

National Nuclear Security Administration

Sandia Site Office P.O. Box 5400 Albuquerque, New Mexico 87185-5400



JAN 0 9 2007

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. James Bearzi, Bureau Chief Hazardous Waste Bureau New Mexico Environment Department 2905 Rodeo Park Road East Building 1 Santa Fe, NM 87505

Dear Mr. Bearzi:



On behalf of the Department of Energy (DOE) and Sandia Corporation, DOE is submitting the first Consolidated Quarterly Report for the Environmental Restoration Project that addresses all quarterly reporting requirements required under the Hazardous and Solid Waste Amendments Module of the Resource Conservation and Recovery Act Permit, the Compliance Order on Consent (Consent Order) and the Chemical Waste Landfill Closure Plan for Sandia National Laboratories/New Mexico, EPA ID No. NM5890110518.

In summary, no potentially controversial issues are presented in this report. Pursuant to perchlorate screening, detectable concentrations continue to be found at monitoring well CYN-MW6 (at the Burn Site groundwater area). We will continue to sample and monitor the trend, plus provide the results in the next quarterly report.

As a routine, one copy of this report will be provided to the EPA Region VI office and two copies to the New Mexico Environment Department (one to you and one to Mr. W. Moats). The next quarterly report will be submitted by March 30, 2007.

If you have any questions, please contact me at (505) 845-6036 or Joe Estrada of my staff at (505) 845-5326.

Sincerely,

Patty Wagner

Manager

Enclosure

cc w/enclosure:

- W. Moats, NMED (via Certified Mail)
- L. King, USEPA, Region VI (via Certified Mail)
- T. Skibitski, NMED-OB (c/o D. Sleeman)
- T. Longo, NNSA/NA-56/HQ, GTN

UNM Zimmerman Library (or other Public reading room)

cc w/o enclosure:

- M. Reynolds, NNSA/SSO, MS-0184
- J. Gould, NNSA/SSO, MS-0184
- A. Blumberg, SNL/NM, Org. 11100, MS-0141
- D. Miller, SNL/NM, Org. 6765, MS-0718
- P. Freshour, SNL/NM, Org. 6765, MS -1087
- B. Langkopf, SNL/NM, Org. 6765, MS- 1087
- M. J. Davis, SNL/NM, Org. 6765, MS -1087

Records Center, SNL/NM, Org. 6765, MS -1087

CERTIFICATION STATEMENT FOR APPROVAL AND FINAL RELEASE OF DOCUMENTS

Document title: Consolidated EPA Quarterly Report, December 2006

Document author: Paul Freshour, 6765

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Signature:_

Peter B. Davies

Director

Nuclear Energy & Global Security Technologies

Division 6700

Sandia National Laboratories/New Mexico

Albuquerque, New Mexico 87185

Operator

Date

and

Signature:_____ Patty Wagner

Manager

U.S. Department of Energy

National Nuclear Security Administration

Sandia Site Office

Owner and Co-Operator



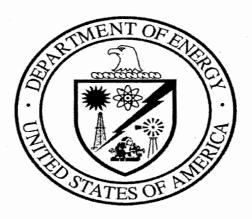
Sandia National Laboratories, New Mexico (SNL/NM)

Environmental Restoration Project

A Department of Energy Environmental Cleanup Program

CONSOLIDATED
Quarterly Report

DECEMBER 2006



United States Department of Energy Sandia Site Office

CONSOLIDATED QUARTERLY REPORT

December 2006

SANDIA NATIONAL LABORATORIES/NEW MEXICO (SNL/NM)

ENVIRONMENTAL RESTORATION PROJECT

DOE:

SANDIA SITE OFFICE

CONTRACTOR:

SANDIA CORPORATION

PROJECT MANAGER: J. PAUL FRESHOUR

NUMBER OF POTENTIAL RELEASE SITES SUBJECT TO THIS PERMIT: 64

SUSPECT WASTE: radionuclides, metals, organics, and explosives

OVERVIEW

This first Consolidated Quarterly Report for the Sandia National Laboratories Environmental Project addresses all quarterly reporting requirements required under the Hazardous and Solid Waste Amendments (HSWA) Module of the Resource Conservation and Recovery Act (RCRA) Permit, the Compliance Order on Consent (Consent Order), and the Chemical Waste Landfill (CWL) Closure Plan. The following entities are addressed in these Sections:

SECTION I

ER Quarterly

SECTION II

Chemical Waste Landfill

SECTION III

Perchlorate Screening

For this first consolidated period, realignment of the reporting periods was required. This first period reports activities as follows:

ER Project (September – October 2006).

Chemical Waste Landfill (July, August, September, October 2006).

Perchlorate Screening (July, August, September 2006 sampling period).

Future Consolidated reports will report on a standard quarter for all Sections. The next quarterly report will cover November and December 2006, and January 2007 and will be submitted by March 30, 2007.

SECTION I

1.0 Introduction

The technical status of each ongoing activity in the Environmental Restoration (ER) Project is discussed in an Activity Data Sheet (ADS), which corresponds to an Operable Unit (OU) for assessment and remediation, or to a specific functional area of the project in the case of Project Management and Technical Support.

