+00	1.29E-03	8.85E+13	3.67E-05	4.00E+01
Cumene	12,550	6.31E-01	2.65E+01	1.77E-04	1.11E-03	1.16E-04	6.44E-04	8.62E+06	1.65E+00	1.11E-03	1.32E+16	3.30E-05	2.85E+02
Toluene	9,082	4.27E-03	1.80E-01	1.77E-04	1.49E-03	1.63E-04	8.82E-04	6.45E+06	1.65E+00	1.49E-03	1.05E+12	4.02E-05	2.59E+02
MTBE	7,208	4.40E-04	1.85E-02	1.77E-04	1.78E-03	2.71E-04	1.21E-03	1.21E+04	1.65E+00	1.78E-03	1.11E+10	4.78E-05	5.78E-01
n-Propylbenzene	11,281	6.18E-03	2.60E-01	1.77E-04	1.03E-03	1.12E-04	6.08E-04	3.05E+05	1.65E+00	1.03E-03	2.54E+17	3.18E-05	9.71E+00
1,2,4-Trimethylbenzene	11,608	3.51E-03	1.47E-01	1.77E-04	1.04E-03	1.16E-04	6.22E-04	9.52E+05	1.65E+00	1.04E-03	1.73E+17	3.23E-05	3.08E+01
1,3,5-Trimethylbenzene	11,591	3.35E-03	1.41E-01	1.77E-04	1.03E-03	1.17E-04	6.21E-04	2.08E+05	1.65E+00	1.03E-03	2.22E+17	3.23E-05	6.70E+00
m-Xylene	10,177	4.48E-03	1.88E-01	1.77E-04	1.20E-03	1.31E-04	7.11E-04	2.41E+06	1.65E+00	1.20E-03	8.69E+14	3.52E-05	8.47E+01
o-Xylene	10,328	3.14E-03	1.32E-01	1.77E-04	1.49E-03	1.67E-04	8.93E-04	7.68E+05	1.65E+00	1.49E-03	1.02E+12	4.05E-05	3.11E+01
Naphthalene	12,844	2.59E-04	1.09E-02	1.77E-04	1.05E-03	2.12E-04	7.86E-04	6.11E+03	1.65E+00	1.05E-03	1.21E+17	3.75E-05	2.29E-01

Table HHRA-21
Risk and Hazard Calculations for Hypothetical Future Commercial/Industrial Worker Receptor from Exposure to Vapor Concentrations in Indoor Air Migrating from Total Soil
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Scenario Timeframe: Future
Receptor Population: Site Worker
Receptor Age: Adult

Constituent	EPCair [a] ($\mu g/m^3$)		CANCER RISK URF $(mg/m^3)^{-1}$	CANCER RISK Calculated Risk	Percent Total ELCR	NON-CANCER HAZARD RfC (mg/m^3)	NON-CANCER HAZARD Calculated Hazard	Percent Total HI
				ELCRi			HQi	
Volatile Organic Compounds								
Benzene	2.99E+01		7.80E-03	1.7E-05	100%	3.0E-02	2E-01	2%
n-Butylbenzene	2.61E+01	m	NA	NA	–	1.0E+00	5E-03	<1%
sec-Butylbenzene	8.53E-02	m	NA	NA	–	4.0E-01	4E-05	<1%
Ethylbenzene	4.20E+02		NA	NA	–	1.0E+00	9E-02	<1%
Isopropylbenzene	4.59E+02	m	NA	NA	–	4.0E-01	2E-01	2%
Toluene	6.47E+02		NA	NA	–	5.0E+00	3E-02	<1%
Methyl tert-Butyl Ether (MTBE)	6.23E-01	m	2.60E-04	1.2E-08	<1%	3.0E+00	4E-05	<1%
n-Propylbenzene	2.47E+02		NA	NA	–	1.0E+00	5E-02	<1%
1,2,4-Trimethylbenzene	2.76E+02		NA	NA	–	7.0E-03	8E+00	84%
1,3,5-Trimethylbenzene	1.17E+01		NA	NA	–	NA	NA	–
m,p-Xylene	9.13E+02		NA	NA	–	7.0E-01	3E-01	3%
o-Xylene	2.32E+02		NA	NA	–	7.0E-01	7E-02	<1%
Xylenes	2.20E+02	m	NA	NA	–	1.0E-01	5E-01	5%
Polycyclic Aromatic Hydrocarbons								
1-Methylnaphthalene	1.23E+00	m	NA	NA	–	NA	NA	–
2-Methylnaphthalene	2.25E+00	m	NA	NA	–	NA	NA	–
Naphthalene	2.85E+00	m	NA	NA	–	3.0E-03	2E-01	2%
			Total ELCR	2E-05	NA	Total HI **	10	100%

** HI Segregated by Target Site/Critical Effect:				
CNS - Central nervous system	HI (liver, kidney) =	0.2	HI (gastrointestinal tract) =	NA
NA - Not available	HI (CNS, whole body, immune system) =	0.8	HI (nasal, lung) =	8
NR - None reported	HI (blood) =	0.2	HI (eyes, nails, hair, skin) =	NA
	HI (fetus, developmental) =	0.09	HI (NA, NR) =	0.1

[a] From Table HHRA-15.

—	Not applicable.	m	EPC based on maximum.
URF	Unit risk factor	mg/m^3	Milligrams per cubic meter.
ELCR	Excess lifetime cancer risk.	$\mu g/m^3$	Micrograms per cubic meter.
EPCair	Calculated exposure point concentration in indoor air.	NA	Not available.
HI	Hazard index (sum of the HQs).	RfC	Reference concentration.
HQ	Hazard quotient for non-cancer effects.		

Equations:

$ELCRi = (EPCair \times 0.001 \times 8 \times 0.042 \times 225 \times 25 \times URF) / (25{,}550)$

$HQi = (EPCair \times 0.001 \times 8 \times 0.042 \times 225 \times 25) / (9{,}125 \times RfC)$

Table HHRA-22
Risk and Hazard Calculations for Hypothetical Future Commercial/Industrial Worker Receptor from Exposure to Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Soil Water
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Scenario Timeframe: Future
Receptor Population: Site Worker
Receptor Age: Adult

Constituent	EPCair [a] (µg/m³)		CANCER RISK URF (mg/m³)⁻¹	CANCER RISK Calculated Risk	Percent Total ELCR	NON-CANCER HAZARD RfC (mg/m³)	NON-CANCER HAZARD Calculated Hazard	Percent Total HI
				ELCRi			HQi	
Volatile Organic Compounds								
Acetone	6.28E-01	m	NA	NA	–	3.1E+01	4E-06	<1%
Benzene	1.94E+02		7.80E-03	1.1E-04	98%	3.0E-02	1E+00	54%
Bromodichloromethane	1.59E-03	m	NA	NA	–	NA	NA	–
2-Butanone	5.55E-01	m	NA	NA	–	5.0E+00	2E-05	<1%
n-Butylbenzene	4.98E-03	m	NA	NA	–	1.0E+00	1E-06	<1%
sec-Butylbenzene	6.48E-05	m	NA	NA	–	4.0E-01	3E-08	<1%
Chloroform	8.45E-03	m	2.30E-02	1.4E-08	<1%	9.8E-02	2E-05	<1%
1,2-Dichloroethane	9.94E-01	m	2.60E-02	1.9E-06	2%	2.4E+00	9E-05	<1%
Dichloromethane	9.18E-01	m	4.70E-04	3.2E-08	<1%	1.0E+00	2E-04	<1%
Ethylbenzene	4.00E+01		NA	NA	–	1.0E+00	8E-03	<1%
Isopropylbenzene	2.85E+02	m	NA	NA	–	4.0E-01	1E-01	6%
Toluene	2.59E+02		NA	NA	–	5.0E+00	1E-02	<1%
Methyl tert-Butyl Ether (MTBE)	5.78E-01		2.60E-04	1.1E-08	<1%	3.0E+00	4E-05	<1%
n-Propylbenzene	9.71E+00		NA	NA	–	1.0E+00	2E-03	<1%
1,2,4-Trimethylbenzene	3.08E+01		NA	NA	–	7.0E-03	9E-01	37%
1,3,5-Trimethylbenzene	6.70E+00		NA	NA	–	NA	NA	–
m,p-Xylene	8.47E+01		NA	NA	–	7.0E-01	2E-02	1%
o-Xylene	3.11E+01		NA	NA	–	7.0E-01	9E-03	<1%
Naphthalene	2.29E-01		NA	NA	–	3.0E-03	2E-02	<1%
			Total ELCR	1E-04	100%	Total HI **	2	100%

** HI Segregated by Target Site/Critical Effect:	HI (liver, kidney) =	0.1	HI (gastrointestinal tract) = NA
CNS - Central nervous system	HI (CNS, whole body, immune system) =	0.04	HI (nasal, lung) = 0.9
NA - Not available	HI (blood) =	1	HI (eyes, nails, hair, skin) = NA
NR - None reported	HI (fetus, developmental) =	0.008	HI (NA, NR) = 0.002

[a] From Table HHRA-15.

—	Not applicable.	m	EPC based on maximum.
URF	Unit risk factor	mg/m³	Milligrams per cubic meter.
ELCR	Excess lifetime cancer risk.	µg/m³	Micrograms per cubic meter.
EPCair	Calculated exposure point concentration in indoor air.	NA	Not available.
HI	Hazard index (sum of the HQs).	RfC	Reference concentration.
HQ	Hazard quotient for non-cancer effects.		

Equations:

ELCRi = (EPCair × 0.001 x 8 × 0.042 × 225 × 25 × URF) / (25,550)

HQi = (EPCair × 0.001 x 8 × 0.042 × 225 × 25) / (9,125 × RfC)

Table HHRA-23
Risk and Hazard Calculations for Hypothetical Future Resident Receptor (Adult and Child) from Exposure to Vapor Concentrations in Indoor Air Migrating from Total Soil
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult and Child

Constituent	EPCair [a] ($\mu g/m^3$)		CANCER RISK URF $(mg/m^3)^{-1}$	CANCER RISK Calculated Risk	Percent Total ELCR	NON-CANCER HAZARD RfC (mg/m^3)	NON-CANCER HAZARD Calculated Hazard	Percent Total HI
				ELCRi			HQi	
Volatile Organic Compounds								
Benzene	2.99E+01		7.80E-03	1E-04	100%	3.0E-02	1E+00	2%
n-Butylbenzene	2.61E+01	m	NA	NA	--	1.0E+00	2E-02	<1%
sec-Butylbenzene	8.53E-02	m	NA	NA	--	4.0E-01	2E-04	<1%
Ethylbenzene	4.20E+02		NA	NA	--	1.0E+00	4E-01	<1%
Isopropylbenzene	4.59E+02	m	NA	NA	--	4.0E-01	1E+00	2%
Toluene	6.47E+02		NA	NA	--	5.0E+00	1E-01	<1%
Methyl tert-Butyl Ether (MTBE)	6.23E-01	m	2.60E-04	7E-08	<1%	3.0E+00	2E-04	<1%
n-Propylbenzene	2.47E+02		NA	NA	--	1.0E+00	2E-01	<1%
1,2,4-Trimethylbenzene	2.76E+02		NA	NA	--	7.0E-03	4E+01	84%
1,3,5-Trimethylbenzene	1.17E+01		NA	NA	--	NA	NA	--
m,p-Xylene	9.13E+02		NA	NA	--	7.0E-01	1E+00	3%
o-Xylene	2.32E+02		NA	NA	--	7.0E-01	3E-01	<1%
Xylenes	2.20E+02	m	NA	NA	--	1.0E-01	2E+00	5%
Polycyclic Aromatic Hydrocarbons					--			--
1-Methylnaphthalene	1.23E+00	m	NA	NA	--	NA	NA	--
2-Methylnaphthalene	2.25E+00	m	NA	NA	--	NA	NA	--
Naphthalene	2.85E+00	m	NA	NA	--	3.0E-03	9E-01	2%
			Total ELCR	1E-04	100%	Total HI **	50	100%

** HI Segregated by Target Site/Critical Effect:				
CNS - Central nervous system	HI (liver, kidney) =	1	HI (gastrointestinal tract) =	NA
NA - Not available	HI (CNS, whole body, immune system) =	4	HI (nasal, lung) =	39
NR - None reported	HI (blood) =	1	HI (eyes, nails, hair, skin) =	NA
	HI (fetus, developmental) =	0.4	HI (NA, NR) =	0.2

[a] From Table HHRA-15.

—	Not applicable.	m	EPC based on maximum.
URF	Unit risk factor	mg/m^3	Milligrams per cubic meter.
ELCR	Excess lifetime cancer risk.	$\mu g/m^3$	Micrograms per cubic meter.
EPCair	Calculated exposure point concentration in indoor air.	NA	Not available.
HI	Hazard index (sum of the HQs).	RfC	Reference concentration.
HQ	Hazard quotient for non-cancer effects.		

Equations:

ELCRi = (EPCair × 0.001 x 24 × 0.042 × 350 × 30 × URF) / (25,550)

HQi = (EPCair × 0.001 x 24 × 0.042 × 350 × 6) / (2,190 × RfC)

Table HHRA-24
Risk and Hazard Calculations for Hypothetical Future Resident Receptor (Adult and Child) from Exposure to Vapors in Indoor Air Migrating from Total Soil
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Constituent	EPCair [a] ($\mu g/m^3$)		CANCER RISK URF $(mg/m^3)^{-1}$	CANCER RISK Calculated Risk	Percent Total ELCR	NON-CANCER HAZARD RfC (mg/m^3)	NON-CANCER HAZARD Calculated Hazard	Percent Total HI
				ELCRi			HQi	
Volatile Organic Compounds								
Acetone	6.28E-01	m	NA	NA	–	3.1E+01	2E-05	<1%
Benzene	1.94E+02		7.80E-03	6E-04	98%	3.0E-02	6E+00	54%
Bromodichloromethane	1.59E-03	m	NA	NA	–	NA	NA	–
2-Butanone	5.55E-01	m	NA	NA	–	5.0E+00	1E-04	<1%
n-Butylbenzene	4.98E-03	m	NA	NA	–	1.0E+00	5E-06	<1%
sec-Butylbenzene	6.48E-05	m	NA	NA	–	4.0E-01	2E-07	<1%
Chloroform	8.45E-03	m	2.30E-02	8E-08	<1%	9.8E-02	8E-05	<1%
1,2-Dichloroethane	9.94E-01	m	2.60E-02	1E-05	2%	2.4E+00	4E-04	<1%
Dichloromethane	9.18E-01	m	4.70E-04	2E-07	<1%	1.0E+00	9E-04	<1%
Ethylbenzene	4.00E+01		NA	NA	–	1.0E+00	4E-02	<1%
Isopropylbenzene	2.85E+02	m	NA	NA	–	4.0E-01	7E-01	6%
Toluene	2.59E+02		NA	NA	–	5.0E+00	5E-02	<1%
Methyl tert-Butyl Ether (MTBE)	5.78E-01		2.60E-04	6E-08	<1%	3.0E+00	2E-04	<1%
n-Propylbenzene	9.71E+00		NA	NA	–	1.0E+00	9E-03	<1%
1,2,4-Trimethylbenzene	3.08E+01		NA	NA	–	7.0E-03	4E+00	37%
1,3,5-Trimethylbenzene	6.70E+00		NA	NA	–	NA	NA	–
m,p-Xylene	8.47E+01		NA	NA	–	7.0E-01	1E-01	1%
o-Xylene	3.11E+01		NA	NA	–	7.0E-01	4E-02	<1%
Naphthalene	2.29E-01		NA	NA	–	3.0E-03	7E-02	<1%
			Total ELCR	6E-04	100%	Total HI **	10	100%

** HI Segregated by Target Site/Critical Effect:	HI (liver, kidney) =	0.7	HI (gastrointestinal tract) = NA
CNS - Central nervous system	HI (CNS, whole body, immune system) =	0.2	HI (nasal, lung) = 4
NA - Not available	HI (blood) =	6	HI (eyes, nails, hair, skin) = NA
NR - None reported	HI (fetus, developmental) =	0.04	HI (NA, NR) = 0.009

[a] From Table HHRA-15.

—	Not applicable.	m	EPC based on maximum.
URF	Unit risk factor	mg/m^3	Milligrams per cubic meter.
ELCR	Excess lifetime cancer risk.	$\mu g/m^3$	Micrograms per cubic meter.
EPCair	Calculated exposure point concentration in indoor air.	NA	Not available.
HI	Hazard index (sum of the HQs).	RfC	Reference concentration.
HQ	Hazard quotient for non-cancer effects.		

Equations:

ELCRi = (EPCair × 0.001 x 24 × 0.042 × 350 × 30 × URF) / (25,550)

HQi = (EPCair × 0.001 x 24 × 0.042 × 350 × 6) / (2,190 × RfC)

Table HHRA-25
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario - Medical Aid Building
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

Chemical CAS No. (numbers only, no dashes)	Initial Groundwater Concentration C_W (µg/L)	Chemical
67641	8.4E+03	Acetone
71432	3.0E+04	Benzene
75274	1.6E+00	Bromodichloromethane
78933	6.4E+03	2-Butanone
104518	5.2E-01	n-Butylbenzene
135988	4.6E-01	sec-Butylbenzene
67663	1.8E+00	Chloroform
107062	7.8E+02	1,2-Dichloroethane
75092	3.1E+02	Methylene chloride
100414	5.4E+03	Ethylbenzene
98828	3.3E+02	Cumene
108883	3.6E+04	Toluene
1634044	6.5E+02	MTBE
103651	1.2E+03	n-Propylbenzene
95636	6.5E+03	1,2,4-Trimethylbenzene
108678	1.5E+03	1,3,5-Trimethylbenzene
108383	1.3E+04	m-Xylene
95476	5.8E+03	o-Xylene
91203	5.6E+02	Naphthalene

Table HHRA-25
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario - Medical Aid Building
Solid Waste Management Unit 197 (SWMU 197)
White Sand Missile Range, New Mexico

ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER Thickness of soil stratum A, h_A (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) h_B (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) h_C (cm)	ENTER Soil stratum directly above water table, (Enter A, B, or C)	ENTER SCS soil type directly above water table	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, k_v (cm^2)
			Totals must add up to value of L_{WT} (cell G28)							
16.7	15	821	821	0	0	A	SIL	SIL		

ENTER Stratum A SCS soil type (Lookup Soil Parameters)	ENTER Stratum A soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Stratum A soil total porosity, n^A (unitless)	ENTER Stratum A soil water-fillec porosity, θ_w^A (cm^3/cm^3)	(Lookup Soil Parameters)			(Lookup Soil Parameters)
SIL	1.55	0.440	0.26				

ENTER Enclosed space floor thickness, L_{crack} (cm)	ENTER Soil-bldg. pressure differential, ΔP ($g/cm\text{-}s^2$)	ENTER Enclosed space floor length, L_B (cm)	ENTER Enclosed space floor width, W_B (cm)	ENTER Enclosed space height, H_B (cm)	ENTER Floor-wall seam crack width, w (cm)	ENTER Indoor air exchange rate, ER (1/h)
10	40	2682	1676	244	0.1	0.25

Table HHRA-26
Summary of Input Parameters
Estimating Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Zone Soil Water
Future Scenario - Medical Aid Building
Solid Waste Management Unit 197 (SWMU 197)
High Energy Laser Systems Test Facility (HELSTF), U.S. Army White Sand Missile Range
White Sand Missile Range, New Mexico

Chemical Name	Enthalpy of vaporization at ave. gw temp $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. gw temp H_{TS} (atm-m^3/mol)	Henry's law constant at ave. gw temp H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Stratum A effective diffusion coefficient, D^{eff}_A (cm^2/s)	Capillary zone effective diffusion coefficient, D^{eff}_{cz} (cm^2/s)	Total overall effective diffusion coefficient, D^{eff}_T (cm^2/s)	Source vapor conc., C_{source} (µg/m^3)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Exponent of equivalent foundation Peclet number, exp(Pe^f) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m^3)
Acetone	7,476	2.70E-05	1.13E-03	1.77E-04	2.71E-03	1.78E-03	2.59E-03	9.57E+03	3.60E+00	2.71E-03	4.20E+06	3.80E-05	3.64E-01
Benzene	8,053	3.75E-03	1.58E-01	1.77E-04	1.51E-03	1.67E-04	8.97E-04	4.78E+06	3.60E+00	1.51E-03	7.57E+11	2.78E-05	1.33E+02
Bromodichloromethane	8,599	1.05E-03	4.43E-02	1.77E-04	5.24E-04	9.02E-05	3.72E-04	7.13E+01	3.60E+00	5.24E-04	1.69E+34	1.76E-05	1.25E-03
2-Butanone	8,336	3.73E-05	1.57E-03	1.77E-04	1.75E-03	1.11E-03	1.67E-03	9.98E+03	3.60E+00	1.75E-03	1.84E+10	3.43E-05	3.43E-01
n-Butylbenzene	11,763	7.43E-03	3.13E-01	1.77E-04	9.77E-04	1.06E-04	5.76E-04	1.63E+02	3.60E+00	9.77E-04	2.26E+18	2.26E-05	3.67E-03
sec-Butylbenzene	107,393	7.72E-05	3.24E-03	1.77E-04	1.12E-03	4.89E-04	1.01E-03	1.49E+00	3.60E+00	1.12E-03	9.86E+15	2.91E-05	4.35E-05
Chloroform	7,485	2.55E-03	1.07E-01	1.77E-04	1.78E-03	2.00E-04	1.07E-03	1.89E+02	3.60E+00	1.78E-03	1.11E+10	2.98E-05	5.62E-03
1,2-Dichloroethane	8,449	6.49E-04	2.73E-02	1.77E-04	1.80E-03	2.42E-04	1.16E-03	2.12E+04	3.60E+00	1.80E-03	9.06E+09	3.07E-05	6.51E-01
Methylene chloride	6,963	1.56E-03	6.56E-02	1.77E-04	1.74E-03	2.08E-04	1.07E-03	2.05E+04	3.60E+00	1.74E-03	2.05E+10	2.98E-05	6.10E-01
Ethylbenzene	10,078	4.83E-03	2.03E-01	1.77E-04	1.29E-03	1.40E-04	7.59E-04	1.09E+06	3.60E+00	1.29E-03	8.85E+13	2.59E-05	2.82E+01
Cumene	12,550	6.31E-01	2.65E+01	1.77E-04	1.11E-03	1.16E-04	6.44E-04	8.62E+06	3.60E+00	1.11E-03	1.32E+16	2.39E-05	2.06E+02
Toluene	9,082	4.27E-03	1.80E-01	1.77E-04	1.49E-03	1.63E-04	8.82E-04	6.45E+06	3.60E+00	1.49E-03	1.05E+12	2.76E-05	1.78E+02
MTBE	7,208	4.40E-04	1.85E-02	1.77E-04	1.78E-03	2.71E-04	1.21E-03	1.21E+04	3.60E+00	1.78E-03	1.11E+10	3.11E-05	3.76E-01
n-Propylbenzene	11,281	6.18E-03	2.60E-01	1.77E-04	1.03E-03	1.12E-04	6.08E-04	3.05E+05	3.60E+00	1.03E-03	2.54E+17	2.33E-05	7.10E+00
1,2,4-Trimethylbenzene	11,608	3.51E-03	1.47E-01	1.77E-04	1.04E-03	1.16E-04	6.22E-04	9.52E+05	3.60E+00	1.04E-03	1.73E+17	2.35E-05	2.24E+01
1,3,5-Trimethylbenzene	11,591	3.35E-03	1.41E-01	1.77E-04	1.03E-03	1.17E-04	6.21E-04	2.08E+05	3.60E+00	1.03E-03	2.22E+17	2.35E-05	4.88E+00
m-Xylene	10,177	4.48E-03	1.88E-01	1.77E-04	1.20E-03	1.31E-04	7.11E-04	2.41E+06	3.60E+00	1.20E-03	8.69E+14	2.51E-05	6.04E+01
o-Xylene	10,328	3.14E-03	1.32E-01	1.77E-04	1.49E-03	1.67E-04	8.93E-04	7.68E+05	3.60E+00	1.49E-03	1.02E+12	2.78E-05	2.13E+01
Naphthalene	12,844	2.59E-04	1.09E-02	1.77E-04	1.05E-03	2.12E-04	7.86E-04	6.11E+03	3.60E+00	1.05E-03	1.21E+17	2.63E-05	1.61E-01

Table HHRA-27
Risk and Hazard Calculations for Hypothetical Future Commercial/Industrial Worker Receptor from Exposure to Vapor Concentrations in Indoor Air Migrating from Saturated Vadose Soil Water
Medical Aid Building
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Scenario Timeframe: Future
Receptor Population: Site Worker
Receptor Age: Adult

Constituent	EPCair [a] (µg/m³)		CANCER RISK URF (mg/m³)⁻¹	CANCER RISK Calculated Risk	Percent Total ELCR	NON-CANCER HAZARD RfC (mg/m³)	NON-CANCER HAZARD Calculated Hazard	Percent Total HI
				ELCRi			HQi	
Volatile Organic Compounds								
Acetone	3.64E-01	m	NA	NA	–	3.1E+01	3E-06	<1%
Benzene	1.33E+02		7.80E-03	8.5E-05	98%	3.0E-02	1E+00	53%
Bromodichloromethane	1.25E-03	m	NA	NA	–	NA	NA	–
2-Butanone	3.43E-01	m	NA	NA	–	5.0E+00	2E-05	<1%
n-Butylbenzene	3.67E-03	m	NA	NA	–	1.0E+00	8E-07	<1%
sec-Butylbenzene	4.35E-05	m	NA	NA	–	4.0E-01	3E-08	<1%
Chloroform	5.62E-03	m	2.30E-02	1.1E-08	<1%	9.8E-02	1E-05	<1%
1,2-Dichloroethane	6.51E-01	m	2.60E-02	1.4E-06	2%	2.4E+00	6E-05	<1%
Dichloromethane	6.10E-01	m	4.70E-04	2.4E-08	<1%	1.0E+00	1E-04	<1%
Ethylbenzene	2.82E+01		NA	NA	–	1.0E+00	6E-03	<1%
Isopropylbenzene	2.06E+02	m	NA	NA	–	4.0E-01	1E-01	6%
Toluene	1.78E+02		NA	NA	–	5.0E+00	8E-03	<1%
Methyl tert-Butyl Ether (MTBE)	3.76E-01		2.60E-04	8.0E-09	<1%	3.0E+00	3E-05	<1%
n-Propylbenzene	7.10E+00		NA	NA	–	1.0E+00	2E-03	<1%
1,2,4-Trimethylbenzene	2.24E+01		NA	NA	–	7.0E-03	7E-01	38%
1,3,5-Trimethylbenzene	4.88E+00		NA	NA	–	NA	NA	–
m,p-Xylene	6.04E+01		NA	NA	–	7.0E-01	2E-02	1%
o-Xylene	2.13E+01		NA	NA	–	7.0E-01	7E-03	<1%
Naphthalene	1.61E-01		NA	NA	–	3.0E-03	1E-02	<1%
			Total ELCR	9E-05	100%	Total HI **	2	100%

** HI Segregated by Target Site/Critical Effect:
CNS - Central nervous system
NA - Not available
NR - None reported

HI (liver, kidney) =	0.1	HI (gastrointestinal tract) =	NA
HI (CNS, whole body, immune system) =	0.04	HI (nasal, lung) =	0.7
HI (blood) =	1	HI (eyes, nails, hair, skin) =	NA
HI (fetus, developmental) =	0.007	HI (NA, NR) =	0.002

[a] From Table HHRA-16.

—	Not applicable.	m	EPC based on maximum.
URF	Unit risk factor	mg/m³	Milligrams per cubic meter.
ELCR	Excess lifetime cancer risk.	µg/m³	Micrograms per cubic meter.
EPCair	Calculated exposure point concentration in indoor air.	NA	Not available.
HI	Hazard index (sum of the HQs).	RfC	Reference concentration.
HQ	Hazard quotient for non-cancer effects.		

Equations:
ELCRi = (EPCair × 0.001 x 24 × 0.042 × 84 × 25 × URF) / (25,550)

HQi = (EPCair × 0.001 x 24 × 0.042 × 84 × 25) / (9,125 × RfC)

Table ERA-1
SLERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects /		number of samples	FOD %	Maximum Concentration Detect (mg/kg)	SQL (mg/kg)		Ecological Screening Level (ESLs) [a] (mg/kg) Value	Source	Maximum Hazard Quotient (HQ) [b] (unitless)	SLERA COPEC? [c] (YES/no)	Rational
Volatile Organic Compounds												
Acetone	0	/	9	0	–	0.01		2.5	*R5*	NA	no	ND
Acetophenone	0	/	9	0	–	0.248		300	*R5*	NA	no	ND
Acrylonitrile	0	/	9	0	–	0.001		1,000	*R4*	NA	no	ND
Benzene	0	/	9	0	–	0.001		0.05	*R4*	NA	no	ND
Bis(2-chloroethyl)ether	0	/	9	0	–	0.248		23.7	*R5*	NA	no	ND
Bis(2-chloroisopropyl)ether	0	/	9	0	–	0.248		NA		NA	no	ND
Bromobenzene	0	/	9	0	–	0.001		NA		NA	no	ND
Bromodichloromethane	0	/	9	0	–	0.001		0.54	*R5*	NA	no	ND
Bromomethane	0	/	9	0	–	0.005		0.235	*R5*	NA	no	ND
2-Butanone	0	/	9	0	–	0.005		89.6	*R5*	NA	no	ND
n-Butylbenzene	0	/	9	0	–	0.001		NA		NA	no	ND
sec-Butylbenzene	0	/	9	0	–	0.001		NA		NA	no	ND
tert-Butylbenzene	0	/	9	0	–	0.001		NA		NA	no	ND
Carbon disulfide	0	/	9	0	–	0.001		0.09412	*R5*	NA	no	ND
Carbon tetrachloride	0	/	9	0	–	0.001		1,000	*R4*	NA	no	ND
CFC-11	0	/	9	0	–	0.001		16.4	*R5*	NA	no	ND
CFC-12	0	/	9	0	–	0.001		39.5	*R5*	NA	no	ND
Chlorobenzene	0	/	9	0	–	0.001		0.05	*R4*	NA	no	ND
Bromochloromethane	0	/	9	0	–	0.001		NA		NA	no	ND
Chlorodibromomethane	0	/	9	0	–	0.001		2.05	*R5*	NA	no	ND
Chloroethane	0	/	9	0	–	0.001		NA		NA	no	ND
2-Chloroethyl vinyl ether	0	/	9	0	–	0.005		NA		NA	no	ND
Chloroform	0	/	9	0	–	0.001		0.001	*R4*	NA	no	ND
Chloromethane	0	/	9	0	–	0.001		10.4	*R5*	NA	no	ND
2-Chlorophenol	0	/	9	0	–	0.248	^	0.243	*R5*	NA	no	ND
2-Chlorotoluene	0	/	9	0	–	0.001		NA		NA	no	ND
4-Chlorotoluene	0	/	9	0	–	0.001		NA		NA	no	ND
Cymene	0	/	9	0	–	0.001		NA		NA	no	ND
Dibenzofuran	0	/	9	0	–	0.248		600	*R4s*	NA	no	ND
1,2-Dibromo-3-chloropropane	0	/	9	0	–	0.005		0.0352	*R5*	NA	no	ND
1,2-Dibromoethane	0	/	9	0	–	0.001		1.23	*R5*	NA	no	ND
Dibromomethane	0	/	9	0	–	0.001		65	*R5*	NA	no	ND
1,2-Dichlorobenzene	0	/	9	0	–	0.248		2.96	*R5*	NA	no	ND
1,3-Dichlorobenzene	0	/	9	0	–	0.248		37.7	*R5*	NA	no	ND
1,4-Dichlorobenzene	0	/	9	0	–	0.248		0.546	*R5*	NA	no	ND
trans-1,4-Dichlorobutene	0	/	9	0	–	0.01		NA		NA	no	ND
1,1-Dichloroethane	0	/	9	0	–	0.001		20.1	*R5*	NA	no	ND
1,2-Dichloroethane	0	/	9	0	–	0.001		0.4	*R4*	NA	no	ND
1,1-Dichloroethylene	0	/	9	0	–	0.001		8.28	*R5*	NA	no	ND
cis-1,2-Dichloroethene	0	/	9	0	–	0.001		NA		NA	no	ND
trans-1,2-Dichloroethene	0	/	9	0	–	0.001		0.784	*R5*	NA	no	ND

Table ERA-1
SLERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects / number of samples			FOD %	Maximum Concentration Detect (mg/kg)	Maximum Concentration SQL (mg/kg)		Ecological Screening Level (ESLs) [a] (mg/kg) Value	Ecological Screening Level (ESLs) [a] (mg/kg) *Source*	Maximum Hazard Quotient (HQ) [b] (unitless)	SLERA COPEC? [c] (YES/no)	SLERA COPEC? [c] Rational
Methylene chloride	0	/	9	0	–	0.005		2	*R4*	NA	no	ND
1,2-Dichloropropane	0	/	9	0	–	0.001		700	*R4*	NA	no	ND
1,3-Dichloropropane	0	/	9	0	–	0.001		700	*R4s*	NA	no	ND
2,2-Dichloropropane	0	/	9	0	–	0.001		700	*R4s*	NA	no	ND
1,1-Dichloropropene	0	/	9	0	–	0.001		NA		NA	no	ND
cis-1,3-Dichloropropene	0	/	9	0	–	0.001		0.398	*R5*	NA	no	ND
trans-1,3-Dichloropropene	0	/	9	0	–	0.001		0.398	*R5*	NA	no	ND
Ethylbenzene	0	/	9	0	–	0.001		0.05	*R4*	NA	no	ND
Iodomethane	0	/	9	0	–	0.005		1.23	*R5*	NA	no	ND
Isopropylbenzene	0	/	9	0	–	0.001		NA		NA	no	ND
Methyl n-butyl ketone	0	/	9	0	–	0.005		12.6	*R5*	NA	no	ND
Toluene	0	/	9	0	–	0.001		0.05	*R4*	NA	no	ND
4-Methyl-2-pentanone (MIBK)	0	/	9	0	–	0.005		443	*R5*	NA	no	ND
Methyl tert-butyl ether (MTBE)	0	/	9	0	–	0.001		NA		NA	no	ND
Nitrobenzene	0	/	9	0	–	0.248		40	*R4*	NA	no	ND
n-Propylbenzene	0	/	9	0	–	0.001		NA		NA	no	ND
Styrene (monomer)	0	/	9	0	–	0.001		0.1	*R4*	NA	no	ND
Tetrachloroethene	0	/	9	0	–	0.001		9.92	*R5*	NA	no	ND
1,1,1,2-Tetrachloroethane	0	/	9	0	–	0.001		225	*R5*	NA	no	ND
1,1,2,2-Tetrachloroethane	0	/	9	0	–	0.001		0.127	*R5*	NA	no	ND
1,1,1-Trichloroethane	0	/	9	0	–	0.001		29.8	*R5*	NA	no	ND
1,1,2-Trichloroethane	0	/	9	0	–	0.001		28.6	*R5*	NA	no	ND
1,2,3-Trichlorobenzene	0	/	9	0	–	0.005		11.1	*R5s*	NA	no	ND
1,2,3-Trichloropropane	0	/	9	0	–	0.001		3.36	*R5*	NA	no	ND
1,2,4-Trichlorobenzene	0	/	9	0	–	0.248		11.1	*R5*	NA	no	ND
1,2,4-Trimethylbenzene	0	/	9	0	–	0.001		0.05	*R4s*	NA	no	ND
1,3,5-Trimethylbenzene	0	/	9	0	–	0.001		0.05	*R4s*	NA	no	ND
Trichloroethylene	0	/	9	0	–	0.001		0.001	*R4*	NA	no	ND
Vinyl chloride	0	/	9	0	–	0.001		0.01	*R4*	NA	no	ND
m,p-Xylene	0	/	9	0	–	0.001		0.05	*R4s*	NA	no	ND
o-Xylene	0	/	9	0	–	0.001		0.05	*R4s*	NA	no	ND
Semi Volatile Organic Compounds												
4-Aminobiphenyl	0	/	9	0	–	0.248	^	0.00305	*R5*	NA	no	ND
Aniline	0	/	9	0	–	0.248	^	0.0568	*R5*	NA	no	ND
Benzidine	0	/	9	0	–	0.248		NA		NA	no	ND
Benzoic acid	0	/	9	0	–	0.248		NA		NA	no	ND
Benzyl alcohol	0	/	9	0	–	0.248		65.8	*R5*	NA	no	ND
Benzyl butyl phthalate	0	/	9	0	–	0.248	^	0.23889	*R5*	NA	no	ND
Bis(2-chloroethoxy)methane	0	/	9	0	–	0.248		0.302	*R5*	NA	no	ND
Bis(2-ethylhexyl)phthalate	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
4-Bromophenyl phenyl ether	0	/	9	0	–	0.248		NA		NA	no	ND
4-Chloroaniline	0	/	9	0	–	0.248		1.1	*R5*	NA	no	ND