2.0 Work Completed in This Quarter (September – October 2006)

2.1 ADS 1285 Technical Support

2.1.1 ER Site Tracking (ERST)

• ER site reviews were completed and delivered for the following:

10/30/06: Land Use Permit # 230, TA-V Berm and Security Buffer.

2.1.2 Risk Assessment

• Risk-related documents and references were archived.

2.1.3 Environmental Restoration Field Office (ERFO) Support

- Fourth quarter sampling was completed for TAV ground water monitoring (GWM), Canyons (CYN) GWM and the Ground Water Protection Program (GWPP).
- First quarter sampling was completed for CWL GWM and nearly completed for Tijeras Arroyo Groundwater (TAG) Investigation (three wells were sampled in November, the remaining six wells will be sampled in December).
- Waste management was supported in discharging well water and decontamination water to the sanitary sewer (1759 gallons).
- Field sampling was completed for SWMU 58.
- External customer supported ERFO field support; placement of signs for 10336 (Emergency Operations) in Area 5.

2.1.4 Geographic Information System (GIS) Program

Requests received (September 1, 2006 to October 31, 2006)

GPS:	2	-50%	(4 last period)
Data:	4	+100%	(2 last period)
Maps	37	-32%	(54 last period)
Total:	43*	-37%	(59 last period)

Requests completed (September 1, 2006 to October 31, 2006)

GPS: 2 Data: 4 Maps: 37

Total: 43 completed out of 43 received (completion rate 100%)

2.1.5 Environmental Restoration Data Management System (ERDMS)

- There are now 2,559,099 data records in the ERDMS.
- 71 analytical data packages containing 17,247 new data points were processed and loaded into the ERDMS.
- 9,312 new data validation qualifiers and descriptive flags were entered into the ERDMS.
- 49 tables were generated in support of SWMUs 8, 58, CAMU (Corrective Action Management Unit), groundwater monitoring, MWL (Mixed Waste Landfill).
- 51 data packages were submitted to the Records Center.
- Database clean-up activities continued.

2.1.6 ES&H and Security (ESHSEC) Records Center

- 419 ER records were received and 462 records were processed into the records management system. The difference is due to records received at the end of one month but not processed until the next month.
- 142 records of the 575 customer requests were retrieved for reviews at the record center. 350 pages were copied.
- Site Closure: Customer Funded Record Center RC analysts continue to work with ER staff to identify NFA references and records that still need to be submitted to the RC.
- Imaging: Records Center staff has imaged 216 records during this quarter.
- 545 records were sent to Inactive Storage.

^{*} Map requests were down from last quarter with most ER Requests for SWMU 58 and groundwater. Requests for EM included RCRA maps for Permits, and data mining and maps for Kuai.

2.1.7 SMO/Data Validation

- The SMO packaged and shipped 353 samples to contract laboratories for 6 ER/LTS projects. The sample volume for this quarter was approximately 20% greater, for only 2 months, when compared to the previous quarter.
- GEL and Severn Trent met contractual 30-day TAT (greater than 90% of the time) on 30-day requests. The labs also met customer requirements on 15-day rush for final data packages during this quarter.
- 94 data packages were sent through contract verification review with an average TAT
 of two calendar days. 46% of the data packages were for ER/LTS projects. The
 volume of ER/LTS packages was 20% more for the two month period when compared
 to last quarter.
- 57 total data packages were validated for ER/LTS. The majority of the data packages were for groundwater monitoring and SWMU 58. The average TAT for packages at validation was four calendar days.

Fifty percent of the work processed during this period was in support of SWMU 58. Forty percent of the work supported groundwater monitoring. Ten percent of the work supported CAMU operations.

2.2 ADS 1289 Mixed Waste Landfill (MWL)

- Subgrade preparation activities at the MWL were initiated on June 5, 2006, and continued through the end of this quarter. Soil screening at the borrow area was conducted to obtain native material for the subgrade. The MWL perimeter fence was removed, and the landfill surface was cleared and grubbed, with rocks and vegetative material removed from the cover and stockpiled onsite. The first lifts of subgrade material were placed on October 31, 2006. The total thickness of the subgrade will vary from 2 to 40 inches across the MWL by the time subgrade preparation is complete.
- A geophysical survey was conducted of the MWL classified area using magnetometer and EM-61 techniques. Results show exact delineation of the pit locations at the MWL, and will be used to supplement geophysical survey data collected earlier on the remainder of the landfill.
- The MWL Annual Groundwater Report for 2006 was drafted and submitted for Management review. Groundwater sampling was conducted in April 2006 indicated that chromium concentrations in MWL-MW3 exceeded the EPA MCL. This exceedance is believed due to corrosion of the monitoring well's stainless steel screen.
- Citizen Action issued a "Notice of Intent to Sue" to DOE, Sandia, NMED, EPA and DOD regarding the MWL Regulatory path forward, and alleged deficiencies with the MWL monitoring well network.

- On June 21, 2006, the DOE Office of Inspector General (OIG) issued a Management Referral memorandum entitled "Possible Deficiencies in Monitoring Wells at Sandia National Laboratories Mixed Waste Landfill". The memorandum requested a written response from the DOE regarding an attached report alleging deficiencies in the Mixed Waste Landfill (MWL) groundwater monitoring program.
- Sandia/DOE reviewed the MWL monitoring well network, and completed a formal
 response which was submitted to the OIG in mid-September. The MWL monitoring
 well network was determined to be functioning as designed, and the allegations
 regarding deficiencies with the wells were determined by NNSA to be unfounded; a
 notification of dismissal from the OIG has not yet been received. No corrective
 actions were recommended by the NNSA.

2.3 ADS 1295 <u>Drain and Septic Systems (DSS)</u>

- AOC 1101 (Building 885 Septic System (TA-I) is pending NMED acceptance for Corrective Action Complete (CAC) and is one of five sites remaining to undergo the Permit Modification process.
- Final signatures were obtained to complete the administrative closure process for nineteen DSS sites:
 - o 48 Bldg. 904 Septic System and HE Drain System (TA-II)
 - o 135- Bldg. 906 Drain System (TA-II)
 - o 136 Bldg. 907 Septic System and HE Drain System (TA-II)
 - o 159 Bldg. 935 Septic System and Drywell (TA-II)
 - o 165 Bldg. 901 Septic System (TA-II)
 - o 166 Bldg. 919 Septic System and Seepage Pit (TA-II)
 - o 167 Bldg. 940 Septic System and Seepage Pits (TA-II)
 - o 1006 Bldg. 6741 Septic System (TA-III)
 - o 1007 Bldg. 6730 Septic System (TA-III)
 - o 1010 Bldg. 6536 Septic System and Seepage Pit (TA-III)
 - o 1015 Former MO 231-234 Septic System (TA-V)
 - 1020 MO-146, MO-235, and T-40 Septic System (TA-III)
 - o 1024 MO 242-245 Septic System (TA-III)
 - o 1028 Bldg. 6560 Septic System (TA-III)
 - o 1029 Bldg. 6584 North Septic System (TA-III)
 - o 1083 Bldg. 6570 Septic System (TA-III)
 - o 1086 Bldg. 6523 Septic System (TA-III)
 - o 1108 Bldg. 6531 Seepage Pits (TA-III)
 - o 1110 Bldg. 6536 Drain System (TA-III)
- Forty-one DSS sites are awaiting regulatory approval for the September 2006 and March 2006 permit modification requests.

2.4 ADS 1302 Technical Area I

 No work scope is remaining in the Technical Area I Operable Unit. This OU has been closed and will not be included in the next quarterly report. Site closure activities that may be remaining will be included in Project Management and reported in that section.

2.5 ADS 1303 Technical Area II

• Two Technical Area II sites are awaiting regulatory approval of the September 2005 permit modification request:

SWMU 1: Radioactive Waste Landfill SWMU 3: Chemical Disposal Pits

2.6 ADS 1306 Technical Areas 3 and 5

(Scope for the Liquid Waste Disposal System [LWDS] is included with this ADS).

- In October, the NMED issued a Certificate for Corrective Action Complete with controls for SWMU 105 (Mercury Spill at Building 6536). SWMU 105 is one of five sites remaining to undergo the permit modification process.
- Five Technical Area 3/5 sites are awaiting regulatory approval of the September 2005 and March 2006 permit modification requests:

SWMU 4: LWDS Surface Impoundments

SWMU 5: LWDS Drainfield SWMU 52: LWDS Holding Tanks SWMU 78: Gas Cylinder Disposal Pit SWMU 196: Building 6597 Cistern

2.7 ADS 1309 Tijeras Arroyo

• Four Tijeras Arroyo sites are awaiting regulatory approval of the September 2005 and March 2006 permit modification requests:

SWMU 45: Liquid Discharge

SWMU 46: Old Acid Waste Line Outfall SWMU 233: Storm Drain System Outfall SWMU 234: Storm Drain System Outfall

2.8 ADS 1326 Project Management

- The SNL ER Project Management structure was modified significantly in this reporting period which crosses the FY0206/2007 boundary. ER Project work scope, originally planned for completion at the end of FY2006, was delayed. Funding available for implementation of the remaining work scope along with the quantity of work remaining does not support the previous management structure. The previous structure of 3 departments managed by a Level II Project Manager has been reduced to a Staff Level Project Manager reporting to a Level I Department Manager. Any communication concerning implementation of the ER Project should be initially directed to the Staff Level Project Manager.
- Operable units with only regulatory and administrative closure activities remaining will be closed and those activities will be tracked and managed under the PM ADS.

2.9 ADS 1330 <u>Site-Wide Hydrogeologic Characterization</u>

TA-3/5 Groundwater

Quarterly sampling was performed.

Canyons Groundwater

Quarterly sampling was performed.

Tijeras Arroyo Groundwater

• Notified the NMED of increasing TCE concentrations in groundwater samples from TJA-3.

Mixed Waste Landfill Groundwater

• No groundwater sampling was performed.

Chemical Waste Landfill Groundwater

Semi-annual sampling was performed.