Table ERA-1
SLERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects /		number of samples	FOD %	Maximum Concentration Detect (mg/kg)	SQL (mg/kg)		Ecological Screening Level (ESLs) [a] (mg/kg) Value	Source	Maximum Hazard Quotient (HQ) [b] (unitless)	SLERA COPEC? [c] (YES/no)	Rational
4-Chloro-3-methylphenol	0	/	9	0	–	0.248		7.95	*R5*	NA	no	ND
Chlorophenols	0	/	9	0	–	0.248	^	0.199	*R5*	NA	no	ND
4-Chlorophenyl phenyl ether	0	/	9	0	–	0.248		NA		NA	no	ND
Dibenz[a,,j]acridine	0	/	9	0	–	0.248		NA		NA	no	ND
3,3'-Dichlorobenzidine	0	/	9	0	–	0.248		0.646	*R5*	NA	no	ND
2,4-Dichlorophenol	0	/	9	0	–	0.248		87.5	*R5*	NA	no	ND
2,6-Dichlorophenol	0	/	9	0	–	0.248		1.17	*R5*	NA	no	ND
Diethyl phthalate	0	/	9	0	–	0.248		100	*R4*	NA	no	ND
4-Dimethylaminoazobenzene	0	/	9	0	–	0.248	^	0.04	*R5*	NA	no	ND
2,4-Dimethylphenol	0	/	9	0	–	0.248	^	0.01	*R5*	NA	no	ND
2,4-Dinitrophenol	0	/	9	0	–	0.248		20	*R4*	NA	no	ND
2,4-Dinitrotoluene	0	/	9	0	–	0.248		1.28	*R5*	NA	no	ND
a,a-Dimethylphenethylamine	0	/	9	0	–	0.248		0.3	*R5*	NA	no	ND
Dimethyl phthalate	0	/	9	0	–	0.248		200	*R4*	NA	no	ND
Di-n-butyl phthalate	0	/	9	0	–	0.248		200	*R4*	NA	no	ND
Di-n-octyl phthalate	0	/	9	0	–	0.248		709	*R5*	NA	no	ND
Diphenylamine	0	/	9	0	–	0.248		1.01	*R5*	NA	no	ND
Diphenylhydrazine	0	/	9	0	–	0.248		NA		NA	no	ND
Ethyl methanesulfonate	0	/	9	0	–	0.248		NA		NA	no	ND
Hexachloro-1,3-butadiene	0	/	9	0	–	0.248	^	0.0398	*R5*	NA	no	ND
Hexachlorobenzene	0	/	9	0	–	0.248	^	0.0025	*R4*	NA	no	ND
Hexachlorocyclopentadiene	0	/	9	0	–	0.248		10	*R4*	NA	no	ND
Hexachloroethane	0	/	9	0	–	0.248		0.596	*R5*	NA	no	ND
Methanamine, n-methyl-n-nitroso	0	/	9	0	–	0.248	^	0.0000321	*R5*	NA	no	ND
2-Methyl-4,6-Dinitrophenol	0	/	9	0	–	0.248	^	0.144	*R5*	NA	no	ND
Methyl methanesulfonate	0	/	9	0	–	0.248		0.315	*R5*	NA	no	ND
2-Methylphenol	0	/	9	0	–	0.248		40.4	*R5*	NA	no	ND
3-Methylphenol	0	/	9	0	–	0.248		3.49	*R5*	NA	no	ND
2-Methyl pyridine	0	/	9	0	–	0.248		9.9	*R5*	NA	no	ND
1-Naphthylamine	0	/	9	0	–	0.248		9.34	*R5*	NA	no	ND
2-Naphthylamine	0	/	9	0	–	0.248		3.03	*R5*	NA	no	ND
2-Nitroaniline	0	/	9	0	–	0.248		74.1	*R5*	NA	no	ND
3-Nitroaniline	0	/	9	0	–	0.248		3.16	*R5*	NA	no	ND
4-Nitroaniline	0	/	9	0	–	0.248		21.9	*R5*	NA	no	ND
2-Nitrophenol	0	/	9	0	–	0.248		1.6	*R5*	NA	no	ND
4-Nitrophenol	0	/	9	0	–	0.248		5.12	*R5*	NA	no	ND
n-Nitrosodi-n-butylamine	0	/	9	0	–	0.248		0.267	*R5*	NA	no	ND
n-Nitrosodi-n-propylamine	0	/	9	0	–	0.248		0.544	*R5*	NA	no	ND
n-Nitrosopiperidine	0	/	9	0	–	0.248	^	0.0065	*R5*	NA	no	ND
Pentachlorobenzene	0	/	9	0	–	0.248	^	0.0025	*R4*	NA	no	ND
Pentachlorophenol	0	/	9	0	–	0.248		2.1	*EcoSSL*	NA	no	ND
Phenacetin	0	/	9	0	–	0.248		11.7	*R5*	NA	no	ND

Table ERA-1
SLERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects /		number of samples	FOD %	Maximum Concentration Detect (mg/kg)	SQL (mg/kg)		Ecological Screening Level (ESLs) [a] (mg/kg) Value	Source	Maximum Hazard Quotient (HQ) [b] (unitless)	SLERA COPEC? [c] (YES/no)	Rational
Phenol	0	/	9	0	–	0.248		120	*R5*	NA	no	ND
Propyzamide	0	/	9	0	–	0.248	^	0.0136	*R5*	NA	no	ND
Pyridine	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
1,2,4,5-Tetrachlorobenzene	0	/	9	0	–	0.248		2.02	*R5*	NA	no	ND
Bromoform	0	/	9	0	–	0.001		15.9	*R5*	NA	no	ND
2,4,5-Trichlorophenol	0	/	9	0	–	0.248		4	*R4*	NA	no	ND
2,4,6-Trichlorophenol	0	/	9	0	–	0.248		10	*R4*	NA	no	ND
Isophorone	0	/	9	0	–	0.248		139	*R5*	NA	no	ND
Polycyclic Aromatic Hydrocarbons												
Acenaphthene	0	/	9	0	–	0.248		20	*R4*	NA	no	ND
Acenaphthylene	0	/	9	0	–	0.248		682	*R5*	NA	no	ND
Anthracene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Benzo(a)anthracene	0	/	9	0	–	0.248		5.21	*R5*	NA	no	ND
Benzo(a)pyrene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Benzo(b)fluoranthene	0	/	9	0	–	0.248	^	0.1	*R4s*	NA	no	ND
Benzo(g,h,i)perylene	0	/	9	0	–	0.248		119	*R5*	NA	no	ND
Benzo(k)fluoranthene	0	/	9	0	–	0.248		148	*R5*	NA	no	ND
1,2-Benzphenanthracene	0	/	9	0	–	0.248		4.73	*R5*	NA	no	ND
1-Chloronaphthalene	0	/	9	0	–	0.248	^	0.0122	*R5s*	NA	no	ND
2-Chloronaphthalene	0	/	9	0	–	0.248	^	0.0122	*R5*	NA	no	ND
Dibenz(a,h)anthracene	0	/	9	0	–	0.248		18.4	*R5*	NA	no	ND
7,12-Dimethylbenz(a)anthracene	0	/	9	0	–	0.248		5.21	*R5s*	NA	no	ND
Fluoranthene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Fluorene	0	/	9	0	–	0.248		122	*R5*	NA	no	ND
Indeno(1,2,3-cd)pyrene	0	/	9	0	–	0.248		109	*R5*	NA	no	ND
3-Methylchloranthrene	0	/	9	0	–	0.248	^	0.0779	*R5*	NA	no	ND
1-Methylnaphthalene	0	/	9	0	–	0.248		3.24	*R5s*	NA	no	ND
2-Methylnaphthalene	0	/	9	0	–	0.248		3.24	*R5*	NA	no	ND
Naphthalene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Phenanthrene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Pyrene	0	/	9	0	–	0.248	^	0.1	*R4*	NA	no	ND
Pesticides												
Pentachloronitrobenzene	0	/	9	0	–	0.248		7.09	*R5*	NA	no	ND
Total Petroleum Hydrocarbons (TPH)												
Gasoline Range Organics (GRO)	0	/	9	0	–	1		10,000	*API*	NA	no	ND
Explosives												
2,6-Dinitrotoluene	0	/	9	0	–	0.248	^	0.0328	*R5*	NA	no	ND
Inorganics												
Arsenic	7	/	9	77.8	5.91	2		18	*EcoSSL*	0.3	no	HQ ≤ 1
Barium	9	/	9	100	99.8	–		330	*EcoSSL*	0.3	no	HQ ≤ 1
Cadmium	9	/	9	100	2.46	–		0.36	*EcoSSL*	7	YES	HQ > 1
Chromium	9	/	9	100	13.8	–		26	*EcoSSL*	1	no	HQ ≤ 1

Table ERA-1
SLERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	Frequency of Detection (FOD) number of detects / number of samples			FOD %	Maximum Concentration Detect (mg/kg)	Maximum Concentration SQL (mg/kg)		Ecological Screening Level (ESLs) [a] (mg/kg) Value	Ecological Screening Level (ESLs) [a] (mg/kg) *Source*	Maximum Hazard Quotient (HQ) [b] (unitless)	SLERA COPEC? [c] (YES/no)	SLERA COPEC? [c] Rational
Lead	9	/	9	100	24.3	–		11	*EcoSSL*	2	**YES**	HQ > 1
Mercury	0	/	9	0	–	0.15	^	0.1	*R4*	NA	no	ND
Selenium	0	/	9	0	–	1	^	0.52	*EcoSSL*	NA	no	ND
Silver	0	/	9	0	–	0.2		4.2	*EcoSSL*	NA	no	ND

Notes:

^ = SQLs greater than the screening value or without a screening value will be further evaluated and discussed in the uncertainty section of the risk assessment.
mg/kg = Milligrams per kilogram.
NA = Not available or applicable.
ND = Not detected.
SLERA = Screening Level Ecological Risk Assessment.
SQL = Sample Quantitation Limit.

[a] See Appendix E, Table E.2-22 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.
[b] The hazard quotient (HQ) is the ratio of the maximum detected concentration to the surface soil screening level. HQs are rounded to the nearest whole number.
[c] Constituents with a hazard quotient (HQ) greater than 1 (HQ > 1) were considered constituents of potential ecological concern (COPECs) for screening level assessment unless they were not detected (ND).

Table ERA-2
BERA Constituents of Potential Ecological Concern in Soil
0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	EPC [a] (mg/kg)	Ecological Screening Level (ESLs) [b] (mg/kg) Value	Source	Refined Hazard Quotient (HQ) [c] Detect (unitless)	Refined Constituent of Potential Ecological Concern (COPEC) [d] (YES/no)	Rational	Bioaccumulative ? [e] (YES/no)
Inorganics							
Cadmium	1.691	0.36	*EcoSSL*	5	**YES**	**HQ > 1**	YES
Lead	16.27	11	*EcoSSL*	1	no	HQ ≤ 1	YES

Notes:

BERA = Baseline Ecological Risk Assessment.
COPEC = Constituent of Potential Ecological Concern.
mg/kg = Milligrams per kilogram.
NA = Not available or applicable.
SQL = Sample Quantitation Limit.

[a] The Exposure Point Concentrations (EPCs) based on the upper confidence limits on the mean (UCLs) were calculated using ProUCL 4.00.05, where calculable. EPCs marked with "m" are the maximum concentration.
[b] See Appendix E, Table E.2-22 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.
[c] The refined hazard quotient (HQ) is the ratio of the EPC to the surface soil screening level. HQs are rounded to the nearest whole number.
[d] Constituents with a refined hazard quotient (HQ) greater than 1 (HQ > 1) or without a screening level (NSL) were considered constituents of potential ecological concern (COPECs) for the baseline risk assessment.
[e] See Appendix E, Table E.2-22 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes.

Table ERA-3
Summary of BERA Constituents of Potential Ecological Concern and
Uptake Model Exposure Point Concentrations in Soil
Solid Waste Managment Unit 197 (SWMU 197)
White Sands Missile Range, New Mexico

Constituent	BERA COPEC? 0-10 ft bgs	Uptake Model Exposure Point Concentration (mg/kg) [a] 0-10 ft bgs Maximum Scenario	Refined Scenario
Inorganics			
Cadmium	YES	1.691	1.35

Notes:
BERA = Baseline Ecological Risk Assessment.
COPEC = Constituent of Potential Ecological Concern.
ft bgs = Feet below ground surface.

mg/kg = Milligrams per kilogram.
SQL = Sample Quantitation Limit.

[a]

The maximum scenario exposure point concentrations (EPCs) for uptake models were set at the lesser of the upper confidence limit (UCL) or the maximum concentration where the UCL was incalculable and those for the refined scenario were set at the arithmetic average (non detects were set at 1/2 the sample quantification limit). The UCLs were calculated using ProUCL 4.00.05; the UCL used is the one recommended by ProUCL 4.00.05. EPCs marked with "m" are based on the maximum detected concentration.

Table ERA-4
Exposure Assumptions for Ecological Receptors
SWMU 197 Ecological Risk Assessment
White Sands Missile Range, New Mexico

Exposure Parameter	Acronym	Units	Terrestrial Receptor Desert Kit Fox	
Body Weight (BW)	BW	kg	1.985	[e]
Proportion of Diet (P)	P	unitless		
Maximum Scenario:				
Soil		%	2.8%	[b]
Invertebrates		%	–	
Plants and Fungi		%	–	
Small Mammals		%	100.0%	[f]
Refined Scenario:				
Soil		%	2.8%	[b]
Invertebrates		%	1.3%	[f]
Plants and Fungi		%	0.7%	[f]
Small Mammals		%	98.0%	[f]
Food Ingestion Rate - dry weight (IRdf)	IRdf	kg/day	0.0702	[c]
Food Ingestion Rate - wet weight (IRwf)	IRwf	kg/day	0.219	[c]
Water Ingestion Rate (IRw)	IRw	L/day	–	
Home Range [a]	HR	acres	3,039	[g]
Site Use Factor - Maximum Scenario (SUFm)	SUFm	unitless	1	
Site Use Factor - Refine Scenario (SUFr) [d]	SUFr	unitless	0.000033	
Exposure Frequency (EF)	EF	unitless	1	

Notes:
% = Percent.
kg = Kilogram.
L = Liter.

[a] Home ranges were converted to acres if presented in units other than acres in respective source

[b] Beyer et al., 1994.

[c] Nagy, 2001.

[d] Refined SUFs were calculated using a site acreage of 0.1 acres.

[e] From CalEPA. 2003. Office of Environmental Health Hazard Assessment (OEHHA). California Wildlife Biology, Exposure Factors and Toxicity Database (Cal/Ecotox). California Environmental Protection Agency. Available at: http://www.oehha.org/cal_ecotox/species_reports.htm

[f] From CalEPA. 2005. California Department of Fish and Game (CDFG). Biogeographic Data Branch: Wildlife Notes. California Environmental Protection Agency. Available at: http://www.dfg.ca.gov/bdb/html/cawildlife.html

[g] From Zoellick, B.W. and N.S. Smith. 1992. Size and spatial organization of home ranges of kit foxes in Arizona. J. Mammal. 73(1): 83-88.

Table ERA-5
Bioconcentration and Bioaccumulation Factors for Soil
SWMU 197 Ecological Risk Assessment
White Sands Missile Range, New Mexico

	Soil Bioconcentration and Bioaccumulation Factors (BCFsl and BAFsl)		
	Invertebrates	Vegetation	Mammalian
Constituent	$BCFsl_i$ [a]	$BCFsl_v$ [b]	$BAFsl_m$ [c]
Inorganics			
Cadmium	ln(Ci) = 0.795 * ln(Cs) + 2.114 [d]	ln(Cp) = 0.546 * ln(Cs) - 0.475 [d]	ln(Cm) = 0.4723 * ln(Cs) - 1.2571 [d]

Notes:

-- = Not applicable.

BAF = Bioaccumulation Factor (unitless); BAF = (Tissue Concentration)/(Dietary Intake).

BCF = Bioconcentration Factor (unitless); BCF = (Tissue Concentration)/(Media Concentration).

[a] $BCFsl_i$ denotes BCFs for invertebrates. Unless otherwise noted, uptake equations for BCFs for earthworms were obtained from USEPA (2007). Values for phenanthrene and copper are presented in wet weight.

[b] $BCFsl_v$ denotes BCFs for vegetation. Unless otherwise noted, uptake equations for BCFs for vegetation were obtained from USEPA (2007) and are presented in dry weight.

[c] $BAFsl_m$ denotes BAFs for mammals. Unless otherwise noted, uptake equations for BCFs for small mammals were obtained from USEPA (2007) and are presented in dry weight.

[d] Uptake equations from USEPA EcoSSL guidance Attachment 4-1 (USEPA, 2007b).

Table ERA-6
Maximum Scenario Food Chain Modeling for the Desert Kit Fox
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
U.S. Army White Sands Missile Range

Constituent	Maximum Scenario EPC [a] (mg/kg)	Soil Bioconcentration Factors [b]	Estimated Dietary Tissue Concentrations [c] (mg/kg)	Maximum Estimated Dietary Ingestion [d]	Toxicity Reference Values [e] mg/kg-BW-day		Maximum Scenario HQ [f]	
		Mammal	Mammal	mg/kg-BW-day	LOAEL	NOAEL	LOAEL	NOAEL
Inorganics								
Cadmium	1.691	3.65E-01	1.17E-01	0.015	7.7	0.77	0.002	0.02

Notes:

HQ = Hazard Quotient.
LOAEL = Lowest observed adverse effect level.
mg/kg = Milligrams per kilogram.
mg/kg-BW-day = Milligrams per kilogram of body weight each day.
NA = Not applicable.
NOAEL = No observed adverse effect level.
TRV = Toxicity reference value.

[a] The exposure point concentrations (EPCs) for the maximum scenario were set at the upper confidence level on the mean (UCL) or the maximum concentration where the UCL was incalculable. EPCs marked with "m" are the maximum concentration.
[b] See Appendix E, Table E.2-26 (ARCADIS, 2010) for sources of soil bioaccumulation factors.
[c] Estimated tissue concentration = concentration in exposure medium x bioaccumulation factor (in wet weight) or Estimated tissue concentration = concentration in exposure medium x bioaccumulation factor x tissue percent dry weight (i.e., 12% for plants, 16.7% for invertebrates, and 32% for mammals).
[d] See Appendix E, Table E.2-29 (ARCADIS, 2010) for equations used to estimate dietary ingestion and Table E.2-24 (ARCADIS, 2010) for receptor exposure assumptions.
[e] See Appendix E, Table E.2-25 (ARCADIS, 2010) for sources of soil bioaccumulation factors.
[f] Maximum hazard quotient (HQ) = (estimated dietary ingestion)/(toxicity reference value). HQs are rounded to the nearest whole number.

Table ERA-7
Refined Scenario Food Chain Modeling for the Desert Kit Fox
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
U.S. Army White Sands Missile Range

Constituent	Refined Scenario EPC [a] (mg/kg)	Soil Bioconcentration Factors [b]			Estimated Dietary Tissue Concentrations [c] (mg/kg)			Refined Estimated Dietary Ingestion [d] mg/kg-BW-day	Toxicity Reference Values [e] mg/kg-BW-day		Refined Scenario HQ [f]	
		Invertebrate	Vegetation	Mammal	Invertebrate	Vegetation	Mammal		LOAEL	NOAEL	LOAEL	NOAEL
Inorganics												
Cadmium	1.35	1.05E+01	7.33E-01	3.28E-01	1.76E+00	8.79E-02	1.05E-01	0.0000005	7.7	0.77	6E-08	0.0000006

Notes:

HQ = Hazard Quotient.
LOAEL = Lowest observed adverse effect level.
mg/kg = Milligrams per kilogram.
mg/kg-BW-day Milligrams per kilogram of body weight each day.
NA = Not applicable.
NOAEL = No observed adverse effect level.
TRV = Toxicity reference value.

[a] The exposure point concentrations (EPCs) were set at the lower of the arithmetic average (non detects were set at 1/2 the sample quantification limit) and the maximum detected concentration. EPCs marked with "m" are the maximum concentration.
[b] See Appendix E, Table E.2-26 (ARCADIS, 2010) for sources of soil bioaccumulation factors.
[c] Estimated tissue concentration = concentration in exposure medium x bioaccumulation factor (in wet weight) or Estimated tissue concentration = concentration in exposure medium x bioaccumulation factor x tissue percent dry weight (i.e., 12% for plants, 16.7% for invertebrates, and 32% for mammals).
[d] See Appendix E, Table E.2-29 (ARCADIS, 2010) for equations used to estimate dietary ingestion and Table E.2-24 (ARCADIS, 2010) for receptor exposure assumptions.
[e] See Appendix E, Table E.2-25 (ARCADIS, 2010) for sources of soil bioaccumulation factors.
[f] Refined hazard quotient (HQ) = (estimated dietary ingestion)/(toxicity reference value). HQs are rounded to the nearest whole number.

Table ERA-8
Summary of Refined Ecological Risk Characterization Results - Terrestrial Habitat
Soil 0-10 foot Depth Interval
Solid Waste Managment Unit 197 (SWMU 197)
U.S. Army White Sands Missile Range

	Soil				BERA Level Assessment			Results of Refined Food Chain Models [c]	
	Frequency of Detection			EPC	Hazard Quotient	Ecological Screening Level [b]		Desert Kit Fox	
Constituent	# detects / n samples			(mg/kg)	[a]	Source	Basis	LOAEL	NOAEL
Inorganics									
Cadmium	9	-	9	1.35	5	EcoSSL	mam	0.00000006	0.0000006

Notes:

– =	Not applicable.
COPEC =	Constituent of Potential Ecological Concern.
BERA =	Baseline Ecological Risk Assessment.
EPC =	The exposure point concentrations (EPCs) were set at the arithmetic average (non detects were set at 1/2 the sample quantification limit). EPCs marked with "m" are the maximum concentration.
ESL =	Ecological Screening Critiera.
FOD =	Frequency of Detection.
LOAEL =	Lowest observed adverse effect level.
mg/kg =	Milligrams per kilogram.
NOAEL =	No observed adverse effect level.
[a]	Hazard quotients (HQs) greater than one are presented in bold font. HQs are rounded to the nearest whole number.
[b]	See Appendix E, Table E.2-22 (ARCADIS, 2010) for sources of saturated vadose zone soil water screening levels and explanation of notes. R4: Region 4 Ecological Screening Values (USEPA 2001d; R4). EcoSSL: USEPA Ecological Soil Screening Levels (USEPA 2005; EcoSSL). Where readily available (i.e., EcoSSLs), the basis of the ecological screening level is presented.
[c]	Food chain modeling was conducted for bioaccumulative COPECs.

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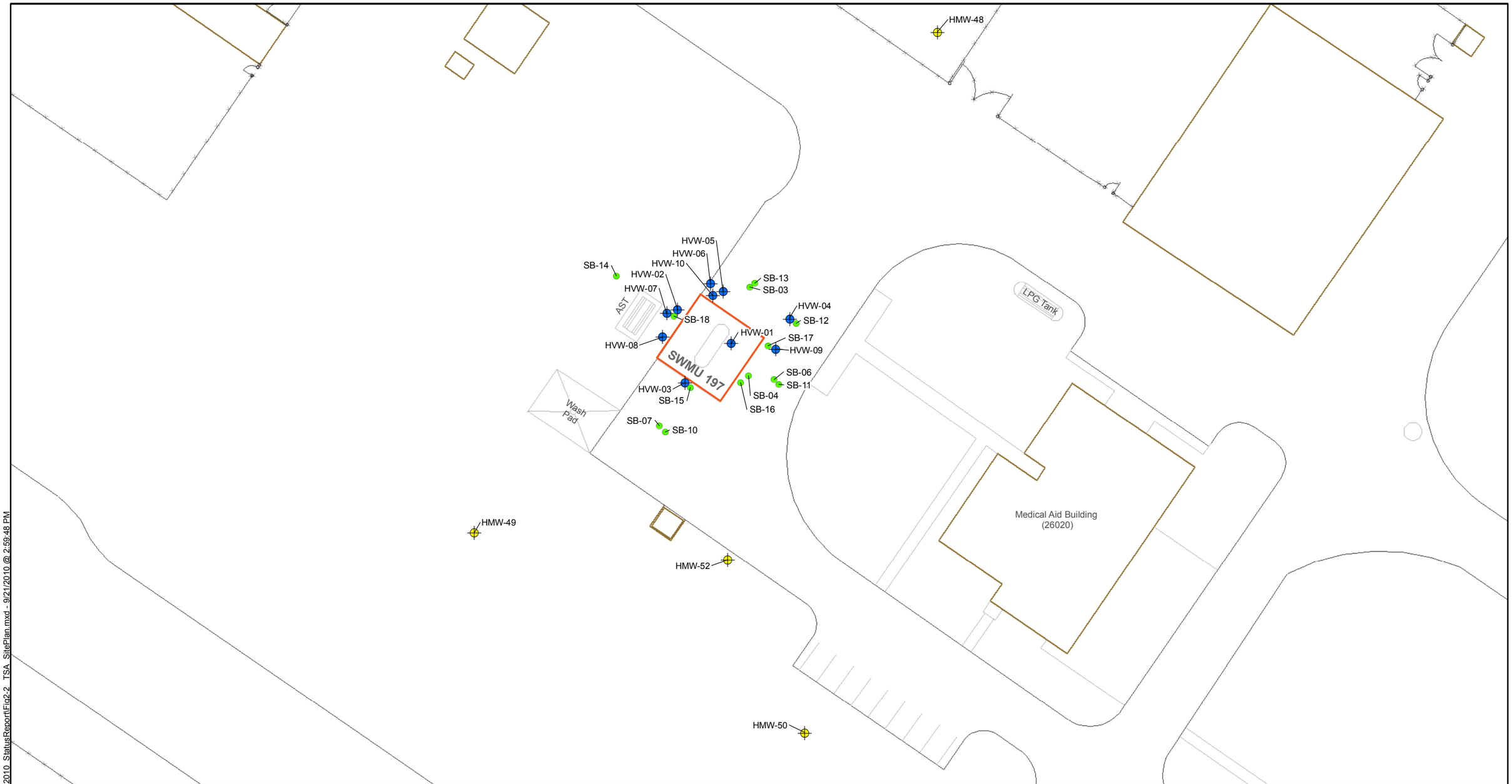
Figures



LEGEND

HVW-01	WELLS SCREENED IN VADOSE ZONE WATER (HVWs - INSTALLED BY WTS MAY 2000 AND ARCADIS 2009)
HMW-49	WELLS SCREENED IN THE REGIONAL AQUIFER (HMWs - INSTALLED BY WTS MAY 2000 AND MAY 2004)
SB-10	SOIL BORINGS (INSTALLED BY WTS JULY 2004 AND ARCADIS 2010)

SWMU 197

SITE FEATURES

BUILDING

FENCE

PAVED ROAD

SOURCE: BASE MAP PROVIDED BY ZIA AND RECTIFIED TO 2009 NAIP IMAGERY AND 2010 SURVEY.

N

0 15 30 60 Feet

WHITE SANDS MISSILE RANGE
NEW MEXICO

STATUS REPORT – TSA GASOLINE SPILL SITE (SWMU 197)

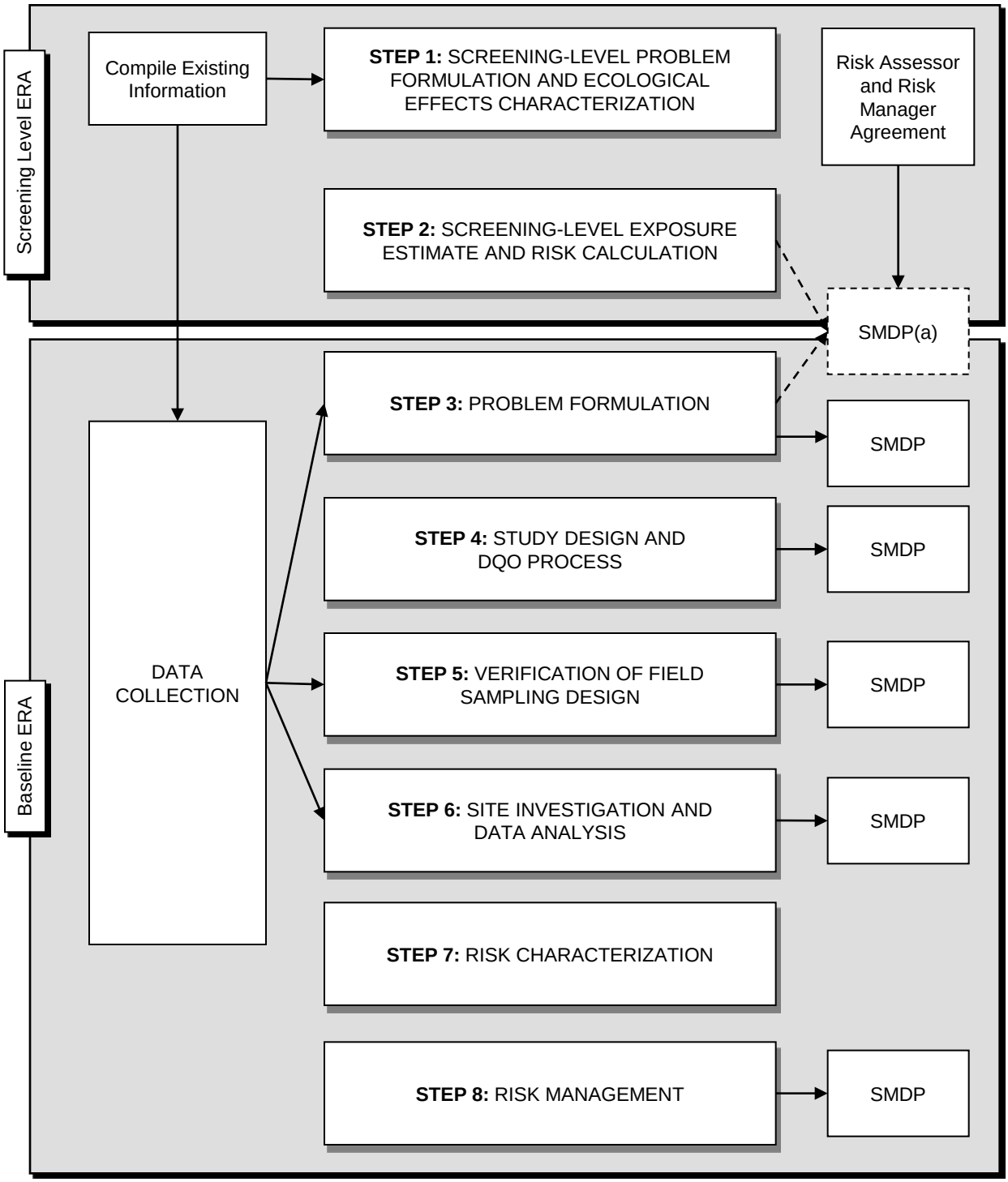
SITE PLAN

ARCADIS

FIGURE
2-1

i:\WhiteSands\GIS\ArcMap_MXD\TSA\2010_StatusReport\Fig2-2_TSA_SitePlan.mxd - 9/21/2010 @ 2:59:48 PM

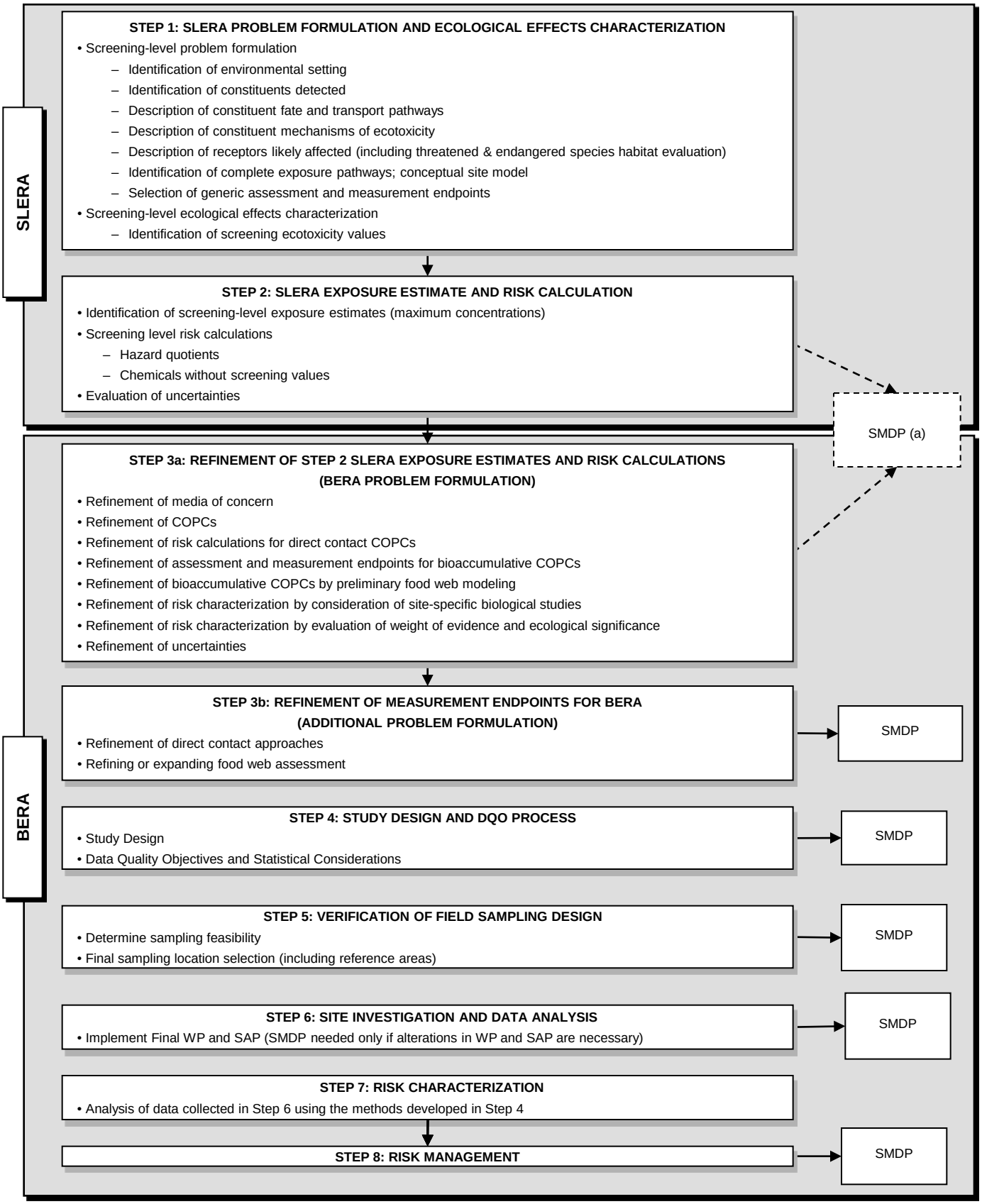
Figure 2-2
Eight-Step Ecological Risk Assessment Process



Notes:

(a) SMDP occurs EITHER after Step 2 or after Step 3a
ERA Ecological Risk Assessment
SMDP Scientific Management Decision Point
Source Adapted from USEPA, 2000a.