DSS Groundwater

No groundwater activities were performed.

2.10 ADS 1332 Foothills Test Area

- In September, 86 samples were collected from five boreholes at Feature FF associated with Site 58 (Coyote Canyon Blast Area). The collection effort followed the Sample and Analysis Plan (SAP) that was written in response to a Notice of Disapproval received from the NMED in June 2006.
- SWMU 28-2 (Mine Shaft) is pending NMED acceptance for Corrective Action Complete (CAC). This site together with SWMUs 8 [Open Dump (Coyote Canyon Blast Area)] and 58 (Coyote Canyon Blast Area) are three of the five sites remaining to undergo the Permit Modification process.

2.11 ADS 1333 Canyons Test Area

 No work scope is remaining in the Canyons Test Area Operable Unit. This OU has been closed and will not be included in the next quarterly report. Site closure activities that may be remaining will be included in Project Management and reported in that section.

2.12 ADS 1334 Central Coyote Test Area

- One Central Coyote Test site is awaiting regulatory approval of the March 2006 permit modification request:
 - o SWMU 68: Old Burn Site.

2.13 ADS 1335 Southwest Test Area

- One Southwest Test site is awaiting regulatory approval of the March 2006 permit modification request:
 - o SWMU 91: Lead Firing Site.

2.14 ADS 1345 Corrective Action Management Unit (CAMU)

CAMU Post-Closure Care Operations

Vadose-zone monitoring, leachate removal, and post-closure inspections continued as required in the permit. Activities included the following:

- Weekly pumping of leachate from the leachate collection and removal system.
- Weekly inspection of the less-than-90-day area.
- O Quarterly inspection of the site, (September 2006), including containment cell cover, storm water diversion structures, security fences, gates, and signs.

- o Quarterly monitoring of the VZMS was conducted in September 2006.
- o Waste management associated with the leachate collection was conducted.
- No sampling of the leachate was conducted during this reporting period per authorization by the NMED (June 6, 2006) to reduce the sampling frequency.

CAMU Waste Management Activities

For this quarter (September – October 2006),

- Waste stored on site at the beginning of this period:
 - 312 gallons of leachate.
 - 5 lbs PPE, paper wipes, plastic drum cap, plastic drum pump.
- Waste generated on-site during the period:
 - 267 gallons of leachate.
 - 0.5 lbs PPE.
- o Waste removed from site by the Hazardous Waste Management Facility:
 - 285 gallons of leachate.
 - 0.5 lbs PPE.
- o Waste remaining on site at the end of this period:
 - 294 gallons of leachate.
 - 0.5 lbs PPE.

Regulatory Activities

- On September 27, 2006, the CAMU Vadose Zone Monitoring System Annual Monitoring Results Report was submitted to the NMED.
- On October 3, 2006, the NMED performed an audit of the CAMU. There were no findings.

3.0 Estimate of the percentage of work completed

See discussions under each ADS.

5.0 Projected Work for the Next Quarter

 Work will continue on the following tasks: groundwater monitoring; waste management; data management; administrative closure; CWL activities; MWL CMIrelated activities; and documentation (primarily RSI/NOD responses).

6.0 Summaries of Contacts Pertaining to Corrective Action

September 2006

• None.

October 2006

• None.

7.0 Summary of Changes to Project Implementation

• No significant changes have been made to project implementation during this reporting period.

SUMMARY OF QUARTERLY REPORT

September–October Fiscal Year 2006

1. General.

The Quarterly Report is a deliverable requirement stated in the Resource Conservation and Recovery Act (RCRA), Hazardous and Solid Waste Amendments Act (HWSA) Permit, Section F.1. The Quarterly Report discusses the technical status of each ongoing activity in the Environmental Restoration (ER) Project.

The progress for the past quarter is reported by Activity Data Sheet (ADS), which correspond to Operable Units (OUs) for assessment and remediation, or to a specific functional area of the project in the case of Project Management and Technical Support.

2. Contents.

- a. The status for each ADS contains the following, if applicable:
 - description of work completed, and
 - summaries of all findings.
- b. The general status items for the ER Project, which follow ADS status, contain the following:
 - summaries of all problems or potential problems,
 - projected work for the next quarter, and
 - summaries of changes to project implementation.

3. Controversial Issues.

No potentially controversial issues are presented in this report that have not been identified previously to the regulatory agencies.

Sandia National Laboratories/New Mexico

CHEMICAL WASTE LANDFILL QUARTERLY CLOSURE PROGRESS REPORT

December 2006

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LIST OF APPENDICES

Appendix A Chemical Waste Landfill Groundwater Monitoring Assessment Report, November 2006

Appendix B Replacement pages for the August 22, 2006 CWL Quarterly Closure Progress

Report, revised Table A-8.

ACRONYMS AND ABBREVIATIONS

CFR Code of Federal Regulations
CMS corrective measures study
CWL Chemical Waste Landfill
DOE U.S. Department of Energy
HWB Hazardous Waste Bureau
LE Landfill Excavation

NMAC New Mexico Administrative Code NMED New Mexico Environment Department

PA Permit Application
PCCP Post-Closure Care Plan
RAP Remedial Action Proposal

RCRA Resource Conservation and Recovery Act
RSI Request for Supplemental Information

Sandia Corporation

SNL/NM Sandia National Laboratories/New Mexico

TSCA Toxic Substances Control Act VCM voluntary corrective measure

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Chemical Waste Landfill

This Sandia National Laboratories/New Mexico (SNL/NM) Chemical Waste Landfill (CWL) Quarterly Closure Progress Report has been prepared pursuant to the CWL Final Closure Plan and Postclosure Permit Application (Closure Plan) (SNL/NM December 1992). This section documents activities at the CWL for the time period of July, Agusut, September, and October of 2006.

1.0 INTRODUCTION

All voluntary corrective measures (VCMs) activities have been completed. The CWL Landfill Excavation (LE) VCM Final Report was submitted to the NMED in April 2003 (SNL/NM April 2003) and approved by the NMED in December 2003 (Moats December 2003). The Site Operational Boundary Closure Addendum to the LE VCM Final Report was submitted to the NMED in August 2005 (SNL/NM August 2005a) and approved by the NMED on October 25, 2005 (Bearzi October 2005). With the submittal of the Waste Management Addendum to the LE VCM Final Report in the February 22, 2006 CWL Quarterly Closure Progress Report (SNL/NM February 2006), as Appendix B, all LE VCM regulatory deliverables have been submitted. With the completion of the VCMs, technical meetings will be held on an as-needed basis. The public will continue to be informed of significant events through the Environmental Restoration (ER) project public meeting process.

Installation of the cover as an interim measure was requested in April 2004 (SNL/NM April 2004) and approved with conditions in September 2004 (Kieling September 2004); the cover was completed in September 2005 in accordance with the conditions of approval. All field activities, with the exception of long-term monitoring, have been completed at the CWL.

Chapter 2.0 addresses closure progress and regulatory deliverables. Chapter 3.0 discusses monitoring activities, and Chapter 4.0 outlines the activities to be conducted during the next quarterly reporting period (November 2006 through January 2007).

2.0 CLOSURE PLAN PROGRESS AND DELIVERABLES

Closure planning and reporting activities related to the CMS continued this quarter. In May 2003, the DOE and Sandia submitted the CMS Report, the RAP, and the Post-Closure Care Plan (PCCP)/Permit Application (PA) (SNL/NM May 2003) to the NMED as a Class 3 Closure Plan Amendment request. The NMED rejected the CMS Report in December 2003 (Kieling December 2003) and postponed review of the RAP and PCCP/PA. On September 14, 2004, the NMED documented that the DOE and Sandia were required to revise and resubmit the PCCP/PA to address the post-closure permitting requirements of Title 20, Chapter 4, Part 1, Section 900 of the New Mexico Administrative Code (NMAC) incorporating Title 40, Part 270, Section 28 of the Code of Federal Regulations (CFR) (Kieling September 2004). The DOE and Sandia submitted the revised CMS Report on December 21, 2004 (SNL/NM December 2004a). The revised RAP was included as an annex in the revised CMS Report, consistent with

NMED direction. The December 2004 submittal also included proposed revisions to Chapter 12 of the Closure Plan that resulted from the NMED rejection of the CMS Report. The DOE and Sandia submitted the revised PCCP for the CWL on September 8, 2005 (SNL/NM September 2005).

In February of this calendar year, the DOE and Sandia received NMED revisions to the proposed amendment to Chapter 12 of the Closure Plan. The purpose of these additional revisions is to update information in the original proposal, and to set forth more clearly the current regulatory path preferred by the NMED. In March, the DOE and Sandia responded to the comments from the NMED on the proposed amendment to the Closure Plan (SNL/NM March 2006). Informal interactions with NMED staff indicate that NMED action on the CMS Report, the PCCP and the Chapter 12 revisions is expected in the spring of 2007.

Upcoming CWL Closure Plan reporting activities include preparing and submitting the Final Resource Conservation and Recovery Act (RCRA) Closure Report, expected to be submitted in 2007, after NMED approval of the CMS Report has been received. The Final RCRA Closure Report will document both the backfilling of the former CWL and the installation of the interim cover.

The Final Toxic Substances Control Act (TSCA) Closure Report documents the completion of all closure activities specified in the "Risk-Based Approval Request, 40 CFR 761.61(c) Risk-Based Method for Management of PCB [Polychlorinated Biphenyl] Materials" (SNL/NM October 2001), approved by the U.S. Environmental Protection Agency (EPA) in June 2002 (Cooke June 2002). The Final TSCA Closure Report was submitted to the EPA and NMED on November 2, 2006 (SNL/NM November 2006).

3.0 WATER MONITORING ASSESSMENT

In October 2006, samples were collected from background wells (CWL-BW3 and CWL-BW4A) and monitoring wells (CWL-MW2BL, CWL-MW2BU, CWL-MW4, CWL-MW5L, CWL-MW5U, CWL-MW6L, and CWL-MW6U). The samples were analyzed for 40 CFR 264 (Appendix IX) VOCs and total metals plus iron. No analytes were detected at concentrations exceeding the associated EPA MCLs. Appendix A documents the data results and assessment report for the October 2006 sampling event.