Figure 2-3
Expanded Eight-Step Ecological Risk Assessment Process



Notes:

(a)	SMDP occurs EITHER after Step 2 or after Step 3a	(Section)	Section number in parentheses corresponds with text of the Work Plan
COPCs	Constituents of Potential Concern	SMDP	Scientific Management Decision Point
DQO	Data Quality Objectives	SW/SD	Surface water and sediment
GW	Groundwater	WP	Work Plan
SAP	Sampling and Analysis Plan	BERA	Baseline ERA
Source: Adapted from USEPA, 1997 and 2000		SLERA	Screening-level ERA

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Attachments

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Attachment A

Site Photographs

Attachment A
Risk Assessment
SWMU 197
White Sands Missile Range
New Mexico

Photograph 1
SWMU 197
HELSTF TSA, facing southwest.

Photograph 2
SWMU 197
HELSTF TSA, facing southwest.

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Attachment B

Risk Assessment Data Sets

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-017 6.5 - 7 05/12/04
Metals									
Arsenic	mg/kg	5.91	4.21	2.72	<2.00	5.60	4.98	*3.00*	*2.95*
Barium	mg/kg	31.2	65.8	92.0	19.1	19.3	80.9	12.6	69.0
Cadmium	mg/kg	*2.46*	*1.58*	1.36	*1.45*	*1.42*	0.942	0.612	0.767
Chromium	mg/kg	13.8	8.52	7.56	7.70	6.26	8.77	5.39	3.58
Lead	mg/kg	24.3	15.1	15.0	10.8	17.8	9.56	7.37	5.93
Mercury	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-017 6.5 - 7 05/12/04
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(b)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-017 6.5 - 7 05/12/04
Diphenylhydrazine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluorene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
VOCs									
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-017 6.5 - 7 05/12/04
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 6.5 - 7 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-015 6.5 - 7 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-017 6.5 - 7 05/12/04
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m,p-Xylene (m-Xylene)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MTBE	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -	- -

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 6.5 - 7 05/12/04
Metals		
Arsenic	mg/kg	*<2.00*
Barium	mg/kg	99.8
Cadmium	mg/kg	*1.57*
Chromium	mg/kg	7.90
Lead	mg/kg	6.72
Mercury	mg/kg	*<0.150*
Selenium	mg/kg	*<1.00*
Silver	mg/kg	<0.200
SVOCs		
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248
1-Methylnaphthalene	mg/kg	<0.248
1-Naphthylamine	mg/kg	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248
2-Chlorophenol	mg/kg	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248
2-Methylnaphthalene	mg/kg	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248
2-Naphthylamine	mg/kg	<0.248
2-Nitroaniline	mg/kg	<0.248
2-Nitrophenol	mg/kg	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 6.5 - 7 05/12/04
3-Methylphenol/4-Methylphenol	mg/kg	<0.248
3-Nitroaniline	mg/kg	<0.248
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248
4-Aminobiphenyl	mg/kg	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248
4-Nitrophenol	mg/kg	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248
Acenaphthene	mg/kg	<0.248
Acenaphthylene	mg/kg	<0.248
Acetophenone	mg/kg	<0.248
Aniline	mg/kg	<0.248
Anthracene	mg/kg	<0.248
Benzidine	mg/kg	<0.248
Benzo(a)Anthracene	mg/kg	<0.248
Benzo(a)Pyrene	mg/kg	<0.248
Benzo(b)Fluoranthene	mg/kg	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248
Benzoic Acid	mg/kg	<0.248
Benzyl Alcohol	mg/kg	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248
Dibenzofuran	mg/kg	<0.248
Diethyl Phthalate	mg/kg	<0.248
Dimethyl Phthalate	mg/kg	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248
Diphenylamine	mg/kg	<0.248

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 6.5 - 7 05/12/04
Diphenylhydrazine	mg/kg	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248
Fluoranthene	mg/kg	<0.248
Fluorene	mg/kg	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248
Hexachloroethane	mg/kg	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248
m-Dichlorobenzene	mg/kg	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248
Naphthalene	mg/kg	*<0.248*
Nitrobenzene	mg/kg	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248
N-Nitrosopiperidine	mg/kg	<0.248
p-Chloroaniline	mg/kg	<0.248
Pentachlorobenzene	mg/kg	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248
Pentachlorophenol	mg/kg	*<0.248*
Phenacetin	mg/kg	<0.248
Phenanthrene	mg/kg	<0.248
Phenol	mg/kg	<0.248
p-Nitroaniline	mg/kg	<0.248
Propyzamide (Kerb)	mg/kg	<0.248
Pyrene	mg/kg	<0.248
Pyridine	mg/kg	<0.248
TPHs		
Gasoline Range Organics	mg/kg	<1.00
VOCs		
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 6.5 - 7 05/12/04
1,1-Dichloropropene	mg/kg	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500
1,2,4-Trimethylbenzene	mg/kg	<0.00100
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100
1,3,5-Trimethylbenzene	mg/kg	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100
2-Butanone	mg/kg	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500
2-Chlorotoluene	mg/kg	<0.00100
4-Chlorotoluene	mg/kg	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500
Acetone	mg/kg	<0.0100
Acrylonitrile	mg/kg	*<0.00100*
Benzene	mg/kg	<0.00100
Bromobenzene	mg/kg	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*
Bromomethane	mg/kg	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100
Chlorobenzene	mg/kg	<0.00100
Chlorobromomethane	mg/kg	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100
Chloroform	mg/kg	*<0.00100*
Chloromethane	mg/kg	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100
Cymene	mg/kg	<0.00100

Attachment B-1
Soil Risk Assessment Dataset
0-10 Foot Depth Interval
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 6.5 - 7 05/12/04
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500
Ethylbenzene	mg/kg	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500
Iodomethane	mg/kg	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100
m,p-Xylene (m-Xylene)	mg/kg	<0.00100
m-Dichlorobenzene	mg/kg	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500
Methylbenzene (Toluene)	mg/kg	<0.00100
MTBE	mg/kg	<0.00100
Naphthalene	mg/kg	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100
n-Propylbenzene	mg/kg	<0.00100
o-Xylene	mg/kg	<0.00100
sec-Butylbenzene	mg/kg	<0.00100
Styrene (Monomer)	mg/kg	<0.00100
tert-Butylbenzene	mg/kg	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100
Trichloroethylene	mg/kg	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		HVW-05	HVW-07	HVW-08	HVW-09	HVW-09	HVW-10	TSA-SB-010	TSA-SB-010	TSA-SB-010
Sample Depth(ft):		20 - 22	20 - 22	20 - 22	16 - 17	19 - 20	25.5 - 26.5	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	03/25/09	03/23/09	03/23/09	03/23/09	03/23/09	03/23/09	05/10/04	05/10/04	05/10/04
Metals										
Arsenic	mg/kg	- -	- -	- -	- -	- -	- -	5.91	<2.00	5.65
Barium	mg/kg	- -	- -	- -	- -	- -	- -	31.2	41.6	77.2
Cadmium	mg/kg	- -	- -	- -	- -	- -	- -	2.46	2.01	1.67
Chromium	mg/kg	- -	- -	- -	- -	- -	- -	13.8	11.6	8.57
Lead	mg/kg	- -	- -	- -	- -	- -	- -	24.3	20.6	21.9
Mercury	mg/kg	- -	- -	- -	- -	- -	- -	<0.150	12.1	<0.150
Selenium	mg/kg	- -	- -	- -	- -	- -	- -	<1.00	<1.00	<1.00
Silver	mg/kg	- -	- -	- -	- -	- -	- -	<0.200	<0.200	<0.200
SVOCs										
1,2,4,5-Tetrachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
1-Naphthylamine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		HVW-05	HVW-07	HVW-08	HVW-09	HVW-09	HVW-10	TSA-SB-010	TSA-SB-010	TSA-SB-010
Sample Depth(ft):		20 - 22	20 - 22	20 - 22	16 - 17	19 - 20	25.5 - 26.5	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	03/25/09	03/23/09	03/23/09	03/23/09	03/23/09	03/23/09	05/10/04	05/10/04	05/10/04
4,6-Dinitro-2-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Acetophenone	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Aniline	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Anthracene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzidine	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Pyrene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzo(g,h,i)Perylene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzo(k)Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzoic Acid	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Benzyl Alcohol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Diphenylhydrazine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:	Units	HVW-05	HVW-07	HVW-08	HVW-09	HVW-09	HVW-10	TSA-SB-010	TSA-SB-010	TSA-SB-010
Sample Depth(ft):		20 - 22	20 - 22	20 - 22	16 - 17	19 - 20	25.5 - 26.5	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:		03/25/09	03/23/09	03/23/09	03/23/09	03/23/09	03/23/09	05/10/04	05/10/04	05/10/04
Fluorene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Naphthalene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	- -	- -	- -	- -	- -	- -	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Phenol	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Pyrene	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
Pyridine	mg/kg	- -	- -	- -	- -	- -	- -	<0.248	<0.248	<0.248
TPHs										
Gasoline Range Organics	mg/kg	200	5.46 B	120 [63.4]	9.43	2.28 B	2,070	<1.00	<1.00	<1.00
VOCs										
1,1,1,2-Tetrachloroethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		HVW-05	HVW-07	HVW-08	HVW-09	HVW-09	HVW-10	TSA-SB-010	TSA-SB-010	TSA-SB-010
Sample Depth(ft):		20 - 22	20 - 22	20 - 22	16 - 17	19 - 20	25.5 - 26.5	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	03/25/09	03/23/09	03/23/09	03/23/09	03/23/09	03/23/09	05/10/04	05/10/04	05/10/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	- -	- -	- -	- -	- -	- -	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	*0.0395*	*<0.0200*	*<0.100 [<0.0200]*	*0.270*	*<0.0200*	*0.539*	<0.00100	<0.00100	<0.00100
Bromobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	*<0.0200*	*<0.0200*	*<0.100 [<0.0200]*	*<0.0200*	*<0.0200*	*<0.0200*	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:	Units	HVW-05	HVW-07	HVW-08	HVW-09	HVW-09	HVW-10	TSA-SB-010	TSA-SB-010	TSA-SB-010
Sample Depth(ft):		20 - 22	20 - 22	20 - 22	16 - 17	19 - 20	25.5 - 26.5	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:		03/25/09	03/23/09	03/23/09	03/23/09	03/23/09	03/23/09	05/10/04	05/10/04	05/10/04
m,p-Xylene (m-Xylene)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	- -	- -	- -	- -	- -	- -	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	0.312	<0.0200	0.0315 J [<0.0200]	0.0269	<0.0200	1.24	<0.00100	<0.00100	<0.00100
MTBE	mg/kg	<0.0200	<0.0200	*<0.100 [<0.0200]*	<0.0200	<0.0200	<0.0200	<0.00100	<0.00100	<0.00100
Naphthalene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
o-Xylene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	- -	- -	- -	- -	- -	- -	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	- -	- -	- -	- -	- -	- -	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	- -	- -	- -	- -	- -	- -	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	*7.29*	<0.0200	*0.512 [0.316]*	0.0709	<0.0200	*13.2*	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-010	TSA-SB-010	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011
Sample Depth(ft):		21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04
Metals								
Arsenic	mg/kg	6.18	6.61 [4.99]	4.21	2.18	<2.00	2.36 [2.28]	<2.00
Barium	mg/kg	53.0	117 [105]	65.8	109	55.8	47.2 [51.5]	112
Cadmium	mg/kg	2.79	2.37 [2.56]	1.58	1.93	1.25	0.896 [0.868]	2.15
Chromium	mg/kg	18.0	14.8 [14.8]	8.52	10.1	6.25	3.88 [3.77]	11.5
Lead	mg/kg	17.0	16.2 [22.8]	15.1	17.5	13.4	3.55 [9.26]	16.7
Mercury	mg/kg	<0.150	<0.150 [<0.150]	<0.150	<0.150	<0.150	<0.150 [<0.150]	<0.150
Selenium	mg/kg	<1.00	<1.00 [<1.00]	<1.00	<1.00	<1.00	<1.00 [<1.00]	<1.00
Silver	mg/kg	<0.200	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200 [<0.200]	<0.200
SVOCs								
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1-Methylnaphthalene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
1-Naphthylamine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Chlorophenol	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Methylnaphthalene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Naphthylamine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Nitroaniline	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
2-Nitrophenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
3-Nitroaniline	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 21.5 - 22 05/10/04	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Aminobiphenyl	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
4-Nitrophenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acenaphthene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acenaphthylene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Acetophenone	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Aniline	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Anthracene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzidine	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzo(a)Anthracene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzo(a)Pyrene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzo(b)Fluoranthene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzo(g,h,i)Perylene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzo(k)Fluoranthene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzoic Acid	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Benzyl Alcohol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	<0.248 [<0.248]	<0.248
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dibenzofuran	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Diethyl Phthalate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Dimethyl Phthalate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Diphenylamine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Diphenylhydrazine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Fluoranthene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-010 21.5 - 22 05/10/04	TSA-SB-010 26.5 - 27 05/10/04	TSA-SB-011 6.5 - 7 05/10/04	TSA-SB-011 11.5 - 12 05/10/04	TSA-SB-011 16.5 - 17 05/10/04	TSA-SB-011 21.5 - 22 05/10/04	TSA-SB-011 26.5 - 27 05/10/04
Fluorene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Hexachloroethane	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
m-Dichlorobenzene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Naphthalene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Nitrobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
N-Nitrosopiperidine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
p-Chloroaniline	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pentachlorophenol	mg/kg	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*
Phenacetin	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Phenanthrene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Phenol	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
p-Nitroaniline	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Propyzamide (Kerb)	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pyrene	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
Pyridine	mg/kg	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248
TPHs								
Gasoline Range Organics	mg/kg	<1.00	<1.00 [<1.00]	<1.00	<1.00	<1.00	1.77 [1.99]	<1.00
VOCs								
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
1,2,4-Trimethylbenzene	mg/kg	<0.00100	0.0197 [0.0207]	<0.00100	<0.00100	<0.00100	0.241 [0.214]	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-010	TSA-SB-010	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011
Sample Depth(ft):		21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,3,5-Trimethylbenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	0.0529 [0.0469]	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
2-Butanone	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
2-Chlorotoluene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
4-Chlorotoluene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Acetone	mg/kg	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Benzene	mg/kg	<0.00100	*0.116 [0.112]*	<0.00100	<0.00100	<0.00100	*0.169 [0.132]*	*0.256*
Bromobenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Bromomethane	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorobenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorobromomethane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Chloroform	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Chloromethane	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Cymene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Ethylbenzene	mg/kg	<0.00100	*0.0458 [0.0472]*	<0.00100	<0.00100	<0.00100	*0.266 [0.217]*	*0.0400*
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Iodomethane	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-010	TSA-SB-010	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011	TSA-SB-011
Sample Depth(ft):		21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04
m,p-Xylene (m-Xylene)	mg/kg	0.0570	0.0946 [0.0977]	<0.00100	<0.00100	<0.00100	0.679 [0.573]	0.0691
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500
Methylbenzene (Toluene)	mg/kg	<0.00100	0.324 [0.323]	<0.00100	<0.00100	<0.00100	1.30 [1.07]	0.437
MTBE	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	0.0222
Naphthalene	mg/kg	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*0.0518 [0.0784]*	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
n-Propylbenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	0.0246 [0.0206]	<0.00100
o-Xylene	mg/kg	0.0240	0.0361 [0.0349]	<0.00100	<0.00100	<0.00100	0.430 [0.370]	0.0349
sec-Butylbenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Styrene (Monomer)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
tert-Butylbenzene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Trichloroethylene	mg/kg	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-013	TSA-SB-013	TSA-SB-013
Sample Depth(ft):		6.5 - 7	11.5 - 12	16.5 - 17	20.5 - 21	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/11/04	05/11/04	05/11/04
Metals									
Arsenic	mg/kg	2.72	*<2.00*	*<2.00*	*<2.00 [<2.00]*	*9.65*	*<2.00*	*2.93*	*<2.00*
Barium	mg/kg	92.0	110	28.1	47.5 [51.8]	89.7	19.1	45.6	13.4
Cadmium	mg/kg	1.36	1.25	*1.47*	0.693 [0.714]	*2.93*	*1.45*	*2.07*	0.667
Chromium	mg/kg	7.56	6.67	7.53	2.76 [2.77]	14.2	7.70	10.3	2.71
Lead	mg/kg	15.0	10.6	15.0	8.00 [6.25]	42.1	10.8	12.3	7.59
Mercury	mg/kg	<0.150	*<0.150*	*<0.150*	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	mg/kg	<1.00	*<1.00*	*<1.00*	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	mg/kg	<0.200	<0.200	<0.200	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-013	TSA-SB-013	TSA-SB-013
Sample Depth(ft):		6.5 - 7	11.5 - 12	16.5 - 17	20.5 - 21	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/11/04	05/11/04	05/11/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acetophenone	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Aniline	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzidine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(b)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-013	TSA-SB-013	TSA-SB-013
Sample Depth(ft):		6.5 - 7	11.5 - 12	16.5 - 17	20.5 - 21	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/11/04	05/11/04	05/11/04
Fluorene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Naphthalene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenol	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	mg/kg	<1.00	<1.00	<1.00	1.15 [1.78]	<1.00	<1.00	<1.00	<1.00
VOCs									
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	0.221 [0.175]	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-012	TSA-SB-013	TSA-SB-013	TSA-SB-013
Sample Depth(ft):		6.5 - 7	11.5 - 12	16.5 - 17	20.5 - 21	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/10/04	05/10/04	05/10/04	05/10/04	05/10/04	05/11/04	05/11/04	05/11/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	0.0472 [0.0345]	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	<0.00100	<0.00100	<0.00100	*0.0214 [0.0147]*	*0.0258*	<0.00100	<0.00100	<0.00100
Bromobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	*0.200 [0.111]*	0.0102	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-012 6.5 - 7 05/10/04	TSA-SB-012 11.5 - 12 05/10/04	TSA-SB-012 16.5 - 17 05/10/04	TSA-SB-012 20.5 - 21 05/10/04	TSA-SB-012 26.5 - 27 05/10/04	TSA-SB-013 6.5 - 7 05/11/04	TSA-SB-013 11.5 - 12 05/11/04	TSA-SB-013 16.5 - 17 05/11/04
m,p-Xylene (m-Xylene)	mg/kg	<0.00100	<0.00100	<0.00100	0.633 [0.484]	0.0278	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	<0.00100	<0.00100	<0.00100	0.124 [0.100]	0.0643	<0.00100	<0.00100	<0.00100
MTBE	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*0.0750 [0.118]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	0.0197 [0.0134]	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	mg/kg	<0.00100	<0.00100	<0.00100	0.394 [0.315]	0.0155	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-013	TSA-SB-013	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-015
Sample Depth(ft):		20 - 20.5	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
Metals									
Arsenic	mg/kg	*<2.00*	*5.16*	5.60	*<2.00*	*5.98*	*3.00*	*<2.00*	4.98
Barium	mg/kg	12.4	109	19.3	41.5	40.8	132	80.2	80.9
Cadmium	mg/kg	0.595	*2.94*	*1.42*	*1.73*	0.713	*2.08*	*3.12*	0.942
Chromium	mg/kg	2.82	13.2	6.26	8.14	2.72	11.0	5.16	8.77
Lead	mg/kg	2.63	17.6	17.8	3.62	2.01	18.1	5.90	9.56
Mercury	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	mg/kg	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	mg/kg	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-015 6.5 - 7 05/11/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	mg/kg	<0.248	*<0.248*	<0.248	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	mg/kg	<0.248	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	<0.248	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-013	TSA-SB-013	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-014	TSA-SB-015
Sample Depth(ft):		20 - 20.5	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
Fluorene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	mg/kg	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
VOCs									
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	0.142	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-015 6.5 - 7 05/11/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	0.0342	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	<0.00100	*0.0276*	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	*0.207*	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-013 20 - 20.5 05/11/04	TSA-SB-013 26.5 - 27 05/11/04	TSA-SB-014 6.5 - 7 05/11/04	TSA-SB-014 11.5 - 12 05/11/04	TSA-SB-014 16.5 - 17 05/11/04	TSA-SB-014 21.5 - 22 05/11/04	TSA-SB-014 26.5 - 27 05/11/04	TSA-SB-015 6.5 - 7 05/11/04
m,p-Xylene (m-Xylene)	mg/kg	0.456	0.0134	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	0.670	0.0570	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
MTBE	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	0.0130	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
o-Xylene	mg/kg	0.278	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
sec-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-016	TSA-SB-016	TSA-SB-016
Sample Depth(ft):		11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
Metals								
Arsenic	mg/kg	*3.19*	*10.9*	*6.29 [4.81]*	*6.18*	*3.00*	*3.23*	*1.77*
Barium	mg/kg	29.4	108	151 [32.6]	33.5	12.6	70.6	25.1
Cadmium	mg/kg	0.522	*1.62*	*1.60 [0.603]*	<0.500	0.612	0.536	<0.500
Chromium	mg/kg	4.62	12.1	15.5 [6.77]	3.99	5.39	5.00	3.14
Lead	mg/kg	6.32	22.3	19.6 [10.1]	5.82	7.37	5.86	4.32
Mercury	mg/kg	*<0.150*	*<0.150*	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	mg/kg	*<1.00*	*<1.00*	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	mg/kg	<0.200	<0.200	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200
SVOCs								
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
1-Naphthylamine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-016	TSA-SB-016	TSA-SB-016
Sample Depth(ft):		11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Acetophenone	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Aniline	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Anthracene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzidine	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-016	TSA-SB-016	TSA-SB-016
Sample Depth(ft):		11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
Fluorene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Naphthalene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Phenol	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyrene	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
Pyridine	mg/kg	<0.248	<0.248	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248
TPHs								
Gasoline Range Organics	mg/kg	9.55	<1.00	1.83 [2.19]	63.6	<1.00	<1.00	<1.00
VOCs								
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	<0.00100	<0.00100	0.110 [0.110]	10.9	<0.00100	<0.00100	0.0315