Recently, DOE and Sandia conducted a review of acetone detections in various SNL groundwater monitoring samples. In August 2006, it was determined that numerous SNL samples, including those for the CWL, analyzed in late April and early May 2006 were suspect. It was discovered that, during this time period, the off-site laboratory analyzed two non-SNL samples with high levels of acetone along with SNL/NM samples. The information affected by this, which was reported in the August 22, 2006 CWL Quarterly Closure Progress Report (SNL/NM August 2006) has been amended and provided in Appendix B of this report; the only changes necessary were associated with the data validation qualifiers in Table A-8.

No soil-gas sampling was performed during this reporting period. Soil-gas sampling is not required under the Closure Plan, but is expected to be a requirement for post-closure care (Kieling December 2003).

4.0 PROJECTED ACTIVITIES FOR THE UPCOMING QUARTER

No activities are projected pending issuance of the NMED action on the Class 3 amendment, including the CMS Report, the PCCP, and the Chapter 12 revisions.

REFERENCES

Bearzi, J.P. (New Mexico Environment Department), December 2004. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Sandia National Laboratories Response to Comments on the Chemical Waste Landfill, Corrective Measures Study Report, May 2003, Sandia National Laboratories, EPA ID #NM5890110518, HWB SNL 03-013." December 17, 2004.

Bearzi, J.P. (New Mexico Environment Department), October 2005. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Notice of Approval: Chemical Waste Landfill Site Operational Boundary Closure Addendum to the Landfill Excavation Corrective Measure Final Report; August 2005, Sandia National Laboratories, NM5890110518, HWB-SNL-05-021." October 25, 2005.

Cooke, G. (U.S. Environmental Protection Agency Region 6), June 2002. Letter to M.J. Zamorski (U.S. Department of Energy), "Approval of the TSCA Risk-Based Approach Request for the CWL." June 26, 2002.

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Kieling, J.E. (New Mexico Environment Department), September 2004. Letter to P. Wagner (U.S. Department of Energy) and P.B. Davies (Sandia Corporation), "Approval With Conditions of the Landfill Cover Interim Measure at the Chemical Waste Landfill, Sandia National Laboratories, NM5890110518, HWB-SNL-03-013." September 22, 2004.

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Sandia National Laboratories/New Mexico (SNL/NM), August 2000. "Risk-Based Approach for Excavation and Backfilling of the Chemical Waste Landfill," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), October 2001. "Risk-Based Approval Request, 40 CFR 761.61 (c) Risk-Based Method For Management of PCB Materials," Chemical Waste Landfill Remediation and Corrective Action Management Unit, Sandia National Laboratories, Albuquerque, New Mexico. October 24, 2001.

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Sandia National Laboratories/New Mexico (SNL/NM), May 2003. "Chemical Waste Landfill Corrective Measures Study Report, Remedial Action Proposal, Post-Closure Care Plan and Permit Application, and Chapter 12 of the Closure Plan Revision," Sandia National Laboratories, Albuquerque, New Mexico.

Sandia National Laboratories/New Mexico (SNL/NM), April 2004. "Request for Approval to Install the Vegetative Soil Cover Presented in the RAP as an Interim Measure," Sandia National Laboratories, Albuquerque, New Mexico. April 19, 2004.

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APPENDIX A
Chemical Waste Landfill Semiannual Groundwater Monitoring Assessment
Report, December 2006

CHEMICAL WASTE LANDFILL SEMIANNUAL GROUNDWATER MONITORING ASSESSMENT REPORT October-December 2006

Sandia National Laboratories/New Mexico Environmental Restoration Project Department 6146 Albuquerque, New Mexico 87185-1148

December 2006

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ABBREVIATIONS AND ACRONYMS

BW background well

CFR Code of Federal Regulations
CWL Chemical Waste Landfill

EB equipment blank

EPA U.S. Environmental Protection Agency

FB field blank

FOP Field Operating Procedure

FY07 Fiscal Year 2007

MCL maximum contaminant level MDL method detection limit μg/L microgram per liter

mL milliliter

MW monitoring well

NMED New Mexico Environment Department

QC quality control

RPD relative percent difference
Sandia Sandia Corporation
SC specific conductance

SNL/NM Sandia National Laboratories/New Mexico

TB trip blank
TCE trichloroethene

VCM Voluntary Corrective Measure

VE Vapor Extraction

VOC volatile organic compound

1.0 Introduction

This report was prepared pursuant to Sections 1.2.1.6 and 1.3 of the *Chemical Waste Landfill [CWL] Final Closure Plan and Postclosure Permit Application* (SNL/NM December 1992). The activities associated with the groundwater monitoring task are summarized as follows.

Sandia Corporation (Sandia) performed Fiscal Year 2007 (FY07) semiannual groundwater sampling at the CWL, Sandia National Laboratories/New Mexico (SNL/NM) (Figure A-1) between October 2 and October 20, 2006. CWL groundwater sampling is required by the interim status standards of the Resource Conservation and Recovery Act contained in Title 40 of the Code of Federal Regulations (CFR), Part 265, Subpart F, and the State of New Mexico Hazardous Waste Management Regulations. This groundwater sampling event was conducted in conformance with procedures outlined in the Sampling and Analysis Plan for Groundwater Assessment Monitoring at the Chemical Waste Landfill, Appendix G, Revision 4 of the CWL Final Closure Plan (SNL/NM December 1992).

In March 1998, the New Mexico Environment Department (NMED) approved eliminating chlorinated dioxins, furans, and pesticides from the Appendix IX list of constituents for CWL groundwater monitoring (Dinwiddie March 1998). In May 2000, the NMED approved the following changes to Appendix G, Revision 4 (Bearzi May 2000):

- Biannual frequency (every other year) for Appendix IX constituents
- Semiannual frequency (twice a year) for volatile organic compounds (VOC) and metals

This report describes groundwater sampling activities and presents analytical results from the second FY07 semiannual groundwater assessment monitoring period. In October 2006, samples were collected from background wells (BW) (CWL-BW3 and CWL-BW4A) and monitoring wells (MW) (CWL-MW2BL, CWL-MW2BU, CWL-MW4, CWL-MW5L, CWL-MW5U, CWL-MW6L, and CWL-MW6U) (Figure A-2). These samples were analyzed for 40 CFR 264 (Appendix IX) VOCs and total metals plus iron. All analytical results from the October 2006 sampling of all CWL monitoring wells are included in this report.

Groundwater samples were not collected from CWL-MW1A or CWL-MW3A because these wells partially filled with sediment during the Vapor Extraction (VE) Voluntary Corrective Measure (VCM) while being used as VE wells, do not contain water, and cannot be restored for

the purpose of compliance groundwater monitoring. In July 2003, Sandia installed a BaroBallTM in CWL-MW2A at SNL/NM to investigate whether the cause of trichloroethene (TCE) contamination was the result of VOC vapors entering the well casing and being pushed downward to the groundwater via barometric pumping during high atmospheric pressure periods. On December 16, 2003, after six months of operation, the BaroBallTM was to be removed from CWL-MW2A so that groundwater sampling could be performed. During the manual removal of the BaroBallTM, the top piece of casing (approximately 9 feet long) was accidentally broken. When the top casing piece separated, annular material from 2 to 3 feet above the separated joint fell into the well. With NMED approval, CWL-MW2A was plugged and abandoned in June 2004 (SNL/NM July 2004).

Three of the monitoring wells (CWL-MW2B, CWL-MW5, and CWL-MW6) are multi-completion wells with two separate polyvinyl chloride and screen intervals. One is screened across the water table, and the other is screened at an interval approximately 30 feet below the water table. The wells screened across the water table are designated as CWL-MW2BU, CWL-MW5U, and CWL-MW6U to indicate the upper ("U") screened well completions. The wells screened below the first water-bearing zone are designated CWL-MW2BL, CWL-MW5L, and CWL-MW6L to indicate the lower ("L") screened well completions. Further discussion of the completion of these wells is presented in the CWL Groundwater Assessment Report (SNL/NM October 1995). The following sections provide descriptions of the field methods used and a discussion of the analytical and quality control (QC) results.

2.0 Field Methods and Measurements

The field measurements collected as part of groundwater sampling activities are in conformance with the "Sampling and Analysis Plan for Groundwater Assessment Monitoring at the Chemical Waste Landfill," Appendix G of the CWL Closure Plan (SNL/NM December 1992).

Groundwater monitoring is being performed according to Appendix G, Revision 4 of the Closure Plan (SNL/NM December 1992) and updated SNL/NM Environmental Restoration Project field operating procedures (FOP) (SNL/NM November 1995, September 1996, and February 1997).

2.1 Groundwater Elevation Determinations

Groundwater elevations at the CWL wells were determined using a Solinst® water level indicator prior to purging activities. Measurements were taken in accordance with FOP 95-02,

A Technical Procedure for the Measurement of Static Water Levels (SNL/NM November 1995) until three replicate measurements agreed to within 0.05 foot of each other. The portion of the well sounder in contact with the groundwater was decontaminated between measurements at different wells (SNL/NM February 1997). CWL-MW1A and CWL-MW3A were checked in October 2006 and did not contain water. Table A-1 summarizes the depth-to-water measurements for all CWL wells, and Attachment A presents complete field measurement information.

2.2 Well Evacuation

A Bennett Company groundwater sampling system was used to collect groundwater samples from all wells, except CWL-MW2BU, CWL-MW5L, and CWL-MW6L. Because these are small-diameter wells (less than 2 inches), dedicated sampling systems manufactured by QED Environmental Systems, Inc. were used to collect samples. Prior to sample collection, each monitoring well was purged to remove stagnant well casing water. More than one day was required to complete purging and sampling at CWL-BW3, CWL-BW4A, CWL-MW2BU, CWL-MW5U, and CWL-MW6U, due to the slow recharge rate of the monitoring wells. Monitoring wells purged to dryness were allowed to recover before sampling to ensure the most representative groundwater sample possible given the low yield of these wells. CWL-MW2BL and CWL-MW4 were purged a minimum of three well-bore volumes prior to sampling. CWL-MW5L and CWL-MW6L were each purged a minimum of two tubing water volumes prior to sampling. CWL-MW2BU was purged to dryness twice then sampled. A total of 3,300 milliliters (mL) of water was purged from CWL-MW2BU. Based upon historical sampling events, CWL-MW2BU will purge dry between 500 and 2,500 mL.