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-015	TSA-SB-016	TSA-SB-016	TSA-SB-016
Sample Depth(ft):		11.5 - 12	16.5 - 17	21.5 - 22	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17
Date Collected:	Units	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04	05/11/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	<0.00100	<0.00100	0.0249 [0.0236]	2.92	<0.00100	<0.00100	0.0155
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	<0.00100	<0.00100	*0.185 [0.229]*	*2.50*	<0.00100	<0.00100	<0.00100
Bromobenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	<0.00100	<0.00100	*0.162 [0.184]*	*8.88*	<0.00100	<0.00100	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	0.876	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-015 11.5 - 12 05/11/04	TSA-SB-015 16.5 - 17 05/11/04	TSA-SB-015 21.5 - 22 05/11/04	TSA-SB-015 26.5 - 27 05/11/04	TSA-SB-016 6.5 - 7 05/11/04	TSA-SB-016 11.5 - 12 05/11/04	TSA-SB-016 16.5 - 17 05/11/04
m,p-Xylene (m-Xylene)	mg/kg	<0.00100	<0.00100	0.340 [0.372]	*18.7*	<0.00100	<0.00100	0.0190
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	<0.00100	<0.00100	0.647 [0.801]	*19.0*	<0.00100	<0.00100	<0.00100
MTBE	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Naphthalene	mg/kg	*<0.00500*	*<0.00500*	*<0.00500 [<0.00500]*	*1.31*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	0.550	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	<0.00100	<0.00100	0.0166 [0.0170]	2.41	<0.00100	<0.00100	<0.00100
o-Xylene	mg/kg	<0.00100	<0.00100	0.160 [0.178]	*8.09*	<0.00100	<0.00100	0.0282
sec-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	0.238	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-016	TSA-SB-016	TSA-SB-017	TSA-SB-017	TSA-SB-017	TSA-SB-017	TSA-SB-017	TSA-SB-018
Sample Depth(ft):		20.5 - 21	26.5 - 27	6.5 - 7	11.5 - 12	16.5 - 17	21 - 21.5	26.5 - 27	6.5 - 7
Date Collected:	Units	05/11/04	05/11/04	05/12/04	05/12/04	05/12/04	05/12/04	05/12/04	05/12/04
Metals									
Arsenic	mg/kg	*2.30 [<2.00]*	*4.07*	*2.95*	*3.29*	*4.09*	*<2.00*	*<2.00*	*<2.00*
Barium	mg/kg	23.4 [75.4]	73.2	69.0	*4,200*	22.9	51.8	114	99.8
Cadmium	mg/kg	<0.500 [0.938]	*2.57*	0.767	*2.23*	1.20	0.597	*2.75*	*1.57*
Chromium	mg/kg	2.65 [5.02]	12.8	3.58	10.6	4.74	<2.50	13.0	7.90
Lead	mg/kg	5.08 [<1.00]	11.5	5.93	11.4	6.66	2.42	16.9	6.72
Mercury	mg/kg	*<0.150 [<0.150]*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*	*<0.150*
Selenium	mg/kg	*<1.00 [<1.00]*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*
Silver	mg/kg	<0.200 [<0.200]	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SVOCs									
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2,4-Trichlorobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,2-Dichlorobenzene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1,4-Dichlorobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
1-Chloronaphthalene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
1-Methylnaphthalene	mg/kg	7.96 [7.76]	<0.248	<0.248	<0.248	<0.248	2.83	<0.248	<0.248
1-Naphthylamine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,5-Trichlorophenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4,6-Trichlorophenol	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dichlorophenol	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dimethylphenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,4-Dinitrophenol	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,4-Dinitrotoluene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2,6-Dichlorophenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2,6-Dinitrotoluene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Chloronaphthalene (b-)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Chlorophenol	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
2-Methyl Pyridine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Methylnaphthalene	mg/kg	14.6 [14.6]	<0.248	<0.248	<0.248	<0.248	5.33	<0.248	<0.248
2-Methylphenol (o-cresol)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Naphthylamine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitroaniline	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
2-Nitrophenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3,3-Dichlorobenzidine	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
3-Methylchloranthrene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Methylphenol/4-Methylphenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
3-Nitroaniline	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04	TSA-SB-018 6.5 - 7 05/12/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Aminobiphenyl	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Bromophenyl Phenyl Ether	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chloro-3-Methylphenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Dimethylaminoazobenzene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
4-Nitrophenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
a,a-Dimethylphenethylamine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acenaphthylene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Acetophenone	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Aniline	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Anthracene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzidine	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(a)Anthracene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(a)Pyrene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Benzo(b)Fluoranthene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(g,h,i)Perylene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzo(k)Fluoranthene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzoic Acid	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Alcohol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,h)Anthracene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenz(a,j)Acridine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dibenzofuran	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diethyl Phthalate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Dimethyl Phthalate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Butyl Phthalate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Di-n-Octyl Phthalate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylamine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Diphenylhydrazine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Ethyl Methanesulfonate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Fluoranthene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04	TSA-SB-018 6.5 - 7 05/12/04
Fluorene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloro-1,3-Butadiene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Hexachlorocyclopentadiene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Hexachloroethane	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
m-Dichlorobenzene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Methyl Methanesulfonate	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Naphthalene	mg/kg	*13.4 [14.1]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*5.72*	*<0.248*	*<0.248*
Nitrobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
N-Nitrosodi-N-Propylamine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
N-Nitrosopiperidine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Chloroaniline	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorobenzene	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Pentachloronitrobenzene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pentachlorophenol	mg/kg	*<0.248 [<0.248]*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*	*<0.248*
Phenacetin	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenanthrene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Phenol	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
p-Nitroaniline	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Propyzamide (Kerb)	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyrene	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
Pyridine	mg/kg	<0.248 [<0.248]	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248	<0.248
TPHs									
Gasoline Range Organics	mg/kg	242 [1,470]	24.1	<1.00	<1.00	<1.00	103	4.09	<1.00
VOCs									
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,1-Trichloroethane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1,2-Trichloroethane	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,1-Dichloroethane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloroethylene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,1-Dichloropropene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2,3-Trichlorobenzene	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,3-Trichloropropane	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2,4-Trichlorobenzene	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
1,2,4-Trimethylbenzene	mg/kg	30.5 [30.3]	0.0790	<0.00100	<0.00100	<0.00100	49.5	0.0579	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04	TSA-SB-018 6.5 - 7 05/12/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichlorobenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,2-Dichloroethane	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
1,2-Dichloropropane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,3,5-Trimethylbenzene	mg/kg	8.19 [8.06]	0.0172	<0.00100	<0.00100	<0.00100	13.9	0.0152	<0.00100
1,3-Dichloropropane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
1,4-Dichlorobenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2,2-Dichloropropane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
2-Butanone	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
2-Chlorotoluene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Chlorotoluene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Acetone	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Acrylonitrile	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Benzene	mg/kg	*1.21 [1.23]*	*1.06*	<0.00100	<0.00100	<0.00100	*10.1*	*0.188*	<0.00100
Bromobenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Bromodichloromethane	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Bromomethane	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
Carbon Disulfide	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Carbon Tetrachloride	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorobromomethane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloroethane (Ethylchloride)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Chloroform	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Chloromethane	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,2-Dichloroethene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
cis-1,3-Dichloropropene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Cymene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/kg	*16.8 [16.8]*	*0.207*	<0.00100	<0.00100	<0.00100	*57.6*	*0.0847*	<0.00100
Hexachloro-1,3-Butadiene	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Iodomethane	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Isopropylbenzene (Cumene)	mg/kg	*2.11 [2.10]*	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-016 20.5 - 21 05/11/04	TSA-SB-016 26.5 - 27 05/11/04	TSA-SB-017 6.5 - 7 05/12/04	TSA-SB-017 11.5 - 12 05/12/04	TSA-SB-017 16.5 - 17 05/12/04	TSA-SB-017 21 - 21.5 05/12/04	TSA-SB-017 26.5 - 27 05/12/04	TSA-SB-018 6.5 - 7 05/12/04
m,p-Xylene (m-Xylene)	mg/kg	*41.8 [41.7]*	0.401	<0.00100	<0.00100	<0.00100	*126*	0.181	<0.00100
m-Dichlorobenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Methyl N-Butyl Ketone	mg/kg	<0.00500 [<0.00500]	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Methylbenzene (Toluene)	mg/kg	*21.5 [21.3]*	*2.00*	<0.00100	<0.00100	<0.00100	*177*	0.477	<0.00100
MTBE	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	*0.146*	<0.00100
Naphthalene	mg/kg	*<0.00500 [<0.00500]*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*
n-Butylbenzene	mg/kg	2.14 [2.15]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
n-Propylbenzene	mg/kg	5.80 [5.73]	0.0149	<0.00100	<0.00100	<0.00100	10.9	0.0107	<0.00100
o-Xylene	mg/kg	*18.6 [18.6]*	0.218	<0.00100	<0.00100	<0.00100	*44.3*	0.0801	<0.00100
sec-Butylbenzene	mg/kg	1.02 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Styrene (Monomer)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
tert-Butylbenzene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Tetrachloroethene	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Trans-1,2-Dichloroethene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,3-Dichloropropene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trans-1,4-Dichlorobutene	mg/kg	<0.0100 [<0.0100]	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100
Tribromomethane (Bromoform)	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Trichloroethylene	mg/kg	<0.00100 [<0.00100]	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Vinyl Chloride	mg/kg	*<0.00100 [<0.00100]*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:		TSA-SB-018	TSA-SB-018	TSA-SB-018	TSA-SB-018	TSA-SB-019	TSA-SB-019	TSA-SB-020	TSA-SB-020
Sample Depth(ft):		11.5 - 12	16.5 - 17	20.5 - 21	26.5 - 27	10 - 12	20 - 22	10 - 12	20 - 22
Date Collected:	Units	05/12/04	05/12/04	05/12/04	05/12/04	05/13/04	05/13/04	05/13/04	05/13/04
Metals									
Arsenic	mg/kg	*<2.00*	*<2.00*	*<2.00*	*3.02*	- -	- -	- -	- -
Barium	mg/kg	115	33.3	24.7	63.8	- -	- -	- -	- -
Cadmium	mg/kg	*2.03*	0.720	0.814	*1.63*	- -	- -	- -	- -
Chromium	mg/kg	9.68	3.86	2.64	8.38	- -	- -	- -	- -
Lead	mg/kg	9.51	1.65	<1.00	8.55	5.45	7.86	2.80	2.53
Mercury	mg/kg	*<0.150*	*<0.150*	*<0.150*	*<0.150*	- -	- -	- -	- -
Selenium	mg/kg	*3.31*	*1.41*	*<1.00*	*2.27*	- -	- -	- -	- -
Silver	mg/kg	<0.200	<0.200	<0.200	<0.200	- -	- -	- -	- -
SVOCs									
1,2,4,5-Tetrachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
1,2,4-Trichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
1,2-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
1,4-Dichlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
1-Chloronaphthalene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
1-Methylnaphthalene	mg/kg	<0.248	<0.248	13.0	<0.248	- -	- -	- -	- -
1-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2,4,5-Trichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2,4,6-Trichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2,4-Dichlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2,4-Dimethylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2,4-Dinitrophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2,4-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2,6-Dichlorophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2,6-Dinitrotoluene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2-Chloronaphthalene (b-)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2-Chlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
2-Methyl Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2-Methylnaphthalene	mg/kg	<0.248	<0.248	23.8	<0.248	- -	- -	- -	- -
2-Methylphenol (o-cresol)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2-Naphthylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
2-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
3,3-Dichlorobenzidine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
3-Methylchloranthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
3-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-019 10 - 12 05/13/04	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04
4,6-Dinitro-2-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Aminobiphenyl	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Chloro-3-Methylphenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Dimethylaminoazobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
4-Nitrophenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
a,a-Dimethylphenethylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Acenaphthene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Acenaphthylene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Acetophenone	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Aniline	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzidine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Benzo(a)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzo(a)Pyrene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Benzo(b)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzo(g,h,i)Perylene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzo(k)Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzoic Acid	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzyl Alcohol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Dibenz(a,h)Anthracene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Dibenz(a,j)Acridine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Dibenzofuran	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Diethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Dimethyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Di-n-Butyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Di-n-Octyl Phthalate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Diphenylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Diphenylhydrazine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Ethyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Fluoranthene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-019 10 - 12 05/13/04	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04
Fluorene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Hexachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Hexachlorocyclopentadiene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Hexachloroethane	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
m-Dichlorobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Methyl Methanesulfonate	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Naphthalene	mg/kg	*<0.248*	*<0.248*	*19.9*	*<0.248*	- -	- -	- -	- -
Nitrobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
N-Nitrosopiperidine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
p-Chloroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Pentachlorobenzene	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Pentachloronitrobenzene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Pentachlorophenol	mg/kg	*<0.248*	*<0.248*	*<0.248*	*<0.248*	- -	- -	- -	- -
Phenacetin	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Phenanthrene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Phenol	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
p-Nitroaniline	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Propyzamide (Kerb)	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Pyrene	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
Pyridine	mg/kg	<0.248	<0.248	<0.248	<0.248	- -	- -	- -	- -
TPHs									
Gasoline Range Organics	mg/kg	<1.00	<1.00	3,200	1.54	- -	- -	- -	- -
VOCs									
1,1,1,2-Tetrachloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,1,1-Trichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
1,1,2-Trichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
1,1-Dichloroethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,1-Dichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,1-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,2,3-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
1,2,3-Trichloropropane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
1,2,4-Trichlorobenzene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
1,2,4-Trimethylbenzene	mg/kg	<0.00100	<0.00100	388	0.0506	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-019 10 - 12 05/13/04	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
1,2-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,2-Dichloroethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
1,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,3,5-Trimethylbenzene	mg/kg	<0.00100	<0.00100	107	0.0135	- -	- -	- -	- -
1,3-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
1,4-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
2,2-Dichloropropane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
2-Butanone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
2-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
4-Chlorotoluene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
Acetone	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	- -	- -	- -	- -
Acrylonitrile	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Benzene	mg/kg	<0.00100	<0.00100	<0.00100	*0.0193*	- -	- -	- -	- -
Bromobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Bromodichloromethane	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Bromomethane	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -	- -	- -	- -
Carbon Disulfide	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Carbon Tetrachloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
CFC-12 (Dichlorodifluoromethane)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Chlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Chlorobromomethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane)	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Chloroethane (Ethylchloride)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Chloroform	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Chloromethane	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
cis-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
cis-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Cymene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
Ethylbenzene	mg/kg	<0.00100	<0.00100	*149*	*0.0220*	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
Iodomethane	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
Isopropylbenzene (Cumene)	mg/kg	<0.00100	<0.00100	*30.9*	<0.00100	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-018 11.5 - 12 05/12/04	TSA-SB-018 16.5 - 17 05/12/04	TSA-SB-018 20.5 - 21 05/12/04	TSA-SB-018 26.5 - 27 05/12/04	TSA-SB-019 10 - 12 05/13/04	TSA-SB-019 20 - 22 05/13/04	TSA-SB-020 10 - 12 05/13/04	TSA-SB-020 20 - 22 05/13/04
m,p-Xylene (m-Xylene)	mg/kg	<0.00100	<0.00100	*340*	0.0530	- -	- -	- -	- -
m-Dichlorobenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Methyl N-Butyl Ketone	mg/kg	<0.00500	<0.00500	<0.00500	<0.00500	- -	- -	- -	- -
Methylbenzene (Toluene)	mg/kg	<0.00100	<0.00100	<0.00100	0.0308	- -	- -	- -	- -
MTBE	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Naphthalene	mg/kg	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	- -	- -	- -	- -
n-Butylbenzene	mg/kg	<0.00100	<0.00100	19.6	<0.00100	- -	- -	- -	- -
n-Propylbenzene	mg/kg	<0.00100	<0.00100	92.0	<0.00100	- -	- -	- -	- -
o-Xylene	mg/kg	<0.00100	<0.00100	*109*	0.0206	- -	- -	- -	- -
sec-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Styrene (Monomer)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
tert-Butylbenzene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Tetrachloroethene	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Trans-1,2-Dichloroethene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Trans-1,3-Dichloropropene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	mg/kg	<0.0100	<0.0100	<0.0100	<0.0100	- -	- -	- -	- -
Tribromomethane (Bromoform)	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Trichloroethylene	mg/kg	<0.00100	<0.00100	<0.00100	<0.00100	- -	- -	- -	- -
Vinyl Chloride	mg/kg	*<0.00100*	*<0.00100*	*<0.00100*	*<0.00100*	- -	- -	- -	- -
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04
Metals							
Arsenic	mg/kg	- -	- -	- -	- -	- -	- -
Barium	mg/kg	- -	- -	- -	- -	- -	- -
Cadmium	mg/kg	- -	- -	- -	- -	- -	- -
Chromium	mg/kg	- -	- -	- -	- -	- -	- -
Lead	mg/kg	2.16	5.18	1.66	3.96	2.87	3.05
Mercury	mg/kg	- -	- -	- -	- -	- -	- -
Selenium	mg/kg	- -	- -	- -	- -	- -	- -
Silver	mg/kg	- -	- -	- -	- -	- -	- -
SVOCs							
1,2,4,5-Tetrachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Benzphenanthracene (Chrysene)	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1-Chloronaphthalene	mg/kg	- -	- -	- -	- -	- -	- -
1-Methylnaphthalene	mg/kg	- -	- -	- -	- -	- -	- -
1-Naphthylamine	mg/kg	- -	- -	- -	- -	- -	- -
2,4,5-Trichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
2,4,6-Trichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dimethylphenol	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrophenol	mg/kg	- -	- -	- -	- -	- -	- -
2,4-Dinitrotoluene	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dichlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
2,6-Dinitrotoluene	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloronaphthalene (b-)	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
2-Methyl Pyridine	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylnaphthalene	mg/kg	- -	- -	- -	- -	- -	- -
2-Methylphenol (o-cresol)	mg/kg	- -	- -	- -	- -	- -	- -
2-Naphthylamine	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -
2-Nitrophenol	mg/kg	- -	- -	- -	- -	- -	- -
3,3-Dichlorobenzidine	mg/kg	- -	- -	- -	- -	- -	- -
3,5,5-Trimethyl-2-Cyclohexene-1-One (Isophorone)	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylchloranthrene	mg/kg	- -	- -	- -	- -	- -	- -
3-Methylphenol/4-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -
3-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04
4,6-Dinitro-2-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -
4-Aminobiphenyl	mg/kg	- -	- -	- -	- -	- -	- -
4-Bromophenyl Phenyl Ether	mg/kg	- -	- -	- -	- -	- -	- -
4-Chloro-3-Methylphenol	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorophenyl Phenyl Ether	mg/kg	- -	- -	- -	- -	- -	- -
4-Dimethylaminoazobenzene	mg/kg	- -	- -	- -	- -	- -	- -
4-Nitrophenol	mg/kg	- -	- -	- -	- -	- -	- -
7,12-Dimethylbenz(a)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -
a,a-Dimethylphenethylamine	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthene	mg/kg	- -	- -	- -	- -	- -	- -
Acenaphthylene	mg/kg	- -	- -	- -	- -	- -	- -
Acetophenone	mg/kg	- -	- -	- -	- -	- -	- -
Aniline	mg/kg	- -	- -	- -	- -	- -	- -
Anthracene	mg/kg	- -	- -	- -	- -	- -	- -
Benzidine	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(a)Pyrene	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(b)Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(g,h,i)Perylene	mg/kg	- -	- -	- -	- -	- -	- -
Benzo(k)Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -
Benzoic Acid	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Alcohol	mg/kg	- -	- -	- -	- -	- -	- -
Benzyl Butyl Phthalate (Butyl Benzyl Phthalate)	mg/kg	- -	- -	- -	- -	- -	- -
Bis (2-Chloroethoxy) Methane	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroethyl) Ether	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Chloroisopropyl)Ether	mg/kg	- -	- -	- -	- -	- -	- -
Bis(2-Ethylhexyl)Phthalate (Di[2-ethylhexyl] phthalate)	mg/kg	- -	- -	- -	- -	- -	- -
Chlorophenols (2,3,4,6-Tetrachlorophenol)	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,h)Anthracene	mg/kg	- -	- -	- -	- -	- -	- -
Dibenz(a,j)Acridine	mg/kg	- -	- -	- -	- -	- -	- -
Dibenzofuran	mg/kg	- -	- -	- -	- -	- -	- -
Diethyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -
Dimethyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Butyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -
Di-n-Octyl Phthalate	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylamine	mg/kg	- -	- -	- -	- -	- -	- -
Diphenylhydrazine	mg/kg	- -	- -	- -	- -	- -	- -
Ethyl Methanesulfonate	mg/kg	- -	- -	- -	- -	- -	- -
Fluoranthene	mg/kg	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04
Fluorene	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Hexachlorocyclopentadiene	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloroethane	mg/kg	- -	- -	- -	- -	- -	- -
Indeno(1,2,3-cd)Pyrene	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Methanamine, N-Methyl-N-Nitroso	mg/kg	- -	- -	- -	- -	- -	- -
Methyl Methanesulfonate	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	mg/kg	- -	- -	- -	- -	- -	- -
Nitrobenzene	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Butylamine	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosodi-N-Propylamine	mg/kg	- -	- -	- -	- -	- -	- -
N-Nitrosopiperidine	mg/kg	- -	- -	- -	- -	- -	- -
p-Chloroaniline	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Pentachloronitrobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Pentachlorophenol	mg/kg	- -	- -	- -	- -	- -	- -
Phenacetin	mg/kg	- -	- -	- -	- -	- -	- -
Phenanthrene	mg/kg	- -	- -	- -	- -	- -	- -
Phenol	mg/kg	- -	- -	- -	- -	- -	- -
p-Nitroaniline	mg/kg	- -	- -	- -	- -	- -	- -
Propyzamide (Kerb)	mg/kg	- -	- -	- -	- -	- -	- -
Pyrene	mg/kg	- -	- -	- -	- -	- -	- -
Pyridine	mg/kg	- -	- -	- -	- -	- -	- -
TPHs							
Gasoline Range Organics	mg/kg	- -	- -	- -	- -	- -	- -
VOCs							
1,1,1,2-Tetrachloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,1,1-Trichloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2,2-Tetrachloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,1,2-Trichloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloroethylene	mg/kg	- -	- -	- -	- -	- -	- -
1,1-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,2,3-Trichloropropane	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,2,4-Trimethylbenzene	mg/kg	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID:	Units	TSA-SB-021	TSA-SB-021	TSA-SB-022	TSA-SB-022	TSA-SB-023	TSA-SB-023
Sample Depth(ft):		10 - 12	20 - 22	10 - 12	20 - 22	10 - 12	20 - 22
Date Collected:		05/14/04	05/14/04	05/13/04	05/13/04	05/14/04	05/14/04
1,2-Dibromo-3-Chloropropane (DBCP)	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dibromoethane (ethylene dibromide)	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloroethane	mg/kg	- -	- -	- -	- -	- -	- -
1,2-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -
1,3,5-Trimethylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
1,3-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -
1,4-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
2,2-Dichloropropane	mg/kg	- -	- -	- -	- -	- -	- -
2-Butanone	mg/kg	- -	- -	- -	- -	- -	- -
2-Chloroethyl Vinyl Ether	mg/kg	- -	- -	- -	- -	- -	- -
2-Chlorotoluene	mg/kg	- -	- -	- -	- -	- -	- -
4-Chlorotoluene	mg/kg	- -	- -	- -	- -	- -	- -
4-Methyl-2-Pentanone(MIBK)	mg/kg	- -	- -	- -	- -	- -	- -
Acetone	mg/kg	- -	- -	- -	- -	- -	- -
Acrylonitrile	mg/kg	- -	- -	- -	- -	- -	- -
Benzene	mg/kg	- -	- -	- -	- -	- -	- -
Bromobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Bromodichloromethane	mg/kg	- -	- -	- -	- -	- -	- -
Bromomethane	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Disulfide	mg/kg	- -	- -	- -	- -	- -	- -
Carbon Tetrachloride	mg/kg	- -	- -	- -	- -	- -	- -
CFC-11 (Trichlorofluoromethane)	mg/kg	- -	- -	- -	- -	- -	- -
CFC-12 (Dichlorodifluoromethane)	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Chlorobromomethane	mg/kg	- -	- -	- -	- -	- -	- -
Chlorodibromomethane (Dibromochloromethane)	mg/kg	- -	- -	- -	- -	- -	- -
Chloroethane (Ethylchloride)	mg/kg	- -	- -	- -	- -	- -	- -
Chloroform	mg/kg	- -	- -	- -	- -	- -	- -
Chloromethane	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,2-Dichloroethene	mg/kg	- -	- -	- -	- -	- -	- -
cis-1,3-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -
Cymene	mg/kg	- -	- -	- -	- -	- -	- -
Dibromomethane (Methylene Dibromide)	mg/kg	- -	- -	- -	- -	- -	- -
Dichloromethane (Methylene Chloride)	mg/kg	- -	- -	- -	- -	- -	- -
Ethylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
Hexachloro-1,3-Butadiene	mg/kg	- -	- -	- -	- -	- -	- -
Iodomethane	mg/kg	- -	- -	- -	- -	- -	- -
Isopropylbenzene (Cumene)	mg/kg	- -	- -	- -	- -	- -	- -

Attachment B-2
Soil Risk Assessment Dataset
Soil All
SWMU 197
White Sand Missile Range, New Mexico

Location ID: Sample Depth(ft): Date Collected:	Units	TSA-SB-021 10 - 12 05/14/04	TSA-SB-021 20 - 22 05/14/04	TSA-SB-022 10 - 12 05/13/04	TSA-SB-022 20 - 22 05/13/04	TSA-SB-023 10 - 12 05/14/04	TSA-SB-023 20 - 22 05/14/04
m,p-Xylene (m-Xylene)	mg/kg	- -	- -	- -	- -	- -	- -
m-Dichlorobenzene	mg/kg	- -	- -	- -	- -	- -	- -
Methyl N-Butyl Ketone	mg/kg	- -	- -	- -	- -	- -	- -
Methylbenzene (Toluene)	mg/kg	- -	- -	- -	- -	- -	- -
MTBE	mg/kg	- -	- -	- -	- -	- -	- -
Naphthalene	mg/kg	- -	- -	- -	- -	- -	- -
n-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
n-Propylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
o-Xylene	mg/kg	- -	- -	- -	- -	- -	- -
sec-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
Styrene (Monomer)	mg/kg	- -	- -	- -	- -	- -	- -
tert-Butylbenzene	mg/kg	- -	- -	- -	- -	- -	- -
Tetrachloroethene	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,2-Dichloroethene	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,3-Dichloropropene	mg/kg	- -	- -	- -	- -	- -	- -
Trans-1,4-Dichlorobutene	mg/kg	- -	- -	- -	- -	- -	- -
Tribromomethane (Bromoform)	mg/kg	- -	- -	- -	- -	- -	- -
Trichloroethylene	mg/kg	- -	- -	- -	- -	- -	- -
Vinyl Chloride	mg/kg	- -	- -	- -	- -	- -	- -
Xylenes (total xylenes)	mg/kg	- -	- -	- -	- -	- -	- -

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 02/24/09	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09
Metals									
Divalent Manganese	ug/L	<1,000 M	- -	1,200	- -	1,300 JM	- -	- -	- -
Feric Iron	ug/L	<1,000 M	- -	<1,000 M	- -	<2,000 M	- -	- -	- -
Ferrous Iron	ug/L	700 J	- -	<1,000 M	- -	<2,000 M	- -	- -	- -
Manganese	ug/L	430 L	- -	1,200 L	- -	1,000 L	- -	- -	- -
Other									
Carbon Dioxide	ug/L	25,000	- -	35,000	- -	37,000	- -	- -	- -
Conductivity	mS/cm	36.5	- -	10.6	- -	14.0	- -	- -	- -
Dissolved Oxygen	ug/L	680	- -	660	- -	660	- -	- -	- -
Methane	ug/L	1.20	- -	0.290	- -	0.360	- -	- -	- -
Nitrate	ug/L	52,200	- -	<2,500	- -	221,000	- -	- -	- -
Oxidation Reduction Potential	millivolts	15.7	- -	22.4	- -	10.2	- -	- -	- -
pH	pH Units	7.40	- -	7.38	- -	7.19	- -	- -	- -
Sulfate	ug/L	10,700,000	- -	6,800,000	- -	4,420,000	- -	- -	- -
Temperature	deg c	19.4	- -	21.9	- -	24.3	- -	- -	- -
Total Dissolved Solids	ug/L	12,700,000	- -	7,440,000	- -	8,440,000	- -	5,170,000 [5,090,000]	- -
Total Phosphorous	ug/L	<25.0	- -	<25.0	- -	<25.0	- -	- -	- -
Turbidity	NTU	2.31	- -	1.54	- -	1.56	- -	- -	- -
TPHs									
Gasoline Range Organics	ug/L	- -	53,400	- -	118,000	- -	13,300	155,000 [142,000]	142,000
VOCs									
1,1,1,2-Tetrachloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1,1-Trichloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1,2,2-Tetrachloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1,2-Trichloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1-Dichloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1-Dichloroethylene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,1-Dichloropropene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,2,3-Trichlorobenzene	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
1,2,3-Trichloropropane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,2,4-Trichlorobenzene	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
1,2,4-Trimethylbenzene	ug/L	41.1	1,310	3,860	2,960	194	613	1,220 [1,410]	2,180
1,2-Dibromo-3-Chloropropane (DBCP)	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
1,2-Dibromoethane (ethylene dibromide)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,2-Dichlorobenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,2-Dichloroethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	777 [<200]	- -
1,2-Dichloropropane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,3,5-Trimethylbenzene	ug/L	<20.0	299	864	646	44.9	135	262 [316]	428 J

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 02/24/09	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09
1,3-Dichloropropane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
1,4-Dichlorobenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
2,2-Dichloropropane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
2-Butanone	ug/L	<100	- -	<1,000	- -	<50.0	- -	418 J [487 J]	- -
2-Chloroethyl Vinyl Ether	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
2-Chlorotoluene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
2-Phenylbutane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
4-Chlorotoluene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
4-Methyl-2-Pentanone(MIBK)	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Acetone	ug/L	<200	- -	<2,000	- -	<100	- -	1,870 JB [1,830 JB]	- -
Acrylonitrile	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Benzene	ug/L	1,580	8,510	8,120	9,920	649	1,800	31,000 [30,300]	23,400
Bromobenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Bromodichloromethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Bromomethane	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Carbon Disulfide	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Carbon Tetrachloride	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
CFC-11 (Trichlorofluoromethane)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
CFC-12 (Dichlorodifluoromethane)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chlorobenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chlorobromomethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chlorodibromomethane (Dibromochloromethane)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chloroethane (Ethylchloride)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chloroform	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Chloromethane	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
cis-1,2-Dichloroethene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
cis-1,3-Dichloropropene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Cymene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Dibromomethane (Methylene Dibromide)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Dichloromethane (Methylene Chloride)	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Ethylbenzene	ug/L	57.3	69.5	6,280	4,460	20.2	35.0 J	4,640 [4,760]	6,430
Hexachloro-1,3-Butadiene	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Iodomethane	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Isopropylbenzene (Cumene)	ug/L	<20.0	- -	319	- -	16.2	- -	108 J [132 J]	- -
m,p-Xylene (m-Xylene)	ug/L	352	5,180	17,100	11,800	779	3,100	9,310 [9,590]	11,800
m-Dichlorobenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Methyl N-Butyl Ketone	ug/L	<100	- -	<1,000	- -	<50.0	- -	<1,000 [<1,000]	- -
Methylbenzene (Toluene)	ug/L	2,190	19,000	16,400	16,700	35.6	719	55,100 [54,000]	54,900
MTBE	ug/L	690	1,180	825	1,040	111	128	<200 [<200]	260 J

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-02 02/25/09	HVW-02 09/29/09	HVW-03 02/24/09	HVW-03 09/23/09	HVW-04 02/24/09	HVW-04 09/28/09	HVW-05 05/12/09	HVW-05 09/24/09
Naphthalene	ug/L	<100	425	<1,000	473 J	<50.0	115 J	209 J [285 J]	377 J
n-Butylbenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
n-Propylbenzene	ug/L	<20.0	133	589	452	20.3	66.7 J	199 J [243]	344 J
o-Xylene	ug/L	214	2,740	7,760	5,580	343	1,480	4,430 [4,550]	6,080
Styrene (Monomer)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
tert-Butylbenzene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Tetrachloroethene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Trans-1,2-Dichloroethene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Trans-1,3-Dichloropropene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Trans-1,4-Dichlorobutene	ug/L	<200	- -	<2,000	- -	<100	- -	<2,000 [<2,000]	- -
Tribromomethane (Bromoform)	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Trichloroethylene	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -
Vinyl Chloride	ug/L	<20.0	- -	<200	- -	<10.0	- -	<200 [<200]	- -

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-06 05/11/09	HVW-06 09/28/09	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Metals							
Divalent Manganese	ug/L	- -	- -	- -	- -	- -	- -
Feric Iron	ug/L	- -	- -	- -	- -	- -	- -
Ferrous Iron	ug/L	- -	- -	- -	- -	- -	- -
Manganese	ug/L	- -	- -	- -	- -	- -	- -
Other							
Carbon Dioxide	ug/L	- -	- -	- -	- -	- -	- -
Conductivity	mS/cm	- -	- -	- -	- -	- -	- -
Dissolved Oxygen	ug/L	- -	- -	- -	- -	- -	- -
Methane	ug/L	- -	- -	- -	- -	- -	- -
Nitrate	ug/L	- -	- -	- -	- -	- -	- -
Oxidation Reduction Potential	millivolts	- -	- -	- -	- -	- -	- -
pH	pH Units	- -	- -	- -	- -	- -	- -
Sulfate	ug/L	- -	- -	- -	- -	- -	- -
Temperature	deg c	- -	- -	- -	- -	- -	- -
Total Dissolved Solids	ug/L	6,060,000	- -	3,330,000	- -	4,820,000	- -
Total Phosphorous	ug/L	- -	- -	- -	- -	- -	- -
Turbidity	NTU	- -	- -	- -	- -	- -	- -
TPHs							
Gasoline Range Organics	ug/L	187 J	182 J	148,000	123,000	123,000	254,000
VOCs							
1,1,1,2-Tetrachloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,1,1-Trichloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,1,2,2-Tetrachloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,1,2-Trichloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,1-Dichloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,1-Dichloroethylene	ug/L	<1.00	- -	<100	- -	<500	- -
1,1-Dichloropropene	ug/L	<1.00	- -	<100	- -	<500	- -
1,2,3-Trichlorobenzene	ug/L	<5.00	- -	<500	- -	<2,500	- -
1,2,3-Trichloropropane	ug/L	<1.00	- -	<100	- -	<500	- -
1,2,4-Trichlorobenzene	ug/L	<5.00	- -	<500	- -	<2,500	- -
1,2,4-Trimethylbenzene	ug/L	6.60	6.51	2,290	10,400	3,610	6,370
1,2-Dibromo-3-Chloropropane (DBCP)	ug/L	<5.00	- -	<500	- -	<2,500	- -
1,2-Dibromoethane (ethylene dibromide)	ug/L	<1.00	- -	<100	- -	<500	- -
1,2-Dichlorobenzene	ug/L	<1.00	- -	<100	- -	<500	- -
1,2-Dichloroethane	ug/L	<1.00	- -	<100	- -	<500	- -
1,2-Dichloropropane	ug/L	<1.00	- -	<100	- -	<500	- -
1,3,5-Trimethylbenzene	ug/L	2.68	2.93	496	2,690	870	1,580

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-06 05/11/09	HVW-06 09/28/09	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
1,3-Dichloropropane	ug/L	<1.00	- -	<100	- -	<500	- -
1,4-Dichlorobenzene	ug/L	<1.00	- -	<100	- -	<500	- -
2,2-Dichloropropane	ug/L	<1.00	- -	<100	- -	<500	- -
2-Butanone	ug/L	<5.00	- -	638	- -	6,370	- -
2-Chloroethyl Vinyl Ether	ug/L	<5.00	- -	<500	- -	<2,500	- -
2-Chlorotoluene	ug/L	<1.00	- -	<100	- -	<500	- -
2-Phenylbutane	ug/L	0.460 J	- -	<100	- -	<500	- -
4-Chlorotoluene	ug/L	<1.00	- -	<100	- -	<500	- -
4-Methyl-2-Pentanone(MIBK)	ug/L	<5.00	- -	<500	- -	<2,500	- -
Acetone	ug/L	<10.0	- -	1,960 B	- -	8,440 B	- -
Acrylonitrile	ug/L	<1.00	- -	<100	- -	<500	- -
Benzene	ug/L	9.90	3.06	7,320	11,600	29,100	26,500
Bromobenzene	ug/L	<1.00	- -	<100	- -	<500	- -
Bromodichloromethane	ug/L	1.61	- -	<100	- -	<500	- -
Bromomethane	ug/L	<5.00	- -	<500	- -	<2,500	- -
Carbon Disulfide	ug/L	<1.00	- -	<100	- -	<500	- -
Carbon Tetrachloride	ug/L	<1.00	- -	<100	- -	<500	- -
CFC-11 (Trichlorofluoromethane)	ug/L	<1.00	- -	<100	- -	<500	- -
CFC-12 (Dichlorodifluoromethane)	ug/L	<1.00	- -	<100	- -	<500	- -
Chlorobenzene	ug/L	<1.00	- -	<100	- -	<500	- -
Chlorobromomethane	ug/L	<1.00	- -	<100	- -	<500	- -
Chlorodibromomethane (Dibromochloromethane)	ug/L	<1.00	- -	<100	- -	<500	- -
Chloroethane (Ethylchloride)	ug/L	<1.00	- -	<100	- -	<500	- -
Chloroform	ug/L	1.76	- -	<100	- -	<500	- -
Chloromethane	ug/L	<1.00	- -	<100	- -	<500	- -
cis-1,2-Dichloroethene	ug/L	<1.00	- -	<100	- -	<500	- -
cis-1,3-Dichloropropene	ug/L	<1.00	- -	<100	- -	<500	- -
Cymene	ug/L	<1.00	- -	<100	- -	<500	- -
Dibromomethane (Methylene Dibromide)	ug/L	<1.00	- -	<100	- -	<500	- -
Dichloromethane (Methylene Chloride)	ug/L	<5.00	- -	<500	- -	312 J	- -
Ethylbenzene	ug/L	0.390 J	0.520 J	5,590	9,800	6,660	9,380
Hexachloro-1,3-Butadiene	ug/L	<5.00	- -	<500	- -	<2,500	- -
Iodomethane	ug/L	<5.00	- -	<500	- -	<2,500	- -
Isopropylbenzene (Cumene)	ug/L	0.980 J	- -	198	- -	325 J	- -
m,p-Xylene (m-Xylene)	ug/L	10.4	10.0	12,000	22,800	13,800	19,600
m-Dichlorobenzene	ug/L	<1.00	- -	<100	- -	<500	- -
Methyl N-Butyl Ketone	ug/L	<5.00	- -	<500	- -	<2,500	- -
Methylbenzene (Toluene)	ug/L	2.98	3.99	33,200	42,100	57,200	66,000
MTBE	ug/L	<1.00	<1.00	<100	1,240	<500	89.1 J

Attachment B-3
Saturated Vadose Zone Soil Water Risk Assessment Dataset
SWMU 197
White Sand Missile Range, New Mexico

Location ID: / Date Collected:	Units	HVW-06 05/11/09	HVW-06 09/28/09	HVW-08 05/12/09	HVW-08 09/24/09	HVW-10 05/12/09	HVW-10 09/24/09
Naphthalene	ug/L	<5.00	0.610 J	391 J	1,300	452 J	952 J
n-Butylbenzene	ug/L	0.520 J	- -	<100	- -	<500	- -
n-Propylbenzene	ug/L	1.85	2.18	383	2,180	709	1,300
o-Xylene	ug/L	5.01	4.98	5,230	9,790	6,300	8,750
Styrene (Monomer)	ug/L	<1.00	- -	<100	- -	<500	- -
tert-Butylbenzene	ug/L	<1.00	- -	<100	- -	<500	- -
Tetrachloroethene	ug/L	<1.00	- -	<100	- -	<500	- -
Trans-1,2-Dichloroethene	ug/L	<1.00	- -	<100	- -	<500	- -
Trans-1,3-Dichloropropene	ug/L	<1.00	- -	<100	- -	<500	- -
Trans-1,4-Dichlorobutene	ug/L	<10.0	- -	<1,000	- -	<5,000	- -
Tribromomethane (Bromoform)	ug/L	<1.00	- -	<100	- -	<500	- -
Trichloroethylene	ug/L	<1.00	- -	<100	- -	<500	- -
Vinyl Chloride	ug/L	<1.00	- -	<100	- -	<500	- -

Notes for Attachments B.1-3
Risk Assessment Datasets
SWMU 197
White Sands Missile Range, New Mexico

Notes:

< =	Result is non-detect
[ ] =	Indicates field duplicate result
ft =	Foot
mg/kg =	Milligrams per kilogram
mS/cm =	MicroSiemens per centimeter
NA =	Not available
NTU =	Nephelometric Turbidity Units
SVOC =	Semivolatile Organic Compound
TPH =	Total petroleum hydrocarbon
µg/L =	Micrograms per liter
VOC =	Volatile Organic Compound

ARCADIS

Attachment C

Ecological Characterization Worksheets

I. SITE DESCRIPTION

Site Name TSA

Site Location HELSTF, WSMR

The land use on the site is:		The land around the site is	
Urban	Agricultural	Urban	Agricultural
Rural	Recreational	Rural	Recreational
Residential	Undisturbed	Residential	Undisturbed
Industrial (light heavy)		Industrial (light heavy)	

Any movement of soil at site? (yes no) Other:

Agricultural Use Mining Natural Events

Heavy Equipment Erosion

Potentially sensitive environmental areas exist adjacent to or in proximity to the site? (yes) (no)

What type of facility is located at the site?

Active facility (HELSTF)

What are the suspected contaminants at the site?

unknown

Potential routes of off-site migration of contaminants

Swales Drainage ditches Runoff Other:

Depressions Windblown particulates Traffic

Where does surface runoff discharge?

Surface water Groundwater Sewer

Collection impoundment Other

Navigable water body present or near site? (yes) (no)

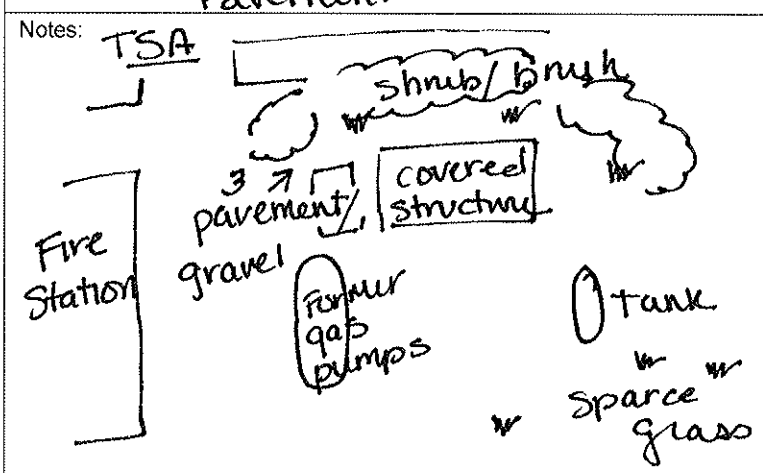
Evidence of flooding? None

Buttressing Water marks Debris line Mud cracks

Indications of Human Disturbance:

Pavement

Notes:



II. TERRESTRIAL HABITAT CHECKLIST

IIA. WOODED

What percentage of the site is wooded? 0%

What is the dominant type of vegetation in the wooded area? PHOTOGRAPH (Evergreen Deciduous Mixed)

Dominant Plant(s):

Dominant Tree Size DBH: 0-6 in. 6-12 in. > 12 in

Type of Understory PHOTOGRAPH:

Animals present:

Time spent identifying flora/fauna:

IIB. SHRUB/SCRUB

What percentage of the site is covered in shrub/scrub? 0%

What is the dominant type of vegetation? PHOTOGRAPH (Evergreen Deciduous Mixed)

Dominant Plant(s):
Shrubs located swest of slumu : snakeweed
yucca, 4wing saltbush

Approximate Height: 0-2 ft. 2-5 ft > 5 ft.

Density of scrub/shrub vegetation? Dense Patchy Sparse

Animals present:
song birds

Time spent identifying flora/fauna:

IIC. OPEN FIELD

What percentage of the site is an open field?

Prairie/plains Old field Savannah Other:

What is the dominant type of vegetation? PHOTOGRAPH (Evergreen Deciduous Mixed)

Dominant Plant(s):
grass

Approximate Height: 0-0.5 ft. 0.5-2 ft > 2 ft.

Density of vegetation? Dense Patchy Sparse

Animals present:

Time spent identifying flora/fauna:

IID. MISCELLANEOUS

Other Terrestrial Habitats:

Flora:

Fauna:

Time spent identifying flora/fauna:

ARCADIS

Attachment D

ProUCL output

Attachment D - ProUCL Output
0-10 foot Depth Interval, SWMU 197
White Sands Missile Range, New Mexico

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Result (arsenic)

General Statistics

Number of Valid Data	9	Number of Detected Data	7
Number of Distinct Detected Data	7	Number of Non-Detect Data	2
		Percent Non-Detects	22.22%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.72	Minimum Detected	1.001
Maximum Detected	5.91	Maximum Detected	1.777
Mean of Detected	4.196	Mean of Detected	1.389
SD of Detected	1.335	SD of Detected	0.327
Minimum Non-Detect	2	Minimum Non-Detect	0.693
Maximum Non-Detect	2	Maximum Non-Detect	0.693

Warning: There are only 7 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.881	Shapiro Wilk Test Statistic	0.876
5% Shapiro Wilk Critical Value	0.803	5% Shapiro Wilk Critical Value	0.803
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.486	Mean	1.08
SD	1.822	SD	0.675
95% DL/2 (t) UCL	4.615	95% H-Stat (DL/2) UCL	6.838
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	3.491	Mean in Log Scale	1.211
SD	1.753	SD in Log Scale	0.456
95% MLE (t) UCL	4.578	Mean in Original Scale	3.665
95% MLE (Tiku) UCL	4.628	SD in Original Scale	1.566
		95% t UCL	4.636

95% Percentile Bootstrap UCL	4.495
95% BCA Bootstrap UCL	4.507

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	6.536
Theta Star	0.642
nu star	91.51
A-D Test Statistic	0.475
5% A-D Critical Value	0.708
K-S Test Statistic	0.708
5% K-S Critical Value	0.312

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	2.196
Maximum	5.91
Mean	3.838
Median	3
SD	1.37
k star	6.136
Theta star	0.626
Nu star	110.4
AppChi2	87.19
95% Gamma Approximate UCL	4.862
95% Adjusted Gamma UCL	5.117

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	3.868
SD	1.25
SE of Mean	0.45
95% KM (t) UCL	4.705
95% KM (z) UCL	4.608
95% KM (jackknife) UCL	4.674
95% KM (bootstrap t) UCL	4.902
95% KM (BCA) UCL	4.648
95% KM (Percentile Bootstrap) UCL	4.722
95% KM (Chebyshev) UCL	5.83
97.5% KM (Chebyshev) UCL	6.679
99% KM (Chebyshev) UCL	8.347

Potential UCLs to Use

95% KM (t) UCL	4.705
95% KM (Percentile Bootstrap) UCL	4.722

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (barium)

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9

Raw Statistics

Minimum	12.6
Maximum	99.8
Mean	54.41
Median	65.8
SD	34.07
Coefficient of Variation	0.626
Skewness	-0.0127

Log-transformed Statistics

Minimum of Log Data	2.534
Maximum of Log Data	4.603
Mean of log Data	3.758
SD of log Data	0.791

Attachment D - ProUCL Output
0-10 foot Depth Interval, SWMU 197
White Sands Missile Range, New Mexico

Warning: There are only 9 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.887
Shapiro Wilk Critical Value	0.829

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.871
Shapiro Wilk Critical Value	0.829

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	75.53

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	73.04
95% Modified-t UCL (Johnson-1978)	75.52

Assuming Lognormal Distribution

95% H-UCL	128
95% Chebyshev (MVUE) UCL	122.6
97.5% Chebyshev (MVUE) UCL	151.3
99% Chebyshev (MVUE) UCL	207.7

Gamma Distribution Test

k star (bias corrected)	1.574
Theta Star	34.58
MLE of Mean	54.41
MLE of Standard Deviation	43.38
nu star	28.32
Approximate Chi Square Value (.05)	17.18
Adjusted Level of Significance	0.0231
Adjusted Chi Square Value	15.38
Anderson-Darling Test Statistic	0.569
Anderson-Darling 5% Critical Value	0.729
Kolmogorov-Smirnov Test Statistic	0.252
Kolmogorov-Smirnov 5% Critical Value	0.282

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	89.7
95% Adjusted Gamma UCL	100.2

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	73.09
95% Jackknife UCL	75.53
95% Standard Bootstrap UCL	71.73
95% Bootstrap-t UCL	75.83
95% Hall's Bootstrap UCL	69.06
95% Percentile Bootstrap UCL	71.83
95% BCA Bootstrap UCL	71.37
95% Chebyshev(Mean, Sd) UCL	103.9
97.5% Chebyshev(Mean, Sd) UCL	125.3
99% Chebyshev(Mean, Sd) UCL	167.4

Potential UCL to Use

Use 95% Student's-t UCL 75.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (cadmium)

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9

Attachment D - ProUCL Output
0-10 foot Depth Interval, SWMU 197
White Sands Missile Range, New Mexico

Raw Statistics

Minimum	0.612
Maximum	2.46
Mean	1.351
Median	1.42
SD	0.548
Coefficient of Variation	0.405
Skewness	0.7

Log-transformed Statistics

Minimum of Log Data	-0.491
Maximum of Log Data	0.9
Mean of log Data	0.225
SD of log Data	0.424

Warning: There are only 9 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.918
Shapiro Wilk Critical Value	0.829

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.936
Shapiro Wilk Critical Value	0.829

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	1.691

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	1.697
95% Modified-t UCL (Johnson-1978)	1.698

Assuming Lognormal Distribution

95% H-UCL	1.894
95% Chebyshev (MVUE) UCL	2.2
97.5% Chebyshev (MVUE) UCL	2.565
99% Chebyshev (MVUE) UCL	3.282

Gamma Distribution Test

k star (bias corrected)	4.551
Theta Star	0.297
MLE of Mean	1.351
MLE of Standard Deviation	0.633
nu star	81.91
Approximate Chi Square Value (.05)	62.05
Adjusted Level of Significance	0.0231
Adjusted Chi Square Value	58.42
Anderson-Darling Test Statistic	0.384
Anderson-Darling 5% Critical Value	0.722
Kolmogorov-Smirnov Test Statistic	0.225
Kolmogorov-Smirnov 5% Critical Value	0.28

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	1.784
95% Adjusted Gamma UCL	1.894

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	1.651
95% Jackknife UCL	1.691
95% Standard Bootstrap UCL	1.634
95% Bootstrap-t UCL	1.728
95% Hall's Bootstrap UCL	1.811
95% Percentile Bootstrap UCL	1.657
95% BCA Bootstrap UCL	1.678
95% Chebyshev(Mean, Sd) UCL	2.147
97.5% Chebyshev(Mean, Sd) UCL	2.491
99% Chebyshev(Mean, Sd) UCL	3.168

Potential UCL to Use	Use 95% Student's-t UCL 1.691

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (chromium)

General Statistics

Number of Valid Observations	9	Number of Distinct Observations	9

Raw Statistics		Log-transformed Statistics	
Minimum	3.58	Minimum of Log Data	1.275
Maximum	13.8	Maximum of Log Data	2.625
Mean	7.72	Mean of log Data	1.985
Median	7.7	SD of log Data	0.37
SD	2.817		
Coefficient of Variation	0.365		
Skewness	1.005		

Warning: There are only 9 Values in this data
Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.908	Shapiro Wilk Test Statistic	0.944
Shapiro Wilk Critical Value	0.829	Shapiro Wilk Critical Value	0.829
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	9.466	95% H-UCL	10.25
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	11.93
95% Adjusted-CLT UCL (Chen-1995)	9.6	97.5% Chebyshev (MVUE) UCL	13.74
95% Modified-t UCL (Johnson-1978)	9.518	99% Chebyshev (MVUE) UCL	17.31

Gamma Distribution Test		Data Distribution
k star (bias corrected)	5.834	Data appear Normal at 5% Significance Level
Theta Star	1.323	
MLE of Mean	7.72	
MLE of Standard Deviation	3.196	
nu star	105	
Approximate Chi Square Value (.05)	82.37	Nonparametric Statistics
Adjusted Level of Significance	0.0231	95% CLT UCL 9.264
Adjusted Chi Square Value	78.14	95% Jackknife UCL 9.466

Anderson-Darling Test Statistic	0.357
Anderson-Darling 5% Critical Value	0.722
Kolmogorov-Smirnov Test Statistic	0.199
Kolmogorov-Smirnov 5% Critical Value	0.279

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	9.843
95% Adjusted Gamma UCL	10.37

95% Standard Bootstrap UCL	9.164
95% Bootstrap-t UCL	9.958
95% Hall's Bootstrap UCL	11.56
95% Percentile Bootstrap UCL	9.311
95% BCA Bootstrap UCL	9.458
95% Chebyshev(Mean, Sd) UCL	11.81
97.5% Chebyshev(Mean, Sd) UCL	13.58
99% Chebyshev(Mean, Sd) UCL	17.06

Potential UCL to Use

Use 95% Student's-t UCL 9.466

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (lead)

General Statistics

Number of Valid Observations	9
Number of Distinct Observations	9

Raw Statistics

Minimum	5.93
Maximum	24.3
Mean	12.51
Median	10.8
SD	6.07
Coefficient of Variation	0.485
Skewness	0.845

Log-transformed Statistics

Minimum of Log Data	1.78
Maximum of Log Data	3.19
Mean of log Data	2.424
SD of log Data	0.482

Warning: There are only 9 Values in this data

Note: It should be noted that even though bootstrap methods may be performed on this data set, the resulting calculations may not be reliable enough to draw conclusions

The literature suggests to use bootstrap methods on data sets having more than 10-15 observations.

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.918
Shapiro Wilk Critical Value	0.829

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.955
Shapiro Wilk Critical Value	0.829

Data appear Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL 16.27

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995) 16.45

Assuming Lognormal Distribution

95% H-UCL	18.47
95% Chebyshev (MVUE) UCL	21.36
97.5% Chebyshev (MVUE) UCL	25.2

95% Modified-t UCL (Johnson-1978)	16.37
99% Chebyshev (MVUE) UCL	32.73

Gamma Distribution Test

k star (bias corrected)	3.421
Theta Star	3.656
MLE of Mean	12.51
MLE of Standard Deviation	6.763
nu star	61.59
Approximate Chi Square Value (.05)	44.54
Adjusted Level of Significance	0.0231
Adjusted Chi Square Value	41.5
Anderson-Darling Test Statistic	0.265
Anderson-Darling 5% Critical Value	0.723
Kolmogorov-Smirnov Test Statistic	0.159
Kolmogorov-Smirnov 5% Critical Value	0.28

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	17.3
95% Adjusted Gamma UCL	18.57

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	15.84
95% Jackknife UCL	16.27
95% Standard Bootstrap UCL	15.74
95% Bootstrap-t UCL	17.3
95% Hall's Bootstrap UCL	16.81
95% Percentile Bootstrap UCL	15.78
95% BCA Bootstrap UCL	16.12
95% Chebyshev(Mean, Sd) UCL	21.33
97.5% Chebyshev(Mean, Sd) UCL	25.14
99% Chebyshev(Mean, Sd) UCL	32.64

Potential UCL to Use

Use 95% Student's-t UCL 16.27

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Result (1,2,4-trimethylbenzene)

General Statistics

Number of Valid Data	45	Number of Detected Data	13
Number of Distinct Detected Data	13	Number of Non-Detect Data	32
		Percent Non-Detects	71.11%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0207	Minimum Detected	-3.878
Maximum Detected	388	Maximum Detected	5.961
Mean of Detected	36.91	Mean of Detected	-0.548
SD of Detected	106.6	SD of Detected	3.262
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.001	Maximum Non-Detect	-6.908

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.4	Shapiro Wilk Test Statistic	0.834
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	10.66	Mean	-5.564
SD	58.18	SD	3.654
95% DL/2 (t) UCL	25.24	95% H-Stat (DL/2) UCL	93.1
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-8.918
		SD in Log Scale	6.961
		Mean in Original Scale	10.66
		SD in Original Scale	58.18
		95% t UCL	25.24
		95% Percentile Bootstrap UCL	27.47
		95% BCA Bootstrap UCL	37.01

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.19	Data do not follow a Discernable Distribution (0.05)

Theta Star	194.6
nu star	4.932

A-D Test Statistic	1.599
5% A-D Critical Value	0.876
K-S Test Statistic	0.876
5% K-S Critical Value	0.262

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	33466
Mean	4178
Median	99.01
SD	8128
k star	0.103
Theta star	40725
Nu star	9.233
AppChi2	3.468
95% Gamma Approximate UCL	11122
95% Adjusted Gamma UCL	11509

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	10.68
SD	57.53
SE of Mean	8.926
95% KM (t) UCL	25.68
95% KM (z) UCL	25.36
95% KM (jackknife) UCL	25.24
95% KM (bootstrap t) UCL	138.2
95% KM (BCA) UCL	27.25
95% KM (Percentile Bootstrap) UCL	27.76
95% KM (Chebyshev) UCL	49.58
97.5% KM (Chebyshev) UCL	66.42
99% KM (Chebyshev) UCL	99.49

Potential UCLs to Use

99% KM (Chebyshev) UCL	99.49

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (1,3,5-trimethylbenzene)

General Statistics

Number of Valid Data	45	Number of Detected Data	12
Number of Distinct Detected Data	12	Number of Non-Detect Data	33
		Percent Non-Detects	73.33%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0135	Minimum Detected	-4.305
Maximum Detected	107	Maximum Detected	4.673
Mean of Detected	11.02	Mean of Detected	-1.609
SD of Detected	30.54	SD of Detected	3.25
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.001	Maximum Non-Detect	-6.908

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.419	Shapiro Wilk Test Statistic	0.784
5% Shapiro Wilk Critical Value	0.859	5% Shapiro Wilk Critical Value	0.859

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	2.939
SD	16.05
95% DL/2 (t) UCL	6.958
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-6.003
SD	3.134
95% H-Stat (DL/2) UCL	4.303
Log ROS Method	
Mean in Log Scale	-10.45
SD in Log Scale	7.065
Mean in Original Scale	2.939
SD in Original Scale	16.05
95% t UCL	6.958
95% Percentile Bootstrap UCL	7.58
95% BCA Bootstrap UCL	10.76

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.195
Theta Star	56.55
nu star	4.676
A-D Test Statistic	1.535
5% A-D Critical Value	0.87
K-S Test Statistic	0.87
5% K-S Critical Value	0.272

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	14837
Mean	1943
Median	76.43
SD	3663
k star	0.105
Theta star	18494
Nu star	9.458
AppChi2	3.606
95% Gamma Approximate UCL	5098
95% Adjusted Gamma UCL	5272

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	2.948
SD	15.87
SE of Mean	2.47
95% KM (t) UCL	7.099
95% KM (z) UCL	7.011
95% KM (jackknife) UCL	6.966
95% KM (bootstrap t) UCL	39.55
95% KM (BCA) UCL	7.641
95% KM (Percentile Bootstrap) UCL	7.575
95% KM (Chebyshev) UCL	13.72
97.5% KM (Chebyshev) UCL	18.37
99% KM (Chebyshev) UCL	27.53
Potential UCLs to Use	
99% KM (Chebyshev) UCL	27.53

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (arsenic)

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

General Statistics

Number of Valid Data	45	Number of Detected Data	28
Number of Distinct Detected Data	26	Number of Non-Detect Data	17
		Percent Non-Detects	37.78%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.77	Minimum Detected	0.571
Maximum Detected	10.9	Maximum Detected	2.389
Mean of Detected	4.55	Mean of Detected	1.413
SD of Detected	2.197	SD of Detected	0.455
Minimum Non-Detect	2	Minimum Non-Detect	0.693
Maximum Non-Detect	2	Maximum Non-Detect	0.693

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.879	Shapiro Wilk Test Statistic	0.96
5% Shapiro Wilk Critical Value	0.924	5% Shapiro Wilk Critical Value	0.924
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	3.209	Mean	0.879
SD	2.448	SD	0.779
95% DL/2 (t) UCL	3.822	95% H-Stat (DL/2) UCL	4.198
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	2.69	Mean in Log Scale	1.022
SD	3.121	SD in Log Scale	0.653
95% MLE (t) UCL	3.471	Mean in Original Scale	3.41
95% MLE (Tiku) UCL	3.57	SD in Original Scale	2.287
		95% t UCL	3.983
		95% Percentile Bootstrap UCL	3.976
		95% BCA Bootstrap UCL	4.076

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	4.543	Data Follow Appr. Gamma Distribution at 5% Significance Level
Theta Star	1.002	
nu star	254.4	
A-D Test Statistic	0.612	Nonparametric Statistics
5% A-D Critical Value	0.748	Kaplan-Meier (KM) Method
K-S Test Statistic	0.748	Mean 3.5
5% K-S Critical Value	0.166	SD 2.171
Data follow Appr. Gamma Distribution at 5% Significance Level		SE of Mean 0.33
		95% KM (t) UCL 4.053
Assuming Gamma Distribution		95% KM (z) UCL 4.042
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 3.981

Minimum	0.203	95% KM (bootstrap t) UCL	4.087
Maximum	10.9	95% KM (BCA) UCL	4.322
Mean	4.168	95% KM (Percentile Bootstrap) UCL	4.134
Median	4.07	95% KM (Chebyshev) UCL	4.936
SD	2.014	97.5% KM (Chebyshev) UCL	5.558
k star	3.467	99% KM (Chebyshev) UCL	6.779
Theta star	1.202		
Nu star	312	**Potential UCLs to Use**	
AppChi2	272.1	95% KM (Percentile Bootstrap) UCL	4.134
95% Gamma Approximate UCL	4.78		
95% Adjusted Gamma UCL	4.802		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (barium)

General Statistics

Number of Valid Observations	45	Number of Distinct Observations	43

Raw Statistics		**Log-transformed Statistics**	
Minimum	12.4	Minimum of Log Data	2.518
Maximum	4200	Maximum of Log Data	8.343
Mean	156.7	Mean of log Data	4.073
Median	63.8	SD of log Data	0.937
SD	617.5		
Coefficient of Variation	3.94		
Skewness	6.671		

Relevant UCL Statistics

Normal Distribution Test		**Lognormal Distribution Test**	
Shapiro Wilk Test Statistic	0.195	Shapiro Wilk Test Statistic	0.845
Shapiro Wilk Critical Value	0.945	Shapiro Wilk Critical Value	0.945
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		**Assuming Lognormal Distribution**	
95% Student's-t UCL	311.4	95% H-UCL	126
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	152.9
95% Adjusted-CLT UCL (Chen-1995)	406	97.5% Chebyshev (MVUE) UCL	180.2
95% Modified-t UCL (Johnson-1978)	326.7	99% Chebyshev (MVUE) UCL	233.8

Gamma Distribution Test		**Data Distribution**
k star (bias corrected)	0.599	Data do not follow a Discernable Distribution (0.05)
Theta Star	261.9	
MLE of Mean	156.7	
MLE of Standard Deviation	202.6	

nu star	53.87
Approximate Chi Square Value (.05)	38.01
Adjusted Level of Significance	0.0447
Adjusted Chi Square Value	37.56
Anderson-Darling Test Statistic	6.691
Anderson-Darling 5% Critical Value	0.802
Kolmogorov-Smirnov Test Statistic	0.349
Kolmogorov-Smirnov 5% Critical Value	0.138

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	222.2
95% Adjusted Gamma UCL	224.8

Nonparametric Statistics

95% CLT UCL	308.1
95% Jackknife UCL	311.4
95% Standard Bootstrap UCL	303.8
95% Bootstrap-t UCL	1943
95% Hall's Bootstrap UCL	1109
95% Percentile Bootstrap UCL	341.6
95% BCA Bootstrap UCL	436.6
95% Chebyshev(Mean, Sd) UCL	558
97.5% Chebyshev(Mean, Sd) UCL	731.6
99% Chebyshev(Mean, Sd) UCL	1073

Potential UCL to Use

Use 95% Chebyshev (Mean, Sd) UCL 558

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (benzene)

General Statistics

Number of Valid Data	51	Number of Detected Data	16
Number of Distinct Detected Data	16	Number of Non-Detect Data	35
		Percent Non-Detects	68.63%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0193	Minimum Detected	-3.948
Maximum Detected	10.1	Maximum Detected	2.313
Mean of Detected	1.049	Mean of Detected	-1.571
SD of Detected	2.501	SD of Detected	1.835
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.02	Maximum Non-Detect	-3.912

Note: Data have multiple DLs - Use of KM Method is recommended
For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Non-Detect	36
Number treated as Detected	15
Single DL Non-Detect Percentage	70.59%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.452	Shapiro Wilk Test Statistic	0.944
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution	Assuming Lognormal Distribution
DL/2 Substitution Method	DL/2 Substitution Method

Mean	0.33
SD	1.455
95% DL/2 (t) UCL	0.672

Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Mean	-5.533
SD	2.97
95% H-Stat (DL/2) UCL	2.551

Log ROS Method	
Mean in Log Scale	-5.928
SD in Log Scale	3.76
Mean in Original Scale	0.331
SD in Original Scale	1.455
95% t UCL	0.672
95% Percentile Bootstrap UCL	0.696
95% BCA Bootstrap UCL	0.973

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.371
Theta Star	2.828
nu star	11.87
A-D Test Statistic	0.997
5% A-D Critical Value	0.816
K-S Test Statistic	0.816
5% K-S Critical Value	0.23

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	36.97
Mean	7.238
Median	1.407
SD	10.23
k star	0.152
Theta star	47.73
Nu star	15.47
AppChi2	7.589
95% Gamma Approximate UCL	14.75
95% Adjusted Gamma UCL	15.07

Data Distribution Test with Detected Values Only

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	0.342
SD	1.438
SE of Mean	0.208
95% KM (t) UCL	0.691
95% KM (z) UCL	0.685
95% KM (jackknife) UCL	0.682
95% KM (bootstrap t) UCL	2.184
95% KM (BCA) UCL	0.736
95% KM (Percentile Bootstrap) UCL	0.717
95% KM (Chebyshev) UCL	1.249
97.5% KM (Chebyshev) UCL	1.641
99% KM (Chebyshev) UCL	2.412

Potential UCLs to Use

95% KM (Chebyshev) UCL	1.249

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (cadmium)

General Statistics

Number of Valid Data	45	Number of Detected Data	43
Number of Distinct Detected Data	42	Number of Non-Detect Data	2

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

Percent Non-Detects	4.44%

Raw Statistics

Minimum Detected	0.522
Maximum Detected	3.12
Mean of Detected	1.569
SD of Detected	0.764
Minimum Non-Detect	0.5
Maximum Non-Detect	0.5

Log-transformed Statistics

Minimum Detected	-0.65
Maximum Detected	1.138
Mean of Detected	0.32
SD of Detected	0.537
Minimum Non-Detect	-0.693
Maximum Non-Detect	-0.693

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.932
5% Shapiro Wilk Critical Value	0.943

Data not Normal at 5% Significance Level

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.929
5% Shapiro Wilk Critical Value	0.943

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	1.51
SD	0.796
95% DL/2 (t) UCL	1.709
Maximum Likelihood Estimate(MLE) Method	
Mean	1.504
SD	0.8
95% MLE (t) UCL	1.704
95% MLE (Tiku) UCL	1.7

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	0.244
SD	0.634
95% H-Stat (DL/2) UCL	1.891
Log ROS Method	
Mean in Log Scale	0.262
SD in Log Scale	0.59
Mean in Original Scale	1.516
SD in Original Scale	0.787
95% t UCL	1.713
95% Percentile Bootstrap UCL	1.71
95% BCA Bootstrap UCL	1.722

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	3.725
Theta Star	0.421
nu star	320.4
A-D Test Statistic	0.648
5% A-D Critical Value	0.753
K-S Test Statistic	0.753
5% K-S Critical Value	0.135

Data appear Gamma Distributed at 5% Significance Level

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	3.12
Mean	1.499
Median	1.47

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	1.522
SD	0.769
SE of Mean	0.116
95% KM (t) UCL	1.717
95% KM (z) UCL	1.713
95% KM (jackknife) UCL	1.717
95% KM (bootstrap t) UCL	1.715
95% KM (BCA) UCL	1.707
95% KM (Percentile Bootstrap) UCL	1.711
95% KM (Chebyshev) UCL	2.028

SD	0.815	97.5% KM (Chebyshev) UCL	2.247
k star	0.464	99% KM (Chebyshev) UCL	2.676
Theta star	3.23		
Nu star	41.77	**Potential UCLs to Use**	
AppChi2	27.95	95% KM (BCA) UCL	1.707
95% Gamma Approximate UCL	2.24		
95% Adjusted Gamma UCL	2.27		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (chromium)

General Statistics

Number of Valid Data	45	Number of Detected Data	44
Number of Distinct Detected Data	44	Number of Non-Detect Data	1
		Percent Non-Detects	2.22%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.64	Minimum Detected	0.971
Maximum Detected	18	Maximum Detected	2.89
Mean of Detected	8.102	Mean of Detected	1.953
SD of Detected	4.081	SD of Detected	0.555
Minimum Non-Detect	2.5	Minimum Non-Detect	0.916
Maximum Non-Detect	2.5	Maximum Non-Detect	0.916

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.941	Shapiro Wilk Test Statistic	0.937
5% Shapiro Wilk Critical Value	0.944	5% Shapiro Wilk Critical Value	0.944
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	7.949	Mean	1.914
SD	4.162	SD	0.606
95% DL/2 (t) UCL	8.992	95% H-Stat (DL/2) UCL	9.777
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	7.934	Mean in Log Scale	1.921
SD	4.149	SD in Log Scale	0.588
95% MLE (t) UCL	8.973	Mean in Original Scale	7.959
95% MLE (Tiku) UCL	8.943	SD in Original Scale	4.146
		95% t UCL	8.998
		95% Percentile Bootstrap UCL	8.979

95% BCA Bootstrap UCL	9.042

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	3.51
Theta Star	2.308
nu star	308.9
A-D Test Statistic	0.498
5% A-D Critical Value	0.753
K-S Test Statistic	0.753
5% K-S Critical Value	0.134

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	18
Mean	7.922
Median	7.7
SD	4.211
k star	0.734
Theta star	10.79
Nu star	66.05
AppChi2	48.35
95% Gamma Approximate UCL	10.82
95% Adjusted Gamma UCL	10.94

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	7.98
SD	4.07
SE of Mean	0.614
95% KM (t) UCL	9.011
95% KM (z) UCL	8.99
95% KM (jackknife) UCL	9.01
95% KM (bootstrap t) UCL	9.089
95% KM (BCA) UCL	9.152
95% KM (Percentile Bootstrap) UCL	9
95% KM (Chebyshev) UCL	10.66
97.5% KM (Chebyshev) UCL	11.81
99% KM (Chebyshev) UCL	14.09

Potential UCLs to Use

95% KM (BCA) UCL	9.152

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (ethylbenzene)

General Statistics

Number of Valid Data	51	Number of Detected Data	14
Number of Distinct Detected Data	13	Number of Non-Detect Data	37
		Percent Non-Detects	72.55%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0102	Minimum Detected	-4.585
Maximum Detected	149	Maximum Detected	5.004
Mean of Detected	16.68	Mean of Detected	-0.775
SD of Detected	41.12	SD of Detected	3.03
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.02	Maximum Non-Detect	-3.912

Note: Data have multiple DLs - Use of KM Method is recommended

Number treated as Non-Detect	38

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Detected	13
Single DL Non-Detect Percentage	74.51%

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.483
5% Shapiro Wilk Critical Value	0.874

Data not Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	4.581
SD	22.28
95% DL/2 (t) UCL	9.808
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.877
5% Shapiro Wilk Critical Value	0.874

Data appear Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-5.375
SD	3.384
95% H-Stat (DL/2) UCL	19.86
Log ROS Method	
Mean in Log Scale	-8.769
SD in Log Scale	6.405
Mean in Original Scale	4.58
SD in Original Scale	22.28
95% t UCL	9.807
95% Percentile Bootstrap UCL	10.09
95% BCA Bootstrap UCL	14.47

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.208
Theta Star	80.14
nu star	5.828
A-D Test Statistic	1.543
5% A-D Critical Value	0.872
K-S Test Statistic	0.872
5% K-S Critical Value	0.253

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	5462
Mean	738.6
Median	48.72
SD	1340
k star	0.105
Theta star	7058
Nu star	10.67
AppChi2	4.368
95% Gamma Approximate UCL	1805
95% Adjusted Gamma UCL	1855

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	4.587
SD	22.05
SE of Mean	3.205
95% KM (t) UCL	9.958
95% KM (z) UCL	9.858
95% KM (jackknife) UCL	9.806
95% KM (bootstrap t) UCL	44.07
95% KM (BCA) UCL	10.25
95% KM (Percentile Bootstrap) UCL	10.27
95% KM (Chebyshev) UCL	18.56
97.5% KM (Chebyshev) UCL	24.6
99% KM (Chebyshev) UCL	36.47

Potential UCLs to Use

99% KM (Chebyshev) UCL	36.47

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (gasoline range organics)

General Statistics

Number of Valid Data	51	Number of Detected Data	17
Number of Distinct Detected Data	17	Number of Non-Detect Data	34
		Percent Non-Detects	66.67%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.54	Minimum Detected	0.432
Maximum Detected	3200	Maximum Detected	8.071
Mean of Detected	428.8	Mean of Detected	3.292
SD of Detected	923	SD of Detected	2.616
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	1	Maximum Non-Detect	0

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.54	Shapiro Wilk Test Statistic	0.887
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	143.3	Mean	0.635
SD	560.5	SD	2.406
95% DL/2 (t) UCL	274.8	95% H-Stat (DL/2) UCL	137.5
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-2.61
		SD in Log Scale	5.321
		Mean in Original Scale	143
		SD in Original Scale	560.6
		95% t UCL	274.5
		95% Percentile Bootstrap UCL	278
		95% BCA Bootstrap UCL	359.9

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.25	Data do not follow a Discernable Distribution (0.05)
Theta Star	1717	
nu star	8.491	
A-D Test Statistic	1.452	Nonparametric Statistics

5% A-D Critical Value	0.86
K-S Test Statistic	0.86
5% K-S Critical Value	0.229

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	44122
Mean	6380
Median	477.1
SD	11176
k star	0.111
Theta star	57333
Nu star	11.35
AppChi2	4.802
95% Gamma Approximate UCL	15079
95% Adjusted Gamma UCL	15479

Note: DL/2 is not a recommended method.

Kaplan-Meier (KM) Method

Mean	143.9
SD	554.8
SE of Mean	80.08
95% KM (t) UCL	278.2
95% KM (z) UCL	275.7
95% KM (jackknife) UCL	275.3
95% KM (bootstrap t) UCL	447.6
95% KM (BCA) UCL	275.4
95% KM (Percentile Bootstrap) UCL	282.2
95% KM (Chebyshev) UCL	493
97.5% KM (Chebyshev) UCL	644.1
99% KM (Chebyshev) UCL	940.7

Potential UCLs to Use

99% KM (Chebyshev) UCL	940.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (lead)

General Statistics

Number of Valid Data	55	Number of Detected Data	54
Number of Distinct Detected Data	53	Number of Non-Detect Data	1
		Percent Non-Detects	1.82%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.65	Minimum Detected	0.501
Maximum Detected	42.1	Maximum Detected	3.74
Mean of Detected	10.6	Mean of Detected	2.082
SD of Detected	7.825	SD of Detected	0.794
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	1	Maximum Non-Detect	0

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Lilliefors Test Statistic	0.13	Lilliefors Test Statistic	0.0997
5% Lilliefors Critical Value	0.121	5% Lilliefors Critical Value	0.121
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution

DL/2 Substitution Method

Assuming Lognormal Distribution

DL/2 Substitution Method

Mean	10.42
SD	7.871
95% DL/2 (t) UCL	12.2

Mean	2.031
SD	0.871
95% H-Stat (DL/2) UCL	14.44

Maximum Likelihood Estimate(MLE) Method	
Mean	10.36
SD	7.902
95% MLE (t) UCL	12.14
95% MLE (Tiku) UCL	12.07

Log ROS Method	
Mean in Log Scale	2.044
SD in Log Scale	0.835
Mean in Original Scale	10.43
SD in Original Scale	7.859
95% t UCL	12.2
95% Percentile Bootstrap UCL	12.18
95% BCA Bootstrap UCL	12.39

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	1.843
Theta Star	5.754
nu star	199
A-D Test Statistic	0.419
5% A-D Critical Value	0.764
K-S Test Statistic	0.764
5% K-S Critical Value	0.123

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	42.1
Mean	10.41
Median	8
SD	7.883
k star	0.719
Theta star	14.49
Nu star	79.05
AppChi2	59.56
95% Gamma Approximate UCL	13.82
95% Adjusted Gamma UCL	13.92

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	10.44
SD	7.774
SE of Mean	1.058
95% KM (t) UCL	12.21
95% KM (z) UCL	12.18
95% KM (jackknife) UCL	12.21
95% KM (bootstrap t) UCL	12.62
95% KM (BCA) UCL	12.19
95% KM (Percentile Bootstrap) UCL	12.16
95% KM (Chebyshev) UCL	15.05
97.5% KM (Chebyshev) UCL	17.05
99% KM (Chebyshev) UCL	20.97
Potential UCLs to Use	
95% KM (Chebyshev) UCL	15.05

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (m,p-xylene (m-xylene))

General Statistics

Number of Valid Data	45	Number of Detected Data	17
Number of Distinct Detected Data	17	Number of Non-Detect Data	28

Attachment D - ProUCL Output
Soil All, SWMU 197
White Sands Missile Range, New Mexico

Percent Non-Detects	62.22%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0134	Minimum Detected	-4.313
Maximum Detected	340	Maximum Detected	5.829
Mean of Detected	31.15	Mean of Detected	-0.622
SD of Detected	85.54	SD of Detected	3.118
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.001	Maximum Non-Detect	-6.908

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.431	Shapiro Wilk Test Statistic	0.881
5% Shapiro Wilk Critical Value	0.892	5% Shapiro Wilk Critical Value	0.892
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	11.77	Mean	-4.964
SD	53.8	SD	3.904
95% DL/2 (t) UCL	25.24	95% H-Stat (DL/2) UCL	696.5
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-6.811
		SD in Log Scale	6.043
		Mean in Original Scale	11.77
		SD in Original Scale	53.8
		95% t UCL	25.24
		95% Percentile Bootstrap UCL	26.28
		95% BCA Bootstrap UCL	38.03

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.19	Data do not follow a Discernable Distribution (0.05)
Theta Star	163.6	
nu star	6.475	
A-D Test Statistic	2.005	Nonparametric Statistics
5% A-D Critical Value	0.889	Kaplan-Meier (KM) Method
K-S Test Statistic	0.889	Mean 11.78
5% K-S Critical Value	0.232	SD 53.19
Data not Gamma Distributed at 5% Significance Level		SE of Mean 8.174
		95% KM (t) UCL 25.51
Assuming Gamma Distribution		95% KM (z) UCL 25.22
Gamma ROS Statistics using Extrapolated Data		95% KM (jackknife) UCL 25.25
Minimum	1E-12	95% KM (bootstrap t) UCL 104.4
Maximum	3484	95% KM (BCA) UCL 25.56
Mean	392.7	95% KM (Percentile Bootstrap) UCL 25.96
Median	0.679	95% KM (Chebyshev) UCL 47.41

SD	811.1	97.5% KM (Chebyshev) UCL	62.82
k star	0.0924	99% KM (Chebyshev) UCL	93.1
Theta star	4248		
Nu star	8.32	**Potential UCLs to Use**	
AppChi2	2.922	99% KM (Chebyshev) UCL	93.1
95% Gamma Approximate UCL	1118		
95% Adjusted Gamma UCL	1160		

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (methylbenzene (toluene))

General Statistics

Number of Valid Data	51	Number of Detected Data	18
Number of Distinct Detected Data	18	Number of Non-Detect Data	33
		Percent Non-Detects	64.71%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0269	Minimum Detected	-3.616
Maximum Detected	177	Maximum Detected	5.176
Mean of Detected	12.52	Mean of Detected	-0.576
SD of Detected	41.54	SD of Detected	2.435
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.02	Maximum Non-Detect	-3.912

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	33
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	18
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	64.71%

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.335	Shapiro Wilk Test Statistic	0.924
5% Shapiro Wilk Critical Value	0.897	5% Shapiro Wilk Critical Value	0.897
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.42	Mean	-5.004
SD	24.97	SD	3.642
95% DL/2 (t) UCL	10.28	95% H-Stat (DL/2) UCL	105.6
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-5.742
		SD in Log Scale	4.796
		Mean in Original Scale	4.421

SD in Original Scale	24.97
95% t UCL	10.28
95% Percentile Bootstrap UCL	11.32
95% BCA Bootstrap UCL	15.2

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.23
Theta Star	54.42
nu star	8.283
A-D Test Statistic	2.081
5% A-D Critical Value	0.871
K-S Test Statistic	0.871
5% K-S Critical Value	0.224

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	1070
Mean	137.8
Median	2
SD	257.6
k star	0.104
Theta star	1323
Nu star	10.62
AppChi2	4.336
95% Gamma Approximate UCL	337.6
95% Adjusted Gamma UCL	346.9

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Lognormal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	4.437
SD	24.72
SE of Mean	3.561
95% KM (t) UCL	10.41
95% KM (z) UCL	10.29
95% KM (jackknife) UCL	10.29
95% KM (bootstrap t) UCL	206.5
95% KM (BCA) UCL	12.09
95% KM (Percentile Bootstrap) UCL	11.08
95% KM (Chebyshev) UCL	19.96
97.5% KM (Chebyshev) UCL	26.68
99% KM (Chebyshev) UCL	39.87

Potential UCLs to Use

99% KM (Chebyshev) UCL	39.87

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (n-propylbenzene)

General Statistics

Number of Valid Data	45	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	35
		Percent Non-Detects	77.78%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0107	Minimum Detected	-4.538
Maximum Detected	92	Maximum Detected	4.522
Mean of Detected	11.12	Mean of Detected	-1.525
SD of Detected	28.65	SD of Detected	3.491

Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.001	Maximum Non-Detect	-6.908

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.454
5% Shapiro Wilk Critical Value	0.842

Data not Normal at 5% Significance Level

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.79
5% Shapiro Wilk Critical Value	0.842

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	2.472
SD	13.77
95% DL/2 (t) UCL	5.922
Maximum Likelihood Estimate(MLE) Method	N/A

MLE yields a negative mean

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	-6.251
SD	3.003
95% H-Stat (DL/2) UCL	1.844
Log ROS Method	
Mean in Log Scale	-12.52
SD in Log Scale	8.086
Mean in Original Scale	2.471
SD in Original Scale	13.77
95% t UCL	5.921
95% Percentile Bootstrap UCL	6.506
95% BCA Bootstrap UCL	10.22

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.199
Theta Star	55.94
nu star	3.976
A-D Test Statistic	1.117
5% A-D Critical Value	0.858
K-S Test Statistic	0.858
5% K-S Critical Value	0.295

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	1E-12
Maximum	41443
Mean	5817
Median	278.9
SD	10457
k star	0.118
Theta star	49272
Nu star	10.62
AppChi2	4.336
95% Gamma Approximate UCL	14253
95% Adjusted Gamma UCL	14704

Data Distribution Test with Detected Values Only

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	2.48
SD	13.62
SE of Mean	2.14
95% KM (t) UCL	6.075
95% KM (z) UCL	5.999
95% KM (jackknife) UCL	5.928
95% KM (bootstrap t) UCL	39.3
95% KM (BCA) UCL	6.518
95% KM (Percentile Bootstrap) UCL	6.439
95% KM (Chebyshev) UCL	11.81
97.5% KM (Chebyshev) UCL	15.84
99% KM (Chebyshev) UCL	23.77

Potential UCLs to Use

99% KM (Chebyshev) UCL	23.77

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (o-xylene)

General Statistics

Number of Valid Data	45	Number of Detected Data	16
Number of Distinct Detected Data	16	Number of Non-Detect Data	29
		Percent Non-Detects	64.44%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.0155	Minimum Detected	-4.167
Maximum Detected	109	Maximum Detected	4.691
Mean of Detected	11.36	Mean of Detected	-1.085
SD of Detected	28.51	SD of Detected	2.907
Minimum Non-Detect	0.001	Minimum Non-Detect	-6.908
Maximum Non-Detect	0.001	Maximum Non-Detect	-6.908

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.474	Shapiro Wilk Test Statistic	0.863
5% Shapiro Wilk Critical Value	0.887	5% Shapiro Wilk Critical Value	0.887
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	4.039	Mean	-5.284
SD	17.53	SD	3.582
95% DL/2 (t) UCL	8.43	95% H-Stat (DL/2) UCL	83.4
Maximum Likelihood Estimate(MLE) Method	N/A	Log ROS Method	
MLE yields a negative mean		Mean in Log Scale	-7.245
		SD in Log Scale	5.776
		Mean in Original Scale	4.039
		SD in Original Scale	17.53
		95% t UCL	8.43
		95% Percentile Bootstrap UCL	8.871
		95% BCA Bootstrap UCL	11.53

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.211	Data do not follow a Discernable Distribution (0.05)
Theta Star	53.9	
nu star	6.744	

A-D Test Statistic	1.77
5% A-D Critical Value	0.875
K-S Test Statistic	0.875
5% K-S Critical Value	0.237

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	1411
Mean	176.2
Median	8.09
SD	341.5
k star	0.101
Theta star	1741
Nu star	9.109
AppChi2	3.393
95% Gamma Approximate UCL	473
95% Adjusted Gamma UCL	489.6

Note: DL/2 is not a recommended method.

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	4.048
SD	17.33
SE of Mean	2.668
95% KM (t) UCL	8.532
95% KM (z) UCL	8.438
95% KM (jackknife) UCL	8.436
95% KM (bootstrap t) UCL	33.67
95% KM (BCA) UCL	8.907
95% KM (Percentile Bootstrap) UCL	8.712
95% KM (Chebyshev) UCL	15.68
97.5% KM (Chebyshev) UCL	20.71
99% KM (Chebyshev) UCL	30.6

Potential UCLs to Use

99% KM (Chebyshev) UCL	30.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

General UCL Statistics for Data Sets with Non-Detects

User Selected Options

From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Result (1,2,4-trimethylbenzene)

General Statistics

Number of Valid Observations	14	Number of Distinct Observations	14

Raw Statistics		Log-transformed Statistics	
Minimum	6.51	Minimum of Log Data	1.873
Maximum	10400	Maximum of Log Data	9.25
Mean	2518	Mean of log Data	6.533
Median	1795	SD of log Data	2.43
SD	2919		
Coefficient of Variation	1.159		
Skewness	1.736		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.815	Shapiro Wilk Test Statistic	0.843
Shapiro Wilk Critical Value	0.874	Shapiro Wilk Critical Value	0.874
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	3900	95% H-UCL	555301
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	30607
95% Adjusted-CLT UCL (Chen-1995)	4188	97.5% Chebyshev (MVUE) UCL	40632
95% Modified-t UCL (Johnson-1978)	3960	99% Chebyshev (MVUE) UCL	60324

Gamma Distribution Test		Data Distribution
k star (bias corrected)	0.433	Data appear Gamma Distributed at 5% Significance Level
Theta Star	5812	
MLE of Mean	2518	
MLE of Standard Deviation	3825	
nu star	12.13	
Approximate Chi Square Value (.05)	5.314	**Nonparametric Statistics**
Adjusted Level of Significance	0.0312	95% CLT UCL 3801
Adjusted Chi Square Value	4.728	95% Jackknife UCL 3900
		95% Standard Bootstrap UCL 3762
Anderson-Darling Test Statistic	0.397	95% Bootstrap-t UCL 4930
Anderson-Darling 5% Critical Value	0.795	95% Hall's Bootstrap UCL 10359
Kolmogorov-Smirnov Test Statistic	0.175	95% Percentile Bootstrap UCL 3815
Kolmogorov-Smirnov 5% Critical Value	0.242	95% BCA Bootstrap UCL 4149
Data appear Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 5919

97.5% Chebyshev(Mean, Sd) UCL	7390
99% Chebyshev(Mean, Sd) UCL	10281

Assuming Gamma Distribution

95% Approximate Gamma UCL	5749
95% Adjusted Gamma UCL	6460

Potential UCL to Use — Use 95% Adjusted Gamma UCL 6460

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (1,3,5-trimethylbenzene)

General Statistics

Number of Valid Data	14	Number of Detected Data	13
Number of Distinct Detected Data	13	Number of Non-Detect Data	1
		Percent Non-Detects	7.14%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	2.68	Minimum Detected	0.986
Maximum Detected	2690	Maximum Detected	7.897
Mean of Detected	644.2	Mean of Detected	5.366
SD of Detected	758.1	SD of Detected	2.184
Minimum Non-Detect	20	Minimum Non-Detect	2.996
Maximum Non-Detect	20	Maximum Non-Detect	2.996

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.791	Shapiro Wilk Test Statistic	0.84
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	598.9	Mean	5.147
SD	747.8	SD	2.252
95% DL/2 (t) UCL	952.9	95% H-Stat (DL/2) UCL	55500
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	485.7	Mean in Log Scale	5.137
SD	861.6	SD in Log Scale	2.266
95% MLE (t) UCL	893.5	Mean in Original Scale	598.8
95% MLE (Tiku) UCL	897	SD in Original Scale	747.9
		95% t UCL	952.8
		95% Percentile Bootstrap UCL	944.3
		95% BCA Bootstrap UCL	1044

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.486
Theta Star	1325
nu star	12.64
A-D Test Statistic	0.321
5% A-D Critical Value	0.785
K-S Test Statistic	0.785
5% K-S Critical Value	0.249

Data appear Gamma Distributed at 5% Significance Level

Data Distribution Test with Detected Values Only

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	2690
Mean	598.2
Median	372
SD	748.5
k star	0.217
Theta star	2763
Nu star	6.062
AppChi2	1.672
95% Gamma Approximate UCL	2169
95% Adjusted Gamma UCL	2617

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	598.4
SD	721.1
SE of Mean	200.6
95% KM (t) UCL	953.6
95% KM (z) UCL	928.3
95% KM (jackknife) UCL	952.5
95% KM (bootstrap t) UCL	1236
95% KM (BCA) UCL	986.6
95% KM (Percentile Bootstrap) UCL	940.5
95% KM (Chebyshev) UCL	1473
97.5% KM (Chebyshev) UCL	1851
99% KM (Chebyshev) UCL	2594

Potential UCLs to Use

95% KM (Chebyshev) UCL	1473

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (benzene)

General Statistics

Number of Valid Observations	14
Number of Distinct Observations	14

Raw Statistics

Minimum	3.06
Maximum	31000
Mean	11394
Median	8315
SD	11338
Coefficient of Variation	0.995
Skewness	0.746

Log-transformed Statistics

Minimum of Log Data	1.118
Maximum of Log Data	10.34
Mean of log Data	7.937
SD of log Data	2.892

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.847
Shapiro Wilk Critical Value	0.874

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.769
Shapiro Wilk Critical Value	0.874

Data not Normal at 5% Significance Level

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	16760

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	17024
95% Modified-t UCL (Johnson-1978)	16861

Assuming Lognormal Distribution

95% H-UCL	34196686
95% Chebyshev (MVUE) UCL	320489
97.5% Chebyshev (MVUE) UCL	428512
99% Chebyshev (MVUE) UCL	640701

Gamma Distribution Test

k star (bias corrected)	0.408
Theta Star	27922
MLE of Mean	11394
MLE of Standard Deviation	17836
nu star	11.43
Approximate Chi Square Value (.05)	4.851
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	4.296
Anderson-Darling Test Statistic	0.654
Anderson-Darling 5% Critical Value	0.801
Kolmogorov-Smirnov Test Statistic	0.233
Kolmogorov-Smirnov 5% Critical Value	0.243

Data appear Gamma Distributed at 5% Significance Level

Data Distribution

Data appear Gamma Distributed at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	16378
95% Jackknife UCL	16760
95% Standard Bootstrap UCL	16250
95% Bootstrap-t UCL	17705
95% Hall's Bootstrap UCL	16039
95% Percentile Bootstrap UCL	16127
95% BCA Bootstrap UCL	17096
95% Chebyshev(Mean, Sd) UCL	24602
97.5% Chebyshev(Mean, Sd) UCL	30318
99% Chebyshev(Mean, Sd) UCL	41545

Assuming Gamma Distribution

95% Approximate Gamma UCL	26835
95% Adjusted Gamma UCL	30300

Potential UCL to Use

Use 95% Adjusted Gamma UCL 30300

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (ethylbenzene)

General Statistics

Number of Valid Observations	14
Number of Distinct Observations	14

Raw Statistics

Minimum	0.39
Maximum	9800
Mean	3824
Median	4610
SD	3702
Coefficient of Variation	0.968
Skewness	0.21

Log-transformed Statistics

Minimum of Log Data	-0.942
Maximum of Log Data	9.19
Mean of log Data	5.958
SD of log Data	3.682

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.839
Shapiro Wilk Critical Value	0.874

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.796
Shapiro Wilk Critical Value	0.874

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	5577

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	5512
95% Modified-t UCL (Johnson-1978)	5586

Assuming Lognormal Distribution

95% H-UCL	1.445E+09
95% Chebyshev (MVUE) UCL	246725
97.5% Chebyshev (MVUE) UCL	332030
99% Chebyshev (MVUE) UCL	499595

Gamma Distribution Test

k star (bias corrected)	0.284
Theta Star	13468
MLE of Mean	3824
MLE of Standard Deviation	7177
nu star	7.951
Approximate Chi Square Value (.05)	2.707
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	2.318
Anderson-Darling Test Statistic	1.341
Anderson-Darling 5% Critical Value	0.832
Kolmogorov-Smirnov Test Statistic	0.325
Kolmogorov-Smirnov 5% Critical Value	0.248

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	11235
95% Adjusted Gamma UCL	13121

Data Distribution

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

95% CLT UCL	5452
95% Jackknife UCL	5577
95% Standard Bootstrap UCL	5371
95% Bootstrap-t UCL	5624
95% Hall's Bootstrap UCL	5369
95% Percentile Bootstrap UCL	5380
95% BCA Bootstrap UCL	5339
95% Chebyshev(Mean, Sd) UCL	8138
97.5% Chebyshev(Mean, Sd) UCL	10004
99% Chebyshev(Mean, Sd) UCL	13670

Potential UCL to Use

Use 95% Hall's Bootstrap UCL 5369

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (gasoline range organics)

General Statistics

Number of Valid Observations	11
Number of Distinct Observations	10

Raw Statistics

Minimum	182
Maximum	254000
Mean	102734

Log-transformed Statistics

Minimum of Log Data	5.204
Maximum of Log Data	12.45
Mean of log Data	10.37

Median	123000	SD of log Data	2.662
SD	78564		
Coefficient of Variation	0.765		
Skewness	0.198		

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.91
Shapiro Wilk Critical Value	0.85

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.686
Shapiro Wilk Critical Value	0.85

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	145667

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	143207
95% Modified-t UCL (Johnson-1978)	145903

Assuming Lognormal Distribution

95% H-UCL	309400000
95% Chebyshev (MVUE) UCL	2035531
97.5% Chebyshev (MVUE) UCL	2718031
99% Chebyshev (MVUE) UCL	4058672

Gamma Distribution Test

k star (bias corrected)	0.452
Theta Star	227320
MLE of Mean	102734
MLE of Standard Deviation	152818
nu star	9.943
Approximate Chi Square Value (.05)	3.906
Adjusted Level of Significance	0.0278
Adjusted Chi Square Value	3.313
Anderson-Darling Test Statistic	1.313
Anderson-Darling 5% Critical Value	0.778
Kolmogorov-Smirnov Test Statistic	0.348
Kolmogorov-Smirnov 5% Critical Value	0.268

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	261512
95% Adjusted Gamma UCL	308355

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	141697
95% Jackknife UCL	145667
95% Standard Bootstrap UCL	139004
95% Bootstrap-t UCL	148142
95% Hall's Bootstrap UCL	146171
95% Percentile Bootstrap UCL	139680
95% BCA Bootstrap UCL	142755
95% Chebyshev(Mean, Sd) UCL	205987
97.5% Chebyshev(Mean, Sd) UCL	250665
99% Chebyshev(Mean, Sd) UCL	338427

Potential UCL to Use

Use 95% Student's-t UCL 145667

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (m,p-xylene (m-xylene))

General Statistics

Number of Valid Observations	14	Number of Distinct Observations	13

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

Raw Statistics

Minimum	10
Maximum	22800
Mean	9137
Median	10695
SD	7694
Coefficient of Variation	0.842
Skewness	0.256

Log-transformed Statistics

Minimum of Log Data	2.303
Maximum of Log Data	10.03
Mean of log Data	7.876
SD of log Data	2.647

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.917
Shapiro Wilk Critical Value	0.874

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.75
Shapiro Wilk Critical Value	0.874

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	12779

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	12670
95% Modified-t UCL (Johnson-1978)	12802

Assuming Lognormal Distribution

95% H-UCL	7193058
95% Chebyshev (MVUE) UCL	181651
97.5% Chebyshev (MVUE) UCL	242064
99% Chebyshev (MVUE) UCL	360732

Gamma Distribution Test

k star (bias corrected)	0.448
Theta Star	20409
MLE of Mean	9137
MLE of Standard Deviation	13656
nu star	12.54
Approximate Chi Square Value (.05)	5.582
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	4.979
Anderson-Darling Test Statistic	1.007
Anderson-Darling 5% Critical Value	0.792
Kolmogorov-Smirnov Test Statistic	0.264
Kolmogorov-Smirnov 5% Critical Value	0.241

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	20520
95% Adjusted Gamma UCL	23004

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	12520
95% Jackknife UCL	12779
95% Standard Bootstrap UCL	12287
95% Bootstrap-t UCL	12878
95% Hall's Bootstrap UCL	12614
95% Percentile Bootstrap UCL	12391
95% BCA Bootstrap UCL	12283
95% Chebyshev(Mean, Sd) UCL	18101
97.5% Chebyshev(Mean, Sd) UCL	21979
99% Chebyshev(Mean, Sd) UCL	29598

Potential UCL to Use

Use 95% Student's-t UCL 12779

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (methylbenzene (toluene))

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

General Statistics

Number of Valid Observations	14	Number of Distinct Observations	14

Raw Statistics

Minimum	2.98
Maximum	66000
Mean	25968
Median	17850
SD	24847
Coefficient of Variation	0.957
Skewness	0.375

Log-transformed Statistics

Minimum of Log Data	1.092
Maximum of Log Data	11.1
Mean of log Data	8.181
SD of log Data	3.618

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.862
Shapiro Wilk Critical Value	0.874

Data not Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.769
Shapiro Wilk Critical Value	0.874

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	37728

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	37603
95% Modified-t UCL (Johnson-1978)	37839

Assuming Lognormal Distribution

95% H-UCL	8.029E+09
95% Chebyshev (MVUE) UCL	1977854
97.5% Chebyshev (MVUE) UCL	2660776
99% Chebyshev (MVUE) UCL	4002243

Gamma Distribution Test

k star (bias corrected)	0.315
Theta Star	82386
MLE of Mean	25968
MLE of Standard Deviation	46254
nu star	8.826
Approximate Chi Square Value (.05)	3.222
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	2.789
Anderson-Darling Test Statistic	1.035
Anderson-Darling 5% Critical Value	0.824
Kolmogorov-Smirnov Test Statistic	0.273
Kolmogorov-Smirnov 5% Critical Value	0.247

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	71131
95% Adjusted Gamma UCL	82186

Data Distribution

Data do not follow a Discernable Distribution (0.05)

Nonparametric Statistics

95% CLT UCL	36891
95% Jackknife UCL	37728
95% Standard Bootstrap UCL	36673
95% Bootstrap-t UCL	38916
95% Hall's Bootstrap UCL	35928
95% Percentile Bootstrap UCL	36845
95% BCA Bootstrap UCL	37104
95% Chebyshev(Mean, Sd) UCL	54914
97.5% Chebyshev(Mean, Sd) UCL	67439
99% Chebyshev(Mean, Sd) UCL	92042

Potential UCL to Use

Use 95% Hall's Bootstrap UCL 35928

In Case Bootstrap t and/or Hall's Bootstrap yields an unreasonably large UCL value, use 97.5% or 99% Chebyshev (Mean, Sd) UCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Result (mtbe)

General Statistics

Number of Valid Data	14	Number of Detected Data	9
Number of Distinct Detected Data	9	Number of Non-Detect Data	5
		Percent Non-Detects	35.71%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	89.1	Minimum Detected	4.49
Maximum Detected	1240	Maximum Detected	7.123
Mean of Detected	618.1	Mean of Detected	6.001
SD of Detected	478.8	SD of Detected	1.094
Minimum Non-Detect	1	Minimum Non-Detect	0
Maximum Non-Detect	500	Maximum Non-Detect	6.215

Note: Data have multiple DLs - Use of KM Method is recommended	Number treated as Non-Detect	9
For all methods (except KM, DL/2, and ROS Methods),	Number treated as Detected	5
Observations < Largest ND are treated as NDs	Single DL Non-Detect Percentage	64.29%

Warning: There are only 9 Detected Values in this data
Note: It should be noted that even though bootstrap may be performed on this data set
the resulting calculations may not be reliable enough to draw conclusions

It is recommended to have 10-15 or more distinct observations for accurate and meaningful results.

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.863	Shapiro Wilk Test Statistic	0.843
5% Shapiro Wilk Critical Value	0.829	5% Shapiro Wilk Critical Value	0.829
Data appear Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	426	Mean	4.761
SD	464.7	SD	2.545
95% DL/2 (t) UCL	645.9	95% H-Stat (DL/2) UCL	177926
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	1001	Mean in Log Scale	5.243
SD	208.9	SD in Log Scale	1.396
95% MLE (t) UCL	1100	Mean in Original Scale	416.8
95% MLE (Tiku) UCL	1166	SD in Original Scale	468.9
		95% t UCL	638.7
		95% Percentile Bootstrap UCL	619.5

95% BCA Bootstrap UCL	643.6

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.951
Theta Star	649.8
nu star	17.12
A-D Test Statistic	0.627
5% A-D Critical Value	0.738
K-S Test Statistic	0.738
5% K-S Critical Value	0.285

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	89.1
Maximum	1240
Mean	538.6
Median	444.2
SD	404.1
k star	1.35
Theta star	399
Nu star	37.8
AppChi2	24.72
95% Gamma Approximate UCL	823.5
95% Adjusted Gamma UCL	872.8

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method

Mean	432.1
SD	440
SE of Mean	124.8
95% KM (t) UCL	653.1
95% KM (z) UCL	637.4
95% KM (jackknife) UCL	644.7
95% KM (bootstrap t) UCL	701.2
95% KM (BCA) UCL	657.9
95% KM (Percentile Bootstrap) UCL	651.6
95% KM (Chebyshev) UCL	976.1
97.5% KM (Chebyshev) UCL	1212
99% KM (Chebyshev) UCL	1674

Potential UCLs to Use

95% KM (t) UCL	653.1
95% KM (Percentile Bootstrap) UCL	651.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (naphthalene)

General Statistics

Number of Valid Data	14	Number of Detected Data	10
Number of Distinct Detected Data	10	Number of Non-Detect Data	4
		Percent Non-Detects	28.57%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	0.61	Minimum Detected	-0.494
Maximum Detected	1300	Maximum Detected	7.17
Mean of Detected	477.1	Mean of Detected	5.416
SD of Detected	382.8	SD of Detected	2.176
Minimum Non-Detect	5	Minimum Non-Detect	1.609
Maximum Non-Detect	1000	Maximum Non-Detect	6.908

Note: Data have multiple DLs - Use of KM Method is recommended

Number treated as Non-Detect 13

Attachment D - ProUCL Output
Saturated Vadose Zone Soil Water, SWMU 197
White Sands Missile Range, New Mexico

For all methods (except KM, DL/2, and ROS Methods),
Observations < Largest ND are treated as NDs

Number treated as Detected	1
Single DL Non-Detect Percentage	92.86%

UCL Statistics

Normal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.871
5% Shapiro Wilk Critical Value	0.842

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

DL/2 Substitution Method	
Mean	382
SD	372.6
95% DL/2 (t) UCL	558.3
Maximum Likelihood Estimate(MLE) Method	N/A

MLE method failed to converge properly

Lognormal Distribution Test with Detected Values Only

Shapiro Wilk Test Statistic	0.641
5% Shapiro Wilk Critical Value	0.842

Data not Lognormal at 5% Significance Level

Assuming Lognormal Distribution

DL/2 Substitution Method	
Mean	4.887
SD	2.265
95% H-Stat (DL/2) UCL	45481
Log ROS Method	
Mean in Log Scale	4.701
SD in Log Scale	2.213
Mean in Original Scale	349.2
SD in Original Scale	381.8
95% t UCL	529.9
95% Percentile Bootstrap UCL	525.6
95% BCA Bootstrap UCL	560.2

Gamma Distribution Test with Detected Values Only

k star (bias corrected)	0.62
Theta Star	769.4
nu star	12.4
A-D Test Statistic	0.898
5% A-D Critical Value	0.756
K-S Test Statistic	0.756
5% K-S Critical Value	0.276

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data	
Minimum	0.61
Maximum	1300
Mean	409.3
Median	384
SD	350.4
k star	0.768
Theta star	533.2
Nu star	21.49
AppChi2	11.96
95% Gamma Approximate UCL	735.6
95% Adjusted Gamma UCL	797.9

Note: DL/2 is not a recommended method.

Data Distribution Test with Detected Values Only

Data appear Normal at 5% Significance Level

Nonparametric Statistics

Kaplan-Meier (KM) Method	
Mean	361.6
SD	370.6
SE of Mean	106.6
95% KM (t) UCL	550.3
95% KM (z) UCL	536.9
95% KM (jackknife) UCL	539.8
95% KM (bootstrap t) UCL	622.2
95% KM (BCA) UCL	603.6
95% KM (Percentile Bootstrap) UCL	561.4
95% KM (Chebyshev) UCL	826.2
97.5% KM (Chebyshev) UCL	1027
99% KM (Chebyshev) UCL	1422

Potential UCLs to Use

95% KM (t) UCL	550.3
95% KM (Percentile Bootstrap) UCL	561.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (n-propylbenzene)

General Statistics

Number of Valid Data	14	Number of Detected Data	13
Number of Distinct Detected Data	13	Number of Non-Detect Data	1
		Percent Non-Detects	7.14%

Raw Statistics		Log-transformed Statistics	
Minimum Detected	1.85	Minimum Detected	0.615
Maximum Detected	2180	Maximum Detected	7.687
Mean of Detected	494.2	Mean of Detected	4.976
SD of Detected	623.7	SD of Detected	2.255
Minimum Non-Detect	20	Minimum Non-Detect	2.996
Maximum Non-Detect	20	Maximum Non-Detect	2.996

UCL Statistics

Normal Distribution Test with Detected Values Only		Lognormal Distribution Test with Detected Values Only	
Shapiro Wilk Test Statistic	0.771	Shapiro Wilk Test Statistic	0.874
5% Shapiro Wilk Critical Value	0.866	5% Shapiro Wilk Critical Value	0.866
Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
DL/2 Substitution Method		DL/2 Substitution Method	
Mean	459.6	Mean	4.785
SD	613.1	SD	2.281
95% DL/2 (t) UCL	749.7	95% H-Stat (DL/2) UCL	44619
Maximum Likelihood Estimate(MLE) Method		Log ROS Method	
Mean	365.9	Mean in Log Scale	4.736
SD	703.6	SD in Log Scale	2.345
95% MLE (t) UCL	698.9	Mean in Original Scale	459.2
95% MLE (Tiku) UCL	700.2	SD in Original Scale	613.4
		95% t UCL	749.5
		95% Percentile Bootstrap UCL	744.1
		95% BCA Bootstrap UCL	843.2

Gamma Distribution Test with Detected Values Only		Data Distribution Test with Detected Values Only
k star (bias corrected)	0.448	Data appear Gamma Distributed at 5% Significance Level
Theta Star	1104	
nu star	11.64	
A-D Test Statistic	0.236	Nonparametric Statistics

5% A-D Critical Value	0.789
K-S Test Statistic	0.789
5% K-S Critical Value	0.25

Data appear Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

Gamma ROS Statistics using Extrapolated Data

Minimum	1E-12
Maximum	2180
Mean	458.9
Median	293.5
SD	613.6
k star	0.212
Theta star	2160
Nu star	5.949
AppChi2	1.614
95% Gamma Approximate UCL	1691
95% Adjusted Gamma UCL	2046

Kaplan-Meier (KM) Method

Mean	459
SD	591.2
SE of Mean	164.5
95% KM (t) UCL	750.2
95% KM (z) UCL	729.5
95% KM (jackknife) UCL	749.4
95% KM (bootstrap t) UCL	1042
95% KM (BCA) UCL	748
95% KM (Percentile Bootstrap) UCL	747.9
95% KM (Chebyshev) UCL	1176
97.5% KM (Chebyshev) UCL	1486
99% KM (Chebyshev) UCL	2095

Potential UCLs to Use

95% KM (Chebyshev) UCL	1176

Note: DL/2 is not a recommended method.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
For additional insight, the user may want to consult a statistician.

Result (o-xylene)

General Statistics

Number of Valid Observations	14
Number of Distinct Observations	14

Raw Statistics

Minimum	4.98
Maximum	9790
Mean	4202
Median	4890
SD	3410
Coefficient of Variation	0.811
Skewness	0.0933

Log-transformed Statistics

Minimum of Log Data	1.605
Maximum of Log Data	9.189
Mean of log Data	7.138
SD of log Data	2.614

Relevant UCL Statistics

Normal Distribution Test

Shapiro Wilk Test Statistic	0.915
Shapiro Wilk Critical Value	0.874

Data appear Normal at 5% Significance Level

Lognormal Distribution Test

Shapiro Wilk Test Statistic	0.738
Shapiro Wilk Critical Value	0.874

Data not Lognormal at 5% Significance Level

Assuming Normal Distribution

95% Student's-t UCL	5816

95% UCLs (Adjusted for Skewness)

95% Adjusted-CLT UCL (Chen-1995)	5725

Assuming Lognormal Distribution

95% H-UCL	2839692
95% Chebyshev (MVUE) UCL	81188
97.5% Chebyshev (MVUE) UCL	108133

95% Modified-t UCL (Johnson-1978)	5820	99% Chebyshev (MVUE) UCL	161061

Gamma Distribution Test

k star (bias corrected)	0.459
Theta Star	9159
MLE of Mean	4202
MLE of Standard Deviation	6204
nu star	12.85
Approximate Chi Square Value (.05)	5.789
Adjusted Level of Significance	0.0312
Adjusted Chi Square Value	5.173
Anderson-Darling Test Statistic	1.1
Anderson-Darling 5% Critical Value	0.791
Kolmogorov-Smirnov Test Statistic	0.27
Kolmogorov-Smirnov 5% Critical Value	0.241

Data not Gamma Distributed at 5% Significance Level

Assuming Gamma Distribution

95% Approximate Gamma UCL	9324
95% Adjusted Gamma UCL	10434

Data Distribution

Data appear Normal at 5% Significance Level

Nonparametric Statistics

95% CLT UCL	5701
95% Jackknife UCL	5816
95% Standard Bootstrap UCL	5691
95% Bootstrap-t UCL	5778
95% Hall's Bootstrap UCL	5672
95% Percentile Bootstrap UCL	5665
95% BCA Bootstrap UCL	5686
95% Chebyshev(Mean, Sd) UCL	8174
97.5% Chebyshev(Mean, Sd) UCL	9893
99% Chebyshev(Mean, Sd) UCL	13269

Potential UCL to Use Use 95% Student's-t UCL 5816

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.

Appendix I

IDW Documentation

WSMR Environment & Safety Tech Lib
2 8800 00031574 8

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES0910501

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Bradley Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Decon Water

2A. USEPA WASTE CODE
Non Regulated

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Cleaning of sampling and drilling equipment

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☐ SOLID ☒ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point >150 F *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO. ES0910501

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ☐ YES ☒ NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
Non Regulated

HAZARD CLASS	U.N. or N.A. NO.	PACKING GROUP

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT ☐ BULK ☐ DRUM ☒ OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)*	EMERGENCY RESPONSE NUMBER

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

☒ CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* ☒ USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS
HELSTF TSA CMI Waste Characterization Composite 005 & 006, 04/2009

CERTIFICATION

I, Susan B. Van Horn **HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.**

Susan B. Van Horn — 16 April 2009

Signature of Generator's Representative — *Date*

DRMS FORM 1930, Oct 2006 (EF)

HELSTF TSA CMI Waste Characterization Composite 005

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-005	water	3/26/2009	S 8021B	mg/L	Benzene		0.0361	0.001
HTSA-0197-CS-005	water	3/26/2009	S 8021B	mg/L	Ethylbenzene		0.0843	0.001
HTSA-0197-CS-005	water	3/26/2009	S 1010	°F	Flashpoint		.>150	
HTSA-0197-CS-005	water	3/26/2009	S 8015B	mg/L	GRO		1.98	0.2
HTSA-0197-CS-005	water	3/26/2009	S 8021B	mg/L	MTBE		0.0154	0.001
HTSA-0197-CS-005	water	3/26/2009	S 8021B	mg/L	Toluene		0.226	0.001
HTSA-0197-CS-005	water	3/26/2009	S 8021B	mg/L	Xylene		0.274	0.001

20090189 -
20090194 -
20090195 -
20090196 -
20090200 -
20090198 -

HELSTF TSA CMI Waste Characterization Composite 006

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-006	water	3/26/2009	S 8021B	mg/L	Benzene		0.134	0.001
HTSA-0197-CS-006	water	3/26/2009	S 8021B	mg/L	Ethylbenzene		0.285	0.001
HTSA-0197-CS-006	water	3/26/2009	S 1010	°F	Flashpoint		.>150	
HTSA-0197-CS-006	water	3/26/2009	S 8015B	mg/L	GRO		7.88	0.2
HTSA-0197-CS-006	water	3/26/2009	S 8021B	mg/L	MTBE		0.0478	0.001
HTSA-0197-CS-006	water	3/26/2009	S 8021B	mg/L	Toluene		0.81	0.001
HTSA-0197-CS-006	water	3/26/2009	S 8021B	mg/L	Xylene		0.892	0.001

20090191 -
20090192 -
20090193 -
20090197 -
20090199 -

WASTE PROFILE NUMBER ES0910501

ARCADIS-

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Decontamination Water (CS-005)

Detailed description of hazardous waste generation process:

Potable water was used for cleaning (decon) of sampling and drilling equipment used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090189, 20090194, 20090195, 20090196, 20090200, and 20090198.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 16 APR 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)

I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.

Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building #

Signature/date (DD MMM YY): Brad T. Davis 16 APR 09
For Fred Bourger

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL

I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.

Print Name: Phone:

Signature/date (DD MMM YY):

Comments:

WSMR Environment & Safety Tech Lib
2 8800 00031570 6

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES0910601

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Bradley Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Development Water

2A. USEPA WASTE CODE
D018

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Purging Monitoring Wells

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION 55GOTM

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☐ SOLID ☒ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		
	Benzene	8.12 mg/L	

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO. ES0910601

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
Hazardous Waste, Liquid, n.o.s. (Benzene)

HAZARD CLASS 9 | **U.N. or N.A. NO.** NA3082 | **PACKING GROUP** III

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT [ ] BULK [ ] DRUM [X] OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)* | **EMERGENCY RESPONSE NUMBER**

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

[X] CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* [X] USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS
HELSTF TSA February 2009 Haz Waste Profile

CERTIFICATION

I, Susan B. Van Horn **HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.**

Susan B Van Horn — *Signature of Generator's Representative*

16 April 2009 — *Date*

DRMS FORM 1930, Oct 2006 (EF)

field_code	matrix	collect_date	collect_time	method	units	param	rl_result	rl	project_name	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	3860	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	194	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	41.1	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	864	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	44.9	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Benzene	8120	1	HELSTF TSA Groundwater	8.12 mg/L
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Benzene	649	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Benzene	1580	1	HELSTF TSA Groundwater	
HTSA-0197-RB-001-0209	water	2/25/2009	14:55:00	S 8260B	ug/L	Chloroform	1	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Ethylbenzene	6280	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Ethylbenzene	20.2	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Ethylbenzene	57.3	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Isopropylbenzene	319	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Isopropylbenzene	16.2	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	m,p-Xylene	17100	1	HELSTF TSA Groundwater	17.1 mg/L
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	m,p-Xylene	779	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	m,p-Xylene	352	1	HELSTF TSA Groundwater	
HTSA-0197-HMW-052-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.41	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	MTBE	825	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	MTBE	111	1	HELSTF TSA Groundwater	
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.73	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	MTBE	690	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Nitrate-N	221	0.5	HELSTF TSA Groundwater	
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Nitrate-N	52.2	0.5	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	n-Propylbenzene	589	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	n-Propylbenzene	20.3	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	o-Xylene	7760	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	o-Xylene	343	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	o-Xylene	214	1	HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 4500-H+	s.u.	pH	7.38		HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 4500-H+	s.u.	pH	7.19		HELSTF TSA Groundwater	
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 4500-H+	s.u.	pH	7.48		HELSTF TSA Groundwater	
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	9.21		HELSTF TSA Groundwater	
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 4500-H+	s.u.	pH	9.33		HELSTF TSA Groundwater	
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	7.4		HELSTF TSA Groundwater	
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 4500-H+	s.u.	pH	7.59		HELSTF TSA Groundwater	
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	SM 4500-H+	s.u.	pH	6.68		HELSTF TSA Groundwater	
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 4500-H+	s.u.	pH	7.77		HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 120.1	uMHOS/cm	Specific Conductance	10600		HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 120.1	uMHOS/cm	Specific Conductance	14000		HELSTF TSA Groundwater	
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	E 120.1	uMHOS/cm	Specific Conductance	9360		HELSTF TSA Groundwater	
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35500		HELSTF TSA Groundwater	
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35400		HELSTF TSA Groundwater	
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	36500		HELSTF TSA Groundwater	
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2510B	uMHOS/cm	Specific Conductance	9770		HELSTF TSA Groundwater	
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	E 120.1	uMHOS/cm	Specific Conductance	4610		HELSTF TSA Groundwater	
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	E 120.1	uMHOS/cm	Specific Conductance	10800		HELSTF TSA Groundwater	
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 300.0	mg/L	Sulfate	6800	2.5	HELSTF TSA Groundwater	
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Sulfate	4420	2.5	HELSTF TSA Groundwater	

HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Sulfate	10700	2.5	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Toluene	16400	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Toluene	35.6	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Toluene	2190	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 2540C	mg/L	Total Dissolved Solids	7435	10	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 2540C	mg/L	Total Dissolved Solids	8440	10	HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 2540C	mg/L	Total Dissolved Solids	8640	5	HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33100	5	HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33200	5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	12700	10	HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2540C	mg/L	Total Dissolved Solids	7430	10	HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 2540C	mg/L	Total Dissolved Solids	8085	10	HELSTF TSA Groundwater

WASTE PROFILE NUMBER ES091060I

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA Corrective Measures Implementation 20090190

Detailed description of hazardous waste generation process:
Water was captured following development (purging) monitoring wells installed during the HELSTF TSA CMI. The CMI work entailed drilling monitoring wells and vapor extraction wells in the zone of an unleaded gasoline spill. Data is attached for water samples collected previously this year (February-March 2009) in the same contaminated zone. Based on site knowledge and past investigations, metals are not a concern at this site. Based on sampling results, the water is characteristically hazardous due to benzene.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 01

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 01/04/09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: Phone:

Signature/date (DD MMM YY):

Comments:

WSMR Environment & Safety Tech Lib
2 8800 00031569 8

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES0912801

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Bradley Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Soil Cuttings

2A. USEPA WASTE CODE
Non Regulated

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Soil Cuttings generated during well installations

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION 55 Gal OTM

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☐ YES ☒ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☒ SOLID ☐ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO.
ES0912801

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ☐ YES ☒ NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
Non Regulated

HAZARD CLASS	U.N. or N.A. NO.	PACKING GROUP

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT ☐ BULK ☐ DRUM ☒ OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)*	EMERGENCY RESPONSE NUMBER

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

☒ CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* ☒ USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS

Lab Analytical: HELSTF TSA CMI Waste Characterization Composite 004; HELSTF TSA CMI HVW-07 &HVW-09 ;HELSTF TSA CMI Waste Characterization Composite 001;HELSTF TSA CMI HVW-05 & HVW-10; HELSTF TSA CMI Waste Characterization Composite 002

CERTIFICATION

I, Susan B. Van Horn HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

Signature of Generator's Representative — 8 May 2009 *Date*

Subject **Totals Analysis**

From Brad <bdavis@ws-tech.com>

Date Friday, May 15, 2009 9:25

To susan.vanhorn@us.army.mil

Susan,

The analytical data reported for the soils waste characterization results show mg/kg units for totals analysis. If TCLP analysis had been run, then the units would be in mg/L and the parameter (in this case benzene) would be preceded by "TCLP" in the param column. I confirmed this with the analytical lab (Trace Analysis).

Thank you,

Bradley Davis
White Sands Technical Services
(575) 678-3397

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-002)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090169, 20090177 and 20090179. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Fred Bourger 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 002

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-002	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Xylene		0.0462	0.02

~~20090167~~

20096177

20090179

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
191510	HTSA-0197-HVW-005-(30.0-31.0)	soil	2009-03-25	08:15	2009-03-27
191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
191518	HTSA-0197-CS-006	water	2009-03-26	14:45	2009-03-27
191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

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Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-002)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090169, 20090177 and 20090179. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Fred Bourger 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 002

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-002	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Xylene		0.0462	0.02

20090169
~~20090177~~
20090179

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
191510	HTSA-0197-HVW-005-(30.0-31.0)	soil	2009-03-25	08:15	2009-03-27
191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
191518	HTSA-0197-CS-006	water	2009-03-26	14:45	2009-03-27
191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

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JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-002)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090169, 20090177 and 20090179. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Fred Bourger 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 002

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-002	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-002	soil	3/26/2009	S 8021B	mg/Kg	Xylene		0.0462	0.02

20090169
20090177
~~20090179~~

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

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NCTRCA WFWB38444Y0909

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El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
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191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
191518	HTSA-0197-CS-006	water	2009-03-26	14:45	2009-03-27
191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

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The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings HVW-05 and HVW-10

Detailed description of hazardous waste generation process:

Soil cuttings were generated during an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and evidence from previous investigations, contaminants related to unleaded gasoline are the only contaminants of concern. RCRA metals were sampled in previous investigations and were at levels below concern. This waste profile covers HWMC #'s 20090168, 20090182, 20090180, and 20090185. Analytical results are totals. Although benzene was detected at 0.717 mg/kg (total analysis), using the rule of 20, the waste soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)

I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.

Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis for Fred Bourger 06 May 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL

I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.

Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI HVW-05 and HVW-10

field_code	matrix	collect_date	collect_time	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	MTBE	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Benzene		0.539
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Toluene		1.24
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Ethylbenzene	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Xylene		13.2
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8015B	mg/Kg	GRO		2070
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	MTBE		0.196
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Benzene		0.717
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Toluene		2.14
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Ethylbenzene		0.574
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Xylene		1.76
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8015B	mg/Kg	GRO		10.1

20090168
20090182
20090180
20090185

TRACEANALYSIS, INC.

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El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

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Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings HVW-05 and HVW-10

Detailed description of hazardous waste generation process:
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Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis for Fred Bourger 06 May 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI HVW-05 and HVW-10

field_code	matrix	collect_date	collect_time	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	MTBE	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Benzene		0.539
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Toluene		1.24
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Ethylbenzene	<	0.02
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HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8015B	mg/Kg	GRO		2070
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	MTBE		0.196
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Benzene		0.717
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Toluene		2.14
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Ethylbenzene		0.574
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Xylene		1.76
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8015B	mg/Kg	GRO		10.1

20090168
20090182
20090180
20090185

TRACEANALYSIS, INC.

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Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER _____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings HVW-05 and HVW-10

Detailed description of hazardous waste generation process:
Soil cuttings were generated during an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and evidence from previous investigations, contaminants related to unleaded gasoline are the only contaminants of concern. RCRA metals were sampled in previous investigations and were at levels below concern. This waste profile covers HWMC #'s 20090168, 20090182, 20090180, and 20090185. Analytical results are totals. Although benzene was detected at 0.717 mg/kg (total analysis), using the rule of 20, the waste soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis for Fred Bourger 06 May 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI HVW-05 and HVW-10

field_code	matrix	collect_date	collect_time	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	MTBE	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Benzene		0.539
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Toluene		1.24
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Ethylbenzene	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Xylene		13.2
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8015B	mg/Kg	GRO		2070
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	MTBE		0.196
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Benzene		0.717
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Toluene		2.14
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Ethylbenzene		0.574
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Xylene		1.76
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8015B	mg/Kg	GRO		10.1

~~20090168~~
20090182
20090180
20090185

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

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This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

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Standard Flags

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B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings HVW-05 and HVW-10

Detailed description of hazardous waste generation process:
Soil cuttings were generated during an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and evidence from previous investigations, contaminants related to unleaded gasoline are the only contaminants of concern. RCRA metals were sampled in previous investigations and were at levels below concern. This waste profile covers HWMC #'s 20090168, 20090182, 20090180, and 20090185. Analytical results are totals. Although benzene was detected at 0.717 mg/kg (total analysis), using the rule of 20, the waste soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis for Fred Bourger 06 May 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI HVW-05 and HVW-10

field_code	matrix	collect_date	collect_time	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	MTBE	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Benzene		0.539
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Toluene		1.24
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Ethylbenzene	<	0.02
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8021B	mg/Kg	Xylene		13.2
HTSA-0197-HVW-010-(25.5-26.5')	soil	3/23/2009	12:05:00	S 8015B	mg/Kg	GRO		2070
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	MTBE		0.196
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Benzene		0.717
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Toluene		2.14
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Ethylbenzene		0.574
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8021B	mg/Kg	Xylene		1.76
HTSA-0197-HVW-005-(30.0-31.0)	soil	3/25/2009	8:15:00	S 8015B	mg/Kg	GRO		10.1

20090168
20090182
20090180
20090185

TRACEANALYSIS, INC.

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6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

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The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-001)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090167, 20090170 and 20090171. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY):

_____

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY):

_____

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

_____

Comments:

_____

_____

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

TRACEANALYSIS, INC.

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032530

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191140	HTSA-0197-HVW-009-(16.0-17.0')	soil	2009-03-23	09:24	2009-03-25
191141	HTSA-0197-HVW-009-(19.0-20.0')	soil	2009-03-23	09:35	2009-03-25
191142	HTSA-0197-HVW-010-(25.5-26.5')	soil	2009-03-23	12:05	2009-03-25
191143	HTSA-0197-HVW-007-20.0-22.0')	soil	2009-03-23	10:40	2009-03-25
191144	HTSA-0197-HVW-008-(30.0-31.0')	soil	2009-03-23	14:07	2009-03-25
191145	HTSA-0197-HVW-008-(20-22.0')	soil	2009-03-23	13:51	2009-03-25
191146	HTSA-0197-HVW-108-(20.0-22.0')	soil	2009-03-23	13:51	2009-03-25
191147	HTSA-0197-TB-001	water	2009-03-24	14:07	2009-03-25

Comment(s)

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-001)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090167, 20090170 and 20090171. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 001

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-001	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Xylene	<	0.02	0.02

20090167
20090170
20090171

TRACEANALYSIS, INC.

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El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
191510	HTSA-0197-HVW-005-(30.0-31.0)	soil	2009-03-25	08:15	2009-03-27
191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
191518	HTSA-0197-CS-006	water	2009-03-26	14:45	2009-03-27
191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

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JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-001)

Detailed description of hazardous waste generation process:
Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090167, 20090170 and 20090171. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 001

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-001	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Xylene	<	0.02	0.02

20090167
20090170
20090171

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
191510	HTSA-0197-HVW-005-(30.0-31.0)	soil	2009-03-25	08:15	2009-03-27
191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
191518	HTSA-0197-CS-006	water	2009-03-26	14:45	2009-03-27
191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 27 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Notes:
For inorganic analyses, the term MQL should actually read PQL.

Standard Flags

U - Not detected. The analyte is not detected above the SDL.
J - Estimated. The analyte is positively identified and the value is approximated between the SDL and MQL.
B - The sample contains less than ten times the concentration found in the method blank.
JB - The analyte is positively identified and the value is approximated between the SDL and MQL.
The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA CMI Soil Cuttings (CS-001)

Detailed description of hazardous waste generation process:

Soil cuttings were generated during sampling and drilling of monitoring wells used in an unleaded gasoline spill investigation. All contaminants of concern were sampled for. Based on site knowledge and results of previous investigations, contaminants related to unleaded gasoline are determined to be the only contaminants of concern. RCRA metals were sampled in previous investigations and determined to be at levels below concern. This waste profile covers HWMC #s 20090167, 20090170 and 20090171. Based on sample results and generator knowledge, this soil is non-hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Brad T. Davis 06 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)

I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.

Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 06 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL

I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.

Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HELSTF TSA CMI Waste Characterization Composite 001

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result	rl
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Benzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Ethylbenzene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8015B	mg/Kg	GRO	<	1	1
HTSA-0197-CS-001	soil	3/26/2009	SW-846 Ch. 7.1		Ignitability		non-ignitable	
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	MTBE	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Toluene	<	0.02	0.02
HTSA-0197-CS-001	soil	3/26/2009	S 8021B	mg/Kg	Xylene	<	0.02	0.02

20090167
20090170
~~20090171~~

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Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

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Lubbock: T104704219-08-TX
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Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: April 16, 2009

Work Order: 9032724

Project Name: HELSTF TSA CMI

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
191509	HTSA-0197-HVW-005-(20.0-22.0)	soil	2009-03-25	07:51	2009-03-27
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191511	HTSA-0197-RB-001	water	2009-03-25	10:20	2009-03-27
191513	HTSA-0197-CS-001	soil	2009-03-26	10:00	2009-03-27
191514	HTSA-0197-CS-002	soil	2009-03-26	10:10	2009-03-27
191515	HTSA-0197-CS-003	soil	2009-03-26	10:40	2009-03-27
191516	HTSA-0197-CS-004	soil	2009-03-26	10:50	2009-03-27
191517	HTSA-0197-CS-005	water	2009-03-26	14:20	2009-03-27
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191546	HSTA-197-TB-002	water	2009-03-26	14:45	2009-03-27

Comment(s)

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The sample contains less than ten times the concentration found in the method blank.
The result should be considered non-detect to the SDL.

Michael Abel

Dr. Blair Leftwich, Director

2 8800 00032244 7

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES09 170 02

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Brad Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE PPE from purge water event at HELSTF

2A. USEPA WASTE CODE
D018, D028

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Ground water monitoring event

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION 5G CTP

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☒ SOLID ☐ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		
	1,2-Dichloroethane	777 ug/L	
	Benzene	31000 ug/L	

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO. ES09 170 02

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME

NA3077, Hazardous Waste, Solid, n.o.s., 9, PGIII (Benzene, 1,2-Dichloroethane)

HAZARD CLASS 9 | **U.N. or N.A. NO.** NA3077 | **PACKING GROUP** III

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT [ ] BULK [X] DRUM [ ] OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)* 2004 | **EMERGENCY RESPONSE NUMBER** 171

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

[X] CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* [ ] USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS

Analytical and Quality Control Report WO 9051322, Trace Analysis, Inc.

CERTIFICATION

I, Susan B. Van Horn HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

Signature of Generator's Representative — *Date* 19 June 2009

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: May 20, 2009

Work Order: 9051322

Project Name: HELSTF TSA Long-Term Groundwater HVW Wells

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195746	HTSA-0197-HVW-005-0509	water	2009-05-12	12:35	2009-05-13
195747	HTSA-0197-HVW-006-0509	water	2009-05-11	11:45	2009-05-13
195748	HTSA-0197-HVW-010-0509	water	2009-05-12	10:24	2009-05-13
195749	HTSA-0197-HVW-105-0509	water	2009-05-12	12:35	2009-05-13
195750	HTSA-0197-TB-09-103	water	2009-05-12	12:35	2009-05-13
195751	HTSA-0197-HVW-008-0509	water	2009-05-12	13:18	2009-05-13
195752	HTSA-0197-RB-001-0509	water	2009-05-12	13:45	2009-05-13

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

HELSTF TSA New Well Sampling Data (Hazardous)
May 2009

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloroethene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloropropene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,2,3-Trichlorobenzene	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,2,3-Trichlorobenzene	<	5

HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,3-Dichloropropane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2,2-Dichloropropane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Butanone (MEK)	<	5
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	<	1000
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Chlorotoluene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Hexanone	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	4-Chlorotoluene	<	200

HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Carbon Disulfide	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Carbon Tetrachloride	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chlorobenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	200
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	cis-1,3-Dichloropropene	<	200

HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Methylene chloride	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Methylene chloride	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	MTBE	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Naphthalene	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	n-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	n-Propylbenzene	<	200
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	p-Isopropyltoluene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	sec-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Styrene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	tert-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	100

D028

HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,2,4-Trimethylbenzene	1410	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,2,4-Trimethylbenzene	2290	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	**1,2-Dichloroethane (EDC)**	777	.777
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,3,5-Trimethylbenzene	262	
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,3,5-Trimethylbenzene	2.68	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,3,5-Trimethylbenzene	870	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,3,5-Trimethylbenzene	316	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,3,5-Trimethylbenzene	496	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	6370	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	638	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Acetone	8440	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Acetone	1960	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	**Benzene**	31000	31.
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	**Benzene**	9.9	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	**Benzene**	29100	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	**Benzene**	30300	D018
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	**Benzene**	7320	
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Bromodichloromethane	1.61	
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chloroform	1.76	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Ethylbenzene	4640	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Ethylbenzene	6660	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Ethylbenzene	4760	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Ethylbenzene	5590	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8015B	mg/L	GRO	155	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8015B	mg/L	GRO	123	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8015B	mg/L	GRO	142	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8015B	mg/L	GRO	148	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Isopropylbenzene	198	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	m,p-Xylene	9310	
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	m,p-Xylene	10.4	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	m,p-Xylene	13800	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	m,p-Xylene	9590	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	m,p-Xylene	12000	
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	n-Propylbenzene	1.85	
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	n-Propylbenzene	709	
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	n-Propylbenzene	243	
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	n-Propylbenzene	383	
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	o-Xylene	4430	

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA New Well Monitoring PPE

Detailed description of hazardous waste generation process:
Personal Protective Equipment (PPE) and disposable sampling equipment is containerized from a ground water monitoring event. The ground water is sampled from wells that intersect a water bearing zone that is known to have been contaminated by unleaded gasoline. Samples results are attached. Samples were analyzed for known contaminants of concern. Based on sample results and generator knowledge, the PPE is considered characteristic hazardous based on benzene and 1,2-dichloroethane.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 16 JUN 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 16 JUN 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

2 8800 00031837 9

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES09 148 03

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Bradley Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Purge Water

2A. USEPA WASTE CODE
D018

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Purge Water from ground water monitoring event (HELSTF TSA)

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION 5 Gal 1H1

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☐ SOLID ☒ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		
	Benzene	8.1 mg/L	
	1,2,4 Trimethyl benzene	3860 ug/L	
	Chloroform	1 ug/L	
	Ethyl benzene	6280 ug/L	
	Isopropyl benzene	319 ug/L	
	M,P Xylene	17100 ug/L	
	MTBE	825 ug/L	
	Toluene	16400 ug/L	
	O Xylene	7760 ug/L	

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO.
ES09 148 03

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
NA3082, Hazardous Waste, Liquid, n.o.s., 9, PG III

HAZARD CLASS 9 | U.N. or N.A. NO. NA3082 | PACKING GROUP III

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT [ ] BULK [X] DRUM [ ] OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)* 2004 | EMERGENCY RESPONSE NUMBER 171

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

[X] CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* [X] USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS
Lab Analytical: HELSTF TSA February 2009

CERTIFICATION

I, Susan B. Van Horn HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

Signature of Generator's Representative — 28 May 2009 *Date*

DRMS FORM 1930, Oct 2006 (EF)

field_code	matrix	collect_date	collect_time	method	units	param	rl_result	rl	project_name
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	3860	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	194	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	41.1	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	864	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	44.9	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Benzene	8120	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Benzene	649	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Benzene	1580	1	HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:55:00	S 8260B	ug/L	Chloroform	1	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Ethylbenzene	6280	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Ethylbenzene	20.2	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Ethylbenzene	57.3	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Isopropylbenzene	319	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Isopropylbenzene	16.2	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	m,p-Xylene	17100	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	m,p-Xylene	779	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	m,p-Xylene	352	1	HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.41	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	MTBE	825	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	MTBE	111	1	HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.73	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	MTBE	690	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Nitrate-N	221	0.5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Nitrate-N	52.2	0.5	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	n-Propylbenzene	589	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	n-Propylbenzene	20.3	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	o-Xylene	7760	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	o-Xylene	343	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	o-Xylene	214	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 4500-H+	s.u.	pH	7.38		HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 4500-H+	s.u.	pH	7.19		HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 4500-H+	s.u.	pH	7.48		HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	9.21		HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 4500-H+	s.u.	pH	9.33		HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	7.4		HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 4500-H+	s.u.	pH	7.59		HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	SM 4500-H+	s.u.	pH	6.68		HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 4500-H+	s.u.	pH	7.77		HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 120.1	uMHOS/cm	Specific Conductance	10600		HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 120.1	uMHOS/cm	Specific Conductance	14000		HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	E 120.1	uMHOS/cm	Specific Conductance	9360		HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35500		HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35400		HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	36500		HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2510B	uMHOS/cm	Specific Conductance	9770		HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	E 120.1	uMHOS/cm	Specific Conductance	4610		HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	E 120.1	uMHOS/cm	Specific Conductance	10800		HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 300.0	mg/L	Sulfate	6800	2.5	HELSTF TSA Groundwater

HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Sulfate	4420	2.5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Sulfate	10700	2.5	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Toluene	16400	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Toluene	35.6	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Toluene	2190	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 2540C	mg/L	Total Dissolved Solids	7435	10	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 2540C	mg/L	Total Dissolved Solids	8440	10	HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 2540C	mg/L	Total Dissolved Solids	8640	5	HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33100	5	HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33200	5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	12700	10	HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2540C	mg/L	Total Dissolved Solids	7430	10	HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 2540C	mg/L	Total Dissolved Solids	8085	10	HELSTF TSA Groundwater

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
5015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
Bldg. 1538, Room 111
P. O. Box 352
Las Cruces, NM, 88011

Report Date: March 5, 2009

Work Order: 9022613

Project Name: HELSTF TSA Groundwater
Project Number: HELSTF TSA Groundwater

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
188496	HTSA-0197-HMW-048-0209	water	2009-02-25	13:05	2009-02-26
188497	HTSA-0197-TB-09-080	water	2009-02-25	13:05	2009-02-26
188498	HTSA-0197-HMW-052-0209	water	2009-02-23	13:55	2009-02-26
188499	HTSA-0197-HVW-003-0209	water	2009-02-24	11:16	2009-02-26
188500	HTSA-0197-HVW-004-0209	water	2009-02-24	14:17	2009-02-26
188501	HTSA-0197-HMW-152-0209	water	2009-02-23	13:55	2009-02-26
188502	HTSA-0197-HMW-050-0209	water	2009-02-23	11:05	2009-02-26
188503	HTSA-0197-HMW-049-0209	water	2009-02-25	11:31	2009-02-26
188504	HTSA-0197-HVW-002-0209	water	2009-02-25	13:55	2009-02-26
188505	HTSA-0197-RB-001-0209	water	2009-02-25	14:55	2009-02-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 42 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

WASTE PROFILE NUMBER E809 14803

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA Purge Water

Detailed description of hazardous waste generation process:
Purge water (ground water) generated during ground water monitoring event. Purge water is containerized and presented for disposal following the end of the sampling event. The sampling event includes wells that intersect a perched water bearing zone that has been affected by an unleaded gasoline spill. Based on analytical results and process knowledge, the purge water is characteristic hazard based on benzene.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 27 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 27 MAY 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: Phone:

Signature/date (DD MMM YY):

Comments:

2 8800 00031842 9

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES09 148 04

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Bradley Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Personal Protective Equipment

2A. USEPA WASTE CODE
D018

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE PPE from ground water monitoring event (HELSTF TSA)

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☒ SOLID ☐ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		
	Benzene	8.1 mg/L	
	1,2,4 Trimethyl benzene	3860 ug/L	
	Chloroform	1 ug/L	
	Ethyl benzene	6280 ug/L	
	Isopropyl benzene	319 ug/L	
	M,P Xylene	17100 ug/L	
	MTBE	825 ug/L	
	Toluene	16400 ug/L	
	O Xylene	7760 ug/L	

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO.
ES09 148 04

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
NA3077, Hazardous Waste, Solid, n.o.s., 9, PG III

HAZARD CLASS 9 | U.N. or N.A. NO. NA3077 | PACKING GROUP III

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT [ ] BULK [X] DRUM [ ] OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)* 2004 | EMERGENCY RESPONSE NUMBER 171

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

[X] CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* [X] USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS
Lab Analytical: HELSTF TSA February 2009

CERTIFICATION

I, Susan B. Van Horn HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

Susan B. Van Horn
Signature of Generator's Representative

28 May 2009
Date

field_code	matrix	collect_date	collect_time	method	units	param	rl_result	rl	project_name
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	3860	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	194	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	1,2,4-Trimethylbenzene	41.1	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	864	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	1,3,5-Trimethylbenzene	44.9	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Benzene	8120	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Benzene	649	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Benzene	1580	1	HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:55:00	S 8260B	ug/L	Chloroform	1	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Ethylbenzene	6280	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Ethylbenzene	20.2	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Ethylbenzene	57.3	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Isopropylbenzene	319	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Isopropylbenzene	16.2	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	m,p-Xylene	17100	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	m,p-Xylene	779	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	m,p-Xylene	352	1	HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.41	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	MTBE	825	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	MTBE	111	1	HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	S 8260B	ug/L	MTBE	8.73	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	MTBE	690	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Nitrate-N	221	0.5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Nitrate-N	52.2	0.5	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	n-Propylbenzene	589	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	n-Propylbenzene	20.3	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	o-Xylene	7760	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	o-Xylene	343	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	o-Xylene	214	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 4500-H+	s.u.	pH	7.38		HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 4500-H+	s.u.	pH	7.19		HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 4500-H+	s.u.	pH	7.48		HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	9.21		HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 4500-H+	s.u.	pH	9.33		HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 4500-H+	s.u.	pH	7.4		HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 4500-H+	s.u.	pH	7.59		HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	SM 4500-H+	s.u.	pH	6.68		HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 4500-H+	s.u.	pH	7.77		HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 120.1	uMHOS/cm	Specific Conductance	10600		HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 120.1	uMHOS/cm	Specific Conductance	14000		HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	E 120.1	uMHOS/cm	Specific Conductance	9360		HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35500		HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	35400		HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 120.1	uMHOS/cm	Specific Conductance	36500		HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2510B	uMHOS/cm	Specific Conductance	9770		HELSTF TSA Groundwater
HTSA-0197-RB-001-0209	water	2/25/2009	14:45:00	E 120.1	uMHOS/cm	Specific Conductance	4610		HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	E 120.1	uMHOS/cm	Specific Conductance	10800		HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	E 300.0	mg/L	Sulfate	6800	2.5	HELSTF TSA Groundwater

HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	E 300.0	mg/L	Sulfate	4420	2.5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	E 300.0	mg/L	Sulfate	10700	2.5	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	S 8260B	ug/L	Toluene	16400	1	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	S 8260B	ug/L	Toluene	35.6	1	HELSTF TSA Groundwater
HTSA-0197-HVW-002-0209	water	2/25/2009	13:55:00	S 8260B	ug/L	Toluene	2190	1	HELSTF TSA Groundwater
HTSA-0197-HVW-003-0209	water	2/24/2009	11:16:00	SM 2540C	mg/L	Total Dissolved Solids	7435	10	HELSTF TSA Groundwater
HTSA-0197-HVW-004-0209	water	2/24/2009	14:17:00	SM 2540C	mg/L	Total Dissolved Solids	8440	10	HELSTF TSA Groundwater
HTSA-0197-HMW-050-0209	water	2/23/2009	11:05:00	SM 2540C	mg/L	Total Dissolved Solids	8640	5	HELSTF TSA Groundwater
HTSA-0197-HMW-052-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33100	5	HELSTF TSA Groundwater
HTSA-0197-HMW-152-0209	water	2/23/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	33200	5	HELSTF TSA Groundwater
HTSA-197-HVW-002-0209	water	2/25/2009	13:55:00	SM 2540C	mg/L	Total Dissolved Solids	12700	10	HELSTF TSA Groundwater
HTSA-0197-HMW-048-0209	water	2/25/2009	13:05:00	SM 2540C	mg/L	Total Dissolved Solids	7430	10	HELSTF TSA Groundwater
HTSA-0197-HMW-049-0209	water	2/25/2009	11:31:00	SM 2540C	mg/L	Total Dissolved Solids	8085	10	HELSTF TSA Groundwater

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317
El Paso: T104704221-08-TX LELAP-02002
Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
Bldg. 1538, Room 111
P. O. Box 352
Las Cruces, NM, 88011

Report Date: March 5, 2009

Work Order: 9022613

Project Name: HELSTF TSA Groundwater
Project Number: HELSTF TSA Groundwater

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
188496	HTSA-0197-HMW-048-0209	water	2009-02-25	13:05	2009-02-26
188497	HTSA-0197-TB-09-080	water	2009-02-25	13:05	2009-02-26
188498	HTSA-0197-HMW-052-0209	water	2009-02-23	13:55	2009-02-26
188499	HTSA-0197-HVW-003-0209	water	2009-02-24	11:16	2009-02-26
188500	HTSA-0197-HVW-004-0209	water	2009-02-24	14:17	2009-02-26
188501	HTSA-0197-HMW-152-0209	water	2009-02-23	13:55	2009-02-26
188502	HTSA-0197-HMW-050-0209	water	2009-02-23	11:05	2009-02-26
188503	HTSA-0197-HMW-049-0209	water	2009-02-25	11:31	2009-02-26
188504	HTSA-0197-HVW-002-0209	water	2009-02-25	13:55	2009-02-26
188505	HTSA-0197-RB-001-0209	water	2009-02-25	14:55	2009-02-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 42 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA PPE

Detailed description of hazardous waste generation process:
Personal Protective Equipment (PPE) generated during ground water monitoring event. PPE is generated, containerized and presented for disposal following the end of the sampling event. The sampling event includes wells that intersect a perched water bearing zone that has been affected by an unleaded gasoline spill. Based on analytical results from the sampling event and process knowledge, the PPE is characteristic hazard based on benzene.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 575-678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): B. T. Da 27 May 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 575-678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): Fred Bourger 27 May 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

2 8800 00031834 6

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME US Army White Sands Missile Range

WASTE PROFILE NO. ES09 170 01

2. FACILITY ADDRESS
100 Headquarters Ave
WSMR, NM

3. ZIP CODE 88002

4. GENERATOR USEPA ID NM2750211235

5. GENERATOR STATE ID N/A

6. TECHNICAL CONTACT Brad Davis

7. TITLE Senior Geologist

8. PHONE 678-3397

B. WASTE INFORMATION

1. NAME OF WASTE Purge Water from HELSTF

2A. USEPA WASTE CODE
D018, D028

2B. STATE/LOCAL/HOST-NATION WASTE CODES
N/A

3. PROCESS GENERATING WASTE Ground water monitoring event

4. PROJECTED ANNUAL VOL

5. MODE OF COLLECTION 5G CTP

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31? ☐ YES ☒ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL? *(40 CFR 268)* ☒ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☒ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☒ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR	DENSITY	BTU/LB
TOTAL SOLIDS	ASH CONTENT	

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☐ SOLID ☒ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)
☐ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point _____ *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		
	1,2-Dichloroethane	777 ug/L	
	Benzene	31000 ug/L	

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO.
ES09 170 01

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? [X] YES [ ] NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME
NA3082, Hazardous Waste, Liquid, n.o.s., 9, PGIII (Benzene, 1,2-Dichloroethane)

HAZARD CLASS 9 | U.N. or N.A. NO. NA3082 | PACKING GROUP III

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT [ ] BULK [X] DRUM [ ] OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)* 2004 | EMERGENCY RESPONSE NUMBER 171

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

[X] CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* [ ] USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS
Analytical and Quality Control Report WO 9051322, Trace Analysis, Inc.

CERTIFICATION

I, Susan B. Van Horn HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

Susan B. Van Horn
Signature of Generator's Representative

19 June 2009
Date

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX
LELAP-02003
Kansas E-10317

El Paso: T104704221-08-TX
LELAP-02002

Midland: T104704392-08-TX

Analytical and Quality Control Report

Brad Davis
Zia Engineering & Environmental
755 S. Telshor Blvd.
Suite F-201
Las Cruces, NM, 88011

Report Date: May 20, 2009

Work Order: 9051322

Project Name: HELSTF TSA Long-Term Groundwater HVW Wells

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195746	HTSA-0197-HVW-005-0509	water	2009-05-12	12:35	2009-05-13
195747	HTSA-0197-HVW-006-0509	water	2009-05-11	11:45	2009-05-13
195748	HTSA-0197-HVW-010-0509	water	2009-05-12	10:24	2009-05-13
195749	HTSA-0197-HVW-105-0509	water	2009-05-12	12:35	2009-05-13
195750	HTSA-0197-TB-09-103	water	2009-05-12	12:35	2009-05-13
195751	HTSA-0197-HVW-008-0509	water	2009-05-12	13:18	2009-05-13
195752	HTSA-0197-RB-001-0509	water	2009-05-12	13:45	2009-05-13

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

HELSTF TSA New Well Sampling Data (Hazardous)
May 2009

field_code	matrix	collect_date	method	units	param	rl_sign	rl_result
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,1,2-Tetrachloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,1-Trichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,2,2-Tetrachloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1,2-Trichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloroethene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloroethene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,1-Dichloropropene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,1-Dichloropropene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,2,3-Trichlorobenzene	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,2,3-Trichlorobenzene	<	5

HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichlorobenzene (meta)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,3-Dichloropropane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,3-Dichloropropane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	1,4-Dichlorobenzene (para)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2,2-Dichloropropane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2,2-Dichloropropane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Butanone (MEK)	<	5
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Butanone (MEK)	<	1000
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Chloroethyl vinyl ether	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Chlorotoluene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Chlorotoluene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	2-Hexanone	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	2-Hexanone	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	4-Chlorotoluene	<	200

HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Bromomethane (methyl bromide)	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Carbon Disulfide	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Carbon Disulfide	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Carbon Tetrachloride	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Carbon Tetrachloride	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chlorobenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chlorobenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chloroethane	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloroethane	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	200
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloroform	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Chloromethane (methyl chloride)	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	cis-1,2-Dichloroethene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	cis-1,3-Dichloropropene	<	200

HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Methylene chloride	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Methylene chloride	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	MTBE	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	MTBE	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	1000
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Naphthalene	<	5
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	2500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	1000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Naphthalene	<	500
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	n-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	n-Butylbenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	n-Propylbenzene	<	200
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	p-Isopropyltoluene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	p-Isopropyltoluene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	sec-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	sec-Butylbenzene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Styrene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Styrene	<	100
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	200
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	tert-Butylbenzene	<	1
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	500
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	200
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	tert-Butylbenzene	<	100

HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	o-Xylene	5.01
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	o-Xylene	6300
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	o-Xylene	4550
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	o-Xylene	5230
HTSA-0197-HVW-005-0509	water	5/12/2009	S 8260B	ug/L	Toluene	55100
HTSA-0197-HVW-006-0509	water	5/11/2009	S 8260B	ug/L	Toluene	2.98
HTSA-0197-HVW-010-0509	water	5/12/2009	S 8260B	ug/L	Toluene	57200
HTSA-0197-HVW-105-0509	water	5/12/2009	S 8260B	ug/L	Toluene	54000
HTSA-0197-HVW-008-0509	water	5/12/2009	S 8260B	ug/L	Toluene	33200
HTSA-0197-HVW-005-0509	water	5/12/2009	SM 2540C	mg/L	Total Dissolved Solids	5170
HTSA-0197-HVW-010-0509	water	5/12/2009	SM 2540C	mg/L	Total Dissolved Solids	4815
HTSA-0197-HVW-105-0509	water	5/12/2009	SM 2540C	mg/L	Total Dissolved Solids	5085
HTSA-0197-HVW-008-0509	water	5/12/2009	SM 2540C	mg/L	Total Dissolved Solids	3330

WASTE PROFILE NUMBER _____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA New Well Monitoring Purge Water

Detailed description of hazardous waste generation process:
Purge water is containerized separately from a ground water monitoring event. The ground water is sampled from wells that intersect a water bearing zone that is known to have been contaminated by unleaded gasoline. Samples results are attached. Samples were analyzed for known contaminants of concern. Based on sample results and generator knowledge, the purge water is considered characteristic hazardous based on benzene and 1,2-dichloroethane.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 16 JUN 09

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)
I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.
Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY): 16 June 09

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL
I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.
Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

WASTE PROFILE NUMBER_____

WSMR WASTE PROFILE

TO BE COMPLETED BY THE SATELLITE ACCUMULATION POINT (SAP) Manager

SAP Number: HELSTF TSA Gasoline Spill Product

Detailed description of hazardous waste generation process:

Gasoline product (waste) was recovered during bailing of monitoring wells on site. Gasoline is present as a non-aqueous phase liquid on ground water due to an unleaded gasoline spill. A detailed hydrocarbon analysis was run on the gasoline which indicates the presence of benzene above the maximum concentration for the toxicity characteristic. Based on this result and generator knowledge, the waste is characteristic hazardous.

SAP Manager Verification (Generator if this is a single event): I have attached DRMS Form 1930 with all appropriate documentation. I hereby certify that all information submitted in this and all attached documents are to the best of my knowledge an accurate representation of the waste turned into the HWMC/HWSF. All known or suspected hazards have been properly identified.

Print Name: Bradley Davis Phone: 678-3397

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY):

TO BE COMPLETED BY THE ACTIVITY ENVIRONMENTAL COMPLIANCE OFFICER (ECO)

I have reviewed the attached DRMS Form 1930; I have reviewed all attached documents and have ensured that all relevant information regarding this waste has been disclosed.

Print Name: Fred Bourger Phone: 678-3426

Office Symbol: Zia Engineering and Environmental Building # 126

Signature/date (DD MMM YY):

HAZARDOUS WASTE STORAGE FACILITY/HWMC REPRESENTATIVE APPROVAL

I have reviewed the attached DRMS Form 1930 and have reviewed all documents that the generating activity has provided.

Print Name: _____ Phone: _____

Signature/date (DD MMM YY):

Comments:

HAZARDOUS WASTE PROFILE SHEET

NOTE: Explosives, Shock Sensitive, Pyrophoric, Radioactive, and Etiological Waste are not normally accepted by the DRMO

Contact your DRMO for furthur guidance if your waste meets any of these categories.

PART I

A. GENERAL INFORMATION

1. GENERATORS NAME White Sands Missile Range

WASTE PROFILE NO.

2. **FACILITY ADDRESS**
100 Headquarters Ave
WSMR
New Mexico

3. ZIP CODE
88002-5000

4. **GENERATOR USEPA ID**
NM2750211235

5. **GENERATOR STATE ID**
NA

6. **TECHNICAL CONTACT**
Bradley Davis

7. **TITLE**
Geologist

8. **PHONE**
678-3397

B. WASTE INFORMATION

1. **NAME OF WASTE** gasoline product

2A. **USEPA WASTE CODE**

2B. **STATE/LOCAL/HOST-NATION WASTE CODES**

3. **PROCESS GENERATING WASTE** monitoring well sampling and product draw down test

4. **PROJECTED ANNUAL VOL** 10 gallons

5. **MODE OF COLLECTION** drum

6. **IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31?** ☐ YES ☐ NO

7. **IS THIS WASTE RESTRICTED FROM LAND DISPOSAL?** *(40 CFR 268)* ☐ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☐ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS ALREADY? ☐ YES ☐ NO
(If Yes, Enter Reference Standards in Part 3, Block 6)

PART II

1. MATERIAL CHARACTERIZATION *(Optional - Not Required Data)*

COLOR tan | **DENSITY** 0.73 g/ml | **BTU/LB** na

TOTAL SOLIDS na | **ASH CONTENT** na

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☒ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE (Check One) ☐ SOLID ☒ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER _____

OTHER CHARACTERISTICS (Check all that apply)

☒ IGNITABLE ☐ CORROSIVE (D002) ☐ REACTIVE (D003) ☐ WATER REACTIVE ☐ CYANIDE REACTIVE ☐ SULFIDE REACTIVE

Flash Point -50 F *ph* _____

☐ HIGH TOC (≥10%) ☐ LOW TOC (<10%) TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

3. CHEMICAL/MATERIAL COMPOSITION *(List all components and contaminents, including PCB's, and any applicable F-Listed and Underlying Hazardous Constituents)*

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descriptions. e.g., 'sludge', 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE
	none above 1%		

HAZARDOUS WASTE PROFILE SHEET *(Continued)*

WASTE PROFILE NO.

3. MATERIAL COMPOSITION / UNDERLYING HAZARDOUS CONSTITUENTS

CAS #	COMPONENT *(Be as descriptive as possible. Chemical names, as well as generic descrptions. e.g., sludge, 'paint solids', 'water' etc. are acceptable.)*	CONCENTRATION	RANGE

RANGE TOTAL MUST EQUAL AT LEAST 100%

4. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ☒ YES ☐ NO *(If "NO" skip to block 5)*

PROPER SHIPPING NAME

HAZARD CLASS	U.N. or N.A. NO.	PACKING GROUP

ADDITIONAL DESCRIPTION

METHOD OF SHIPMENT ☐ BULK ☒ DRUM ☐ OTHER

DOT REPORTABLE QTY *(RQ)*

EMERGENCY RESPONSE GUIDE EDITION *(YR)*	EMERGENCY RESPONSE NUMBER

5. SPECIAL HANDLING INFORMATION

6. GENERATOR CERTIFICATION

☒ CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)* ☐ USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS)*

EXPLAIN HOW AND WHY THESE DOCUMENTS COMPLY WITH RCRA REQUIRMENTS

CERTIFICATION

I, _____ HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

_____ _____

Signature of Generator's Representative *Date*

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis

Number: 1030-2009050507-001A

Bradley Davis
Zia Engineering & Environmental Consultants LLC
Bldg 126 3rd Floor
PO Box 363
WSMR NM 88002

May 29, 2009

Sample ID:	HTSA-0197-HVW-008-0509	Sampled By:	GG	
Project Name :		Sample Of:	Liquid	
Project Number :		Sample Date:	05/11/2009	12:48
Project Location:		Sample Condition:		
Sample Point:		PO / Ref. No:		

ANALYTICAL DATA

Test	Method	Result	Unit	Detection Limit	Lab Tech.	Date Analyzed
Surface tension @ 75°F	ASTM-D-1331-A	22.6	DYNES/CM		MES	05/29/09
API Gravity @ 60 °F	ASTM-D-4052	61.92	°		BAC	05/29/09
Specific Gravity @ 60/60 °F	ASTM-D-4052	0.7316	_		BAC	05/29/09
Density @ 60 °F	ASTM-D-4052	0.7308	g/ml		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	0.52	cSt		BAC	05/29/09
Viscosity @ 104 °F	ASTM-D-445	27.4	SUS		BAC	05/29/09

Comments:

Hydrocarbon Laboratory Manager

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP or GPA guidelines for quality assurance, unless otherwise stated.

Certificate of Analysis

HOUSTON LABORATORIES
8820 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Analysis Number:	2009050507-001A		
Sample ID:	HTSA-0197-HVW-008-0509	**Date of Sample:**	05/11/09
Project:	HELSTF TSA Long Term Grd.Water	**Time Sampled:**	12:48 PM
Project Location:	WSMR, NM	**Date Sample Analyzed:**	06/01/09
Client	Zia Engineering & Environmental	**Contact(s):**	Bradley Davis
Address	P O Box 363		
Suite / Department	Bldg.126,3rd Floor		
City	WSMR	**State**	New Mexico **Zip** 88002
Phone	575-678-3397 **Ext**	**E-Mail**	bdavis@ws-tech..com
Fax			
Color:	Straw	**Odor:**	Gasoline
Specific Gravity @ 60° F.	0.7316	**API @ 60° F.**	61.92
Carbon Range	C3 - C30+	**Major Range**	C5 - C10

Paraffin	11.1017	wt%	**N-Hexane**	2.226	wt%
Isoparaffins	39.9888	wt%	**Benzene**	0.293	wt%
Naphthenics	10.7061	wt%	**Ethyl Benzene**	2.332	wt%
Aromatics	29.5950	wt%	**Toluene**	4.467	wt%
Olefins	8.5877	wt%	**Meta-Xylene**	3.875	wt%
Unknowns	N/D	wt%	**Para-Xylene**	1.569	wt%
2,2,4-Tri Methylpentane	4.031	wt%	**Ortho-Xylene**	2.028	wt%
			Xylenes	7.472	wt%
Calculated Research Octane	82.489		**EDB**	N/A	wt%
Lead / Manganese	N/A		**EDC**	N/A	wt%
Oxygnates	N/D		**Ethanol**	N/D	wt%
C_{17}	N/D	wt%	**C_{18}**	0.015	wt%
Pristane	N/D	wt%	**Phytane**	N/D	wt%
Naphthalene	0.277	wt%	**2-Methyl Naphthalene**	0.014	wt%
1-Methyl Naphthalene	0.255	wt%			

Gasoline Range:	C_4-C_{13} Indicators:	2,2,4-TMP; MTBE; Olefins, Lead
Diesel Range:	C_7-C_{20} Indicators:	Pristane, Phytane
Condensate Range:	C_2-C_{25}+ Indicators:	No Olefins, Light & Heavies
Heavy Oil:	C_{20+}	

Comments: **N/A Not Applicable N/D None Detected**

Chris Staley

Chris Staley
Hydrocarbon Laboratory Manager

Material Safety Data Sheet

MSDS ID NO.: 0127MAR019
Revision date: 07/15/2009

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name: Marathon Regular Unleaded Gasoline
Synonym: Conventional Regular Unleaded Gasoline
Chemical Family: Petroleum Hydrocarbon
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LLC
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

Gasoline is a complex combination of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons having carbon numbers predominantly greater than C3 and boiling in the range of 85-500 F. Can contain small amounts of dye and other additives (>0.02%) which are not considered hazardous at the concentrations used.

Product information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Marathon Regular Unleaded Gasoline	86290-81-5	100	300 ppm TWA; 500 ppm STEL		

Component Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Saturated Hydrocarbons	Mixture	55-85			
Aromatic Hydrocarbons	Mixture	10-40			
Unsaturated Hydrocarbons	Mixture	1-15			
Toluene	108-88-3	1-15	= 20 ppm TWA	= 100 ppm TWA = 375 mg/m^3 TWA = 150 ppm STEL = 560 mg/m^3 STEL	
Xylene	1330-20-7	2-10	= 100 ppm TWA = 150 ppm STEL	= 100 ppm TWA = 435 mg/m^3 TWA = 150 ppm STEL = 655 mg/m^3 STEL	
1,2,4-Trimethylbenzene	95-63-6	1-5	= 25 ppm TWA	= 125 mg/m^3 TWA = 25 ppm TWA	
Benzene	71-43-2	0.5-3.5	= 0.5 ppm TWA = 2.5 ppm STEL	= 25 ppm Ceiling = 10 ppm TWA = 50 ppm STEL	OSHA Exposure Limit as specified in 1910.1028: =1.0 ppm TWA = 5 ppm STEL = 0.5 ppm Action Level

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA - Vacated PELs - Time Weighted Ave	Other:
Hexane	110-54-3	0-3	= 50 ppm TWA	= 180 mg/m^3 TWA = 50 ppm TWA	
Ethyl Benzene	100-41-4	0.5-2.0	= 100 ppm TWA = 125 ppm STEL	= 100 ppm TWA = 435 mg/m^3 TWA = 125 ppm STEL = 545 mg/m^3 STEL	
Naphthalene	91-20-3	0.1-0.5	= 10 ppm TWA = 15 ppm STEL	= 10 ppm TWA = 50 mg/m^3 TWA = 15 ppm STEL = 75 mg/m^3 STEL	

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

GASOLINE IS A CLEAR OR COLORED LIQUID WITH A STRONG HYDROCARBON ODOR. IT IS A VOLATILE AND EXTREMELY FLAMMABLE LIQUID THAT MAY CAUSE FLASH FIRES. KEEP AWAY FROM HEAT, SPARKS AND OPEN FLAME. THIS PRODUCT CONTAINS BENZENE WHICH MAY CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. CONTAINS MATERIAL THAT HAS CAUSED CANCER BASED ON ANIMAL DATA. NEVER SIPHON THIS PRODUCT BY MOUTH. IF SWALLOWED, THIS PRODUCT MAY GET SUCKED INTO THE LUNGS (ASPIRATED) AND CAUSE LUNG DAMAGE OR EVEN DEATH.

OSHA WARNING LABEL:

DANGER!
EXTREMELY FLAMMABLE.
ASPIRATION (INADVERTENT SUCTION) OF LIQUID INTO THE LUNGS CAN PRODUCE CHEMICAL PNEUMONIA OR EVEN DEATH.
CONTAINS BENZENE WHICH MAY CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS.
CONTAINS MATERIAL THAT HAS CAUSED CANCER BASED ON ANIMAL DATA.

CONSUMER WARNING LABEL:

GASOLINE HEALTH AND SAFETY WARNING STATEMENT:

EXTREMELY FLAMMABLE, VAPORS MAY EXPLODE.
HARMFUL OR FATAL IF SWALLOWED.
LONG TERM EXPOSURE TO VAPORS HAS CAUSED CANCER IN LABORATORY ANIMALS.
KEEP FACE AWAY FROM NOZZLE WHILE FILLING.
KEEP NOZZLE AWAY FROM EYES AND SKIN.
NEVER SIPHON BY MOUTH.
DON'T OVERFILL TANK.
FOR USE AS A MOTOR FUEL ONLY.

STATIC ELECTRICITY, SPARK EXPLOSION, ELECTRONIC DEVICES WARNING:

DO NOT GET BACK IN YOUR VEHICLE WHILE REFUELING.
RE-ENTRY COULD CAUSE STATIC ELECTRICITY BUILD UP.
USE APPROVED CONTAINER.
PUT CONTAINER ON GROUND (NEVER ON OR IN A VEHICLE).
KEEP NOZZLE IN CONTACT WITH CONTAINER.
KEEP CELLULAR PHONES OR OTHER DEVICES IN YOUR VEHICLE DURING REFUELING.

Inhalation:

Exposure to vapor concentrations of gasoline exceeding 1,000 ppm can cause respiratory irritation, headache, dizziness, nausea and loss of coordination. Higher concentrations may cause loss of consciousness, cardiac sensitization, coma and death resulting from respiratory failure.
Intentional overexposure to high concentrations of product vapors (such as huffing) can cause nervous system and brain damage, convulsions and sudden death from cardiac arrest.

Ingestion:

Ingestion may result in nausea, vomiting, diarrhea and restlessness. Aspiration (inadvertent suction) of liquid into the lungs must be avoided as even small quantities in the lungs can produce chemical pneumonitis, pulmonary edema/hemorrhage and even death.

Skin contact: Prolonged and repeated liquid contact can cause defatting and drying of the skin and can lead to irritation and/or dermatitis.

Eye contact: Eye irritation may result from contact with the liquid or exposure to the vapor at concentrations above the TLV.

Carcinogenic Evaluation:

Product information:

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Marathon Regular Unleaded Gasoline 86290-81-5	A2 - Possible Human Carcinogen		A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	

Notes: The International Agency for Research on Cancer (IARC) has determined that there is inadequate evidence for the carcinogenicity of gasoline in humans. IARC determined that limited evidence of carcinogenicity in animals exists. IARC`s overall evaluation of gasoline, in spite of limited carcinogenicity evidence, has resulted in the IARC designation of gasoline as possibly carcinogenic to humans (Group 2B) because gasoline contains benzene.

IARC has determined that there is inadequate evidence for the carcinogenicity of gasoline engine exhaust in humans or animals. However, IARC`s overall evaluation on gasoline engine exhaust, in spite of the absence of carcinogenicity data, has resulted in the IARC designation of gasoline engine exhaust as possibly carcinogenic to humans (Group 2B) because of the presence of certain engine exhaust components.

Component Information:

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Toluene 108-88-3		male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence	A4 - Not Classifiable as a Human Carcinogen	

Name	IARC Carcinogens:	NTP Carcinogens:	ACGIH - Carcinogens:	OSHA - Select Carcinogens:
Xylene 1330-20-7		male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence	A4 - Not Classifiable as a Human Carcinogen	
Benzene 71-43-2	Supplement 7 [1987], Monograph 29 [1982]	Known Human Carcinogen male rat-clear evidence; female rat-clear evidence; male mice-clear evidence; female mice-clear evidence	A1 - Confirmed Human Carcinogen	Present
Ethyl Benzene 100-41-4	Monograph 77 [2000]	male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans	Present
Naphthalene 91-20-3	Monograph 82 [2002]	Reasonably Anticipated To Be A Human Carcinogen male rat-clear evidence; female rat-clear evidence; male mice-no evidence; female mice-some evidence	A4 - Not Classifiable as a Human Carcinogen	Present

Notes:

The International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and OSHA have determined that there is sufficient evidence for the carcinogenicity of benzene in humans (Group 1A).

The International Agency for Research on Cancer (IARC) has concluded that ethyl benzene is possibly carcinogenic to humans (Group 2B).

The International Agency for Research on Cancer (IARC) and the Environmental Protection Agency (EPA) have determined that naphthalene could be a possible human carcinogen.

4. FIRST AID MEASURES

Inhalation: If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

Skin contact: Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

Ingestion: If swallowed, do not induce vomiting and do not give liquids. Immediately call a physician.

Eye contact: Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.

Medical conditions aggravated by exposure: Pre-existing eye, skin, respiratory, liver and/or kidney disorders may be aggravated by exposure to components of this product.

5. FIRE FIGHTING MEASURES

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This product has been determined to be a flammable liquid per the OSHA Hazard Communication Standard, and should be handled accordingly. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the North American Emergency Response Guide 128.

Special protective equipment for firefighters: Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: -50 F
Autoignition temperature: CA 495 F
Flammable limits in air - lower (%): 1.4
Flammable limits in air - upper (%): 7.6

NFPA rating:
Health: 1
Flammability: 3
Instability: 0
Other: -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources. Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:

7. HANDLING AND STORAGE

Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Avoid skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

For use as a motor fuel only. Product should never be used as a solvent due to its flammable and potentially toxic properties. Siphoning by mouth can result in lung aspiration which can be harmful or fatal.

Portable containers of 12 gallons (45 liters) or less should never be filled while they are in or on a motor vehicle or marine craft. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. Containers should be placed on the ground. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers. A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling. Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures:	Local or general exhaust required in an enclosed area or when there is inadequate ventilation.
Respiratory protection:	Approved organic vapor chemical cartridge or supplied air respirators should be worn for exposures to any components exceeding the TWA or STEL. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 1910.134. Self-contained breathing apparatus should be used for fire fighting.
Skin and body protection:	Use nitrile rubber, viton or PVA gloves for repeated or prolonged skin exposure.
Eye protection:	No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields.
Hygiene measures:	No special protective clothing is normally required. Select protective clothing depending on industrial operations. Use mechanical ventilation equipment that is explosion-proof.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance:	Clear Or Colored Liquid
Physical state (Solid/Liquid/Gas):	Liquid
Substance type (Pure/Mixture):	Mixture
Color:	Clear or Colored
Odor:	Strong Hydrocarbon
Molecular weight:	100
pH:	Neutral
Boiling point/range (5-95%):	90-437 F
Melting point/range:	Not determined.
Decomposition temperature:	Not applicable.
Specific gravity:	0.70-0.77
Density:	5.9-6.3 lbs/gal

9. PHYSICAL AND CHEMICAL PROPERTIES:

Bulk density:	No data available.
Vapor density:	3-4
Vapor pressure:	Not determined.
Evaporation rate:	No data available.
Solubility:	Negligible
Solubility in other solvents:	No data available.
Partition coefficient (n-octanol/water):	2.13-4.5
VOC content(%):	100%
Viscosity:	No data available.

10. STABILITY AND REACTIVITY

Stability:	The material is stable at 70 F, 760 mm pressure.
Polymerization:	Will not occur.
Hazardous decomposition products:	Combustion produces carbon monoxide, aldehydes, aromatic and other hydrocarbons.
Materials to avoid:	Strong oxidizers such as nitrates, chlorates, peroxides.
Conditions to avoid:	Excessive heat, sources of ignition, open flame.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:

Name	CAS Number	Inhalation:	Dermal:	Oral:
Marathon Regular Unleaded Gasoline	86290-81-5	>10,000 ppm [Dog]	>5 ml/kg [Rabbit]	>14 ml/kg [Rat]

Lifetime inhalation studies with full vaporized gasoline (67, 292 and 2,056 ppm) produced kidney damage and kidney tumors in male rats but not in female rats or male and female mice. Female mice developed a slightly higher incidence of liver tumors compared to controls at the highest exposure level. Results from separate studies with compounds producing similar effects, i.e., 1,4-dichlorobenzene and perchloroethylene, have shown that the kidney damage and kidney tumors develop via the formation of alpha-2u-globulin, a mechanism unique to the male rat. Humans do not form alpha-2u-globulin, therefore, tumors resulting from this mechanism are not relevant in humans. The biologic significance of the mouse liver tumor response with regard to human health risk is questionable.

Summary of health effect information on gasoline engine exhaust:

Chronic inhalation studies of gasoline engine exhaust in mice, rats and hamsters did not produce any carcinogenic effects. Condensates/extracts of gasoline engine exhaust produced an increase in tumors compared to controls when testing by skin painting, subcutaneous injection, intratracheal instillation or implantation into the lungs. Combustion of gasoline produces gases and particulates which include carbon monoxide, carbon dioxide, oxides of nitrogen and/or sulfur and hydrocarbons. Significant exposure to carbon monoxide vapors decreases the oxygen carrying capacity of the blood and may cause tissue hypoxia via formation of carboxyhemoglobin. Overexposure to CO can cause headache, nausea, nervous system depression, coma and death.

Summary of health effect data on gasoline components:

This product may contain benzene at a level of >0.1%. Repeated or prolonged exposure to benzene at concentrations in excess of the TLV may cause serious injury to blood-forming organs. Significant chronic exposure to benzene vapor has been reported to produce various blood disorders ranging from anemia to certain forms of leukemia (cancer) in man. Benzene produced tumors in rats and mice in lifetime chronic toxicity studies, but the response has not been consistent across species, strain, sex or route of exposure. Animal studies on benzene have demonstrated immune toxicity, chromosomal aberrations, testicular effects and alterations in reproductive cycles and embryo/fetotoxicity, but not teratogenicity.

This product contains >0.1% ethyl benzene (EB). Rats and mice exposed to 750 ppm EB for 6 hours/day, 5 days/week for two years developed kidney tumors in male and female rats and lung tumors in male mice and liver tumor in female mice.

This product contains >0.1% naphthalene. Exposure to naphthalene at 30 ppm for two years caused an increased incidence in lung tumors in female mice. Exposure to 30-60 ppm naphthalene for 2 years caused tumors in the tissue lining of the nose and upper respiratory tract in male and female rats. Evidence of inflammation and tissue injury in target tissues (female mouse lung and rat nose) indicated that cytotoxicity played a significant role in the tumor response. Oral administration of 133-267 mg/kg/day of naphthalene in mice for up to 90 days did not produce mortality, systemic toxicity, adversely affect organ or body weight or produce changes in blood. Repeated oral administration of naphthalene produced an anemia in dogs. Repeated intraperitoneal doses of naphthalene produced lung damage in mice. Repeated high doses of naphthalene has caused the formation of cataracts and retinotoxicity in the eyes of rats and rabbits due to accumulation of 1,2-naphthoquinone, a toxic metabolite. Effects in human eyes is uncertain and not well documented. Pregnant rats administered intraperitoneal doses of naphthalene during gestation gave birth to offspring that had delayed heart and bone development. Pregnant mice given near lethal doses of naphthalene showed no significant maternal toxicity and a reduction in the number of pups per litter, but no gross abnormalities in offspring. Suppressed spermatogenesis and progeny development have been reported in mice, rats and guinea pigs after exposure to high concentrations of naphthalene in their drinking water. Certain groups or individuals, i.e., infants, Semites, Arabs, Asians and Blacks, with a certain blood enzyme deficiency (glucose-6-phosphate dehydrogenase) are particularly susceptible to hemolytic agents and can rapidly develop hemolytic anemia and systemic poisoning from ingestion or inhalation of naphthalene.

This product may contain hexane at a level of >1.0%. Studies in laboratory animals have produced systemic toxicity in blood, spleen and lungs. Fetotoxicity has been observed at hexane concentrations that produced maternal toxicity. Long term exposure to high concentrations of hexane has been shown to cause testicular effects and nervous system damage.

12. ECOLOGICAL INFORMATION

12. ECOLOGICAL INFORMATION

Ecotoxicity effects: Product can cause fouling of shoreline and may be harmful to aquatic life in low concentrations. This product does not concentrate or accumulate in the food chain.

The aquatic toxicity of gasoline is as follows:

FreshwaterToxicity:
LD50 is 8 ppm at 96 hours in bluegill.
TLM is 90 ppm at 24 hours in juvenile shad.

SaltwaterToxicity:
LC50 is 2 ppm at 96 hours in mullet.
LD50 is 1.5 ppm at 96 hours in grass shrimp.
LC50 is 2 ppm at 96 hours in menhaden.
TLM is 91 ppm at 24 hours in juvenile shad.

13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This product as produced is not specifically listed as an EPA RCRA hazardous waste according to federal regulations (40 CFR 261). However, when discarded or disposed of, it may meet the criteria of an "characteristic" hazardous waste. This product could also contain benzene at >0.5 ppm and could exhibit the characteristics of "toxicity" as determined by the toxicity characteristic leaching procedure (TCLP). This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT:

Transport Information: This material when transported via US commerce would be regulated by DOT Regulations.

Proper shipping name:	Gasoline
UN/Identification No:	UN 1203
Hazard Class:	3
Packing group:	II
DOT reportable quantity (lbs):	Not applicable.

TDG (Canada):

Proper shipping name:	Gasoline
UN/Identification No:	UN 1203
Hazard Class:	3
Packing group:	II
Regulated substances:	Not applicable.

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Saturated Hydrocarbons	NA
Aromatic Hydrocarbons	NA
Unsaturated Hydrocarbons	NA
Toluene	NA
Xylene	NA
1,2,4-Trimethylbenzene	NA
Benzene	NA
Hexane	NA
Ethyl Benzene	NA
Naphthalene	NA

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	CERCLA/SARA - Hazardous Substances and their Reportable Quantities
Saturated Hydrocarbons	NA
Aromatic Hydrocarbons	NA
Unsaturated Hydrocarbons	NA
Toluene	= 454 kg final RQ
Xylene	= 100 lb final RQ = 45.4 kg final RQ
1,2,4-Trimethylbenzene	NA
Benzene	= 10 lb final RQ = 4.54 kg final RQ
Hexane	= 2270 kg final RQ = 5000 lb final RQ
Ethyl Benzene	= 1000 lb final RQ = 454 kg final RQ
Naphthalene	= 100 lb final RQ = 45.4 kg final RQ

SARA Section 311/312 The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

Name	CERCLA/SARA 313 Emission reporting:
Saturated Hydrocarbons	None
Aromatic Hydrocarbons	None
Unsaturated Hydrocarbons	None
Toluene	= 1.0 % de minimis concentration
Xylene	= 1.0 % de minimis concentration
1,2,4-Trimethylbenzene	= 1.0 % de minimis concentration
Benzene	= 0.1 % de minimis concentration
Hexane	= 1.0 % de minimis concentration
Ethyl Benzene	= 0.1 % de minimis concentration

Name	CERCLA/SARA 313 Emission reporting:
Naphthalene	= 0.1 % de minimis concentration

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Saturated Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Aromatic Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Unsaturated Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	Not Listed.
Pennsylvania Right-To-Know:	Not Listed.
Massachusetts Right-To Know:	Not Listed.
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Not Listed

Saturated Hydrocarbons

Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Toluene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	developmental toxicity, initial date 1/1/91
New Jersey Right-To-Know:	sn 1866
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan critical materials register list:	= 100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree; teratogen
New Jersey - Environmental Hazardous Substances List:	SN 1866 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ land/water = 1000 lb RQ air

Xylene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 2014
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan critical materials register list:	= 100 lb Annual usage threshold all isomers
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 2014 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ land/water = 1000 lb RQ air

1,2,4-Trimethylbenzene

Saturated Hydrocarbons

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 2716
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	SN 2716 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	carcinogen, initial date 2/27/87 developmental toxicity, initial date 12/26/97 male reproductive toxicity, initial date 12/26/97
New Jersey Right-To-Know:	sn 0197
Pennsylvania Right-To-Know:	Environmental hazard; Special hazardous substance
Massachusetts Right-To Know:	Carcinogen; Extraordinarily hazardous
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin); Carcinogen (skin)
Michigan critical materials register list:	= 100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	carcinogen; extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Present
New Jersey - Special Hazardous Substances:	carcinogen; flammable - third degree; mutagen; teratogen
New Jersey - Environmental Hazardous Substances List:	SN 0197 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ land/water = 10 lb RQ air

Hexane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	sn 1340
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed

Saturated Hydrocarbons

Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 1340 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ air = 1 lb RQ land/water

Ethyl Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	carcinogen, initial date 6/11/04
New Jersey Right-To-Know:	sn 0851
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	carcinogen; flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0851 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ land/water = 1000 lb RQ air

Naphthalene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	carcinogen, initial date 4/19/02
New Jersey Right-To-Know:	sn 1322
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida substance List:	Not Listed.
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan critical materials register list:	Not Listed.
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	carcinogen
New Jersey - Environmental Hazardous Substances List:	SN 1322 TPQ 500 lb
Illinois - Toxic Air Contaminants	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	= 1 lb RQ land/water = 100 lb RQ air

Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Toluene	B2, D2A, D2B	1 %
Xylene	B2, D2A, D2B	
1,2,4-Trimethylbenzene	B3	0.1 %
Benzene	B2, D2A, D2B	0.1 %
Hexane	B2, D2A	1 %
Ethyl Benzene	B2, D2A, D2B	0.1 %
Naphthalene	B4, D2A	1 %

16. OTHER INFORMATION

Additional Information: No data available.

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End of Safety Data Sheet