Collection of field analytical measurements and groundwater samples was performed in accordance with procedures described in FOP 94-48, *Sampling Groundwater Monitoring Wells* (SNL/NM September 1996), as required by the CWL Sampling and Analysis Plan (SNL/NM December 1992). Groundwater temperature, specific conductance (SC), and pH were measured using a YSITM Model 620 Water Quality Meter. Turbidity was measured with a HachTM Model 2100P portable turbidity meter. Groundwater stability is considered acceptable when measurements are within 5 nephelometric turbidity units, 0.2 pH units, and 0.2 degrees Celsius, and SC is within 1 percent or 10 micromhos per centimeter (whichever is greater). Monitoring wells CWL-MW2BL, CWL-MW4, CWL-MW5L, and CWL-MW6L were purged until three stable measurements of turbidity, temperature, SC, and pH were obtained. All purged

water was placed into 55-gallon containers and stored at the Building 9925 waste accumulation area pending the results of the analyses. Table A-2 summarizes average pumping rates, pumping duration, and well discharge volumes for each well sampled. Table A-3 summarizes temperature, pH, SC, and turbidity measurements. Field Measurement Logs in Attachment A document well purging and water quality measurements.

2.3 Groundwater Sample Collection

All groundwater samples were collected directly from the pump discharge tube into laboratory-prepared sample containers. Chemical preservatives for samples intended for chemical analyses were added to the sample containers at the laboratory prior to shipment to SNL/NM.

Table A-4 presents the sample number assigned to each sample. Table A-5 summarizes the analyses performed, analytical methods, sample containers, preservatives, and holding time requirements. Section 3.0 of this report summarizes the analytical results. Analysis Request/Chain-of-Custody documentation for all samples submitted for analyses are presented in Attachment B and filed in the SNL/NM Customer Funded Records Center (formerly the Environment, Safety, and Health [ES&H] and Security Records Center).

2.4 Pump Decontamination

A Bennett Company groundwater sampling system was used to collect groundwater samples from all wells, except for CWL-MW2BU, CWL-MW5L, and CWL-MW6L. The sampling pump and tubing bundle were decontaminated prior to installation in monitoring wells according to procedures described in FOP 94-26, *General Equipment Decontamination* (SNL/NM February 1997). Two equipment blank (EB) or rinsate samples were collected to verify the effectiveness of the equipment decontamination process. These samples were collected prior to sampling CWL-MW4 and CWL-MW5U. No VOCs, except bromodichloromethane and dibromochloromethane, were detected in either EB sample. Various metal parameters were detected at low concentrations in both EB samples. All associated environmental samples with detectable VOCs or metals at concentrations less than five times the EB contamination were flagged with a "B2" notation in the associated data validation reports provided in Attachment C.

3.0 Analytical Results

Groundwater samples collected for analysis of VOCs and metals were submitted to General Engineering Laboratories, Inc. in Charleston, South Carolina. Tables A-6 and A-7 summarize the chemical parameters, laboratory method detection limits (MDL), and U.S. Environmental Protection Agency (EPA) maximum contaminant levels (MCL) for drinking water supplies. Tables A-8, A-9, and A-10 summarize all analytes detected in samples collected from CWL groundwater monitoring wells during the second FY06 semiannual sampling event. All chemical analytical results are compared to EPA MCLs for drinking water supplies. Analytical reports, including the results of the analyses, analytical methods, quantitation limits, dates of analysis, and results of QC analyses, are filed in the SNL/NM Customer Funded Records Center.

No VOCs were detected at concentrations exceeding the associated MCL. No VOCs were detected in any sample except for acetone, carbon disulfide, toluene, and TCE. Acetone was detected in CWL-BW3, CWL-MW2BU, and CWL-MW6L at a maximum concentration of 2.39 micrograms per liter (μg/L). Carbon disulfide was detected in CWL-MW5U only, at a concentration of 24.8 μg/L, but was qualified during data validation as estimated laboratory control and matrix spike samples did not meet acceptance criteria. Toluene was detected in CWL-BW3, CWL-BW4A, CWL-MW5U, CWL-MW5U duplicate sample, and CWL-MW6U at concentrations ranging from 0.347 to 1.45 μg/L. TCE was detected below the MCL of 5.0 μg/L in the groundwater samples from CWL-BW4A, CWL-MW2BU, CWL-MW5L, CWL-MW5U, CWL-MW6L, and CWL-MW6U at concentrations ranging from 0.256 to 2.36 μg/L. Table A-8 summarizes the detected VOCs.

No total metal parameters were detected above established regulatory limits in any groundwater sample. In general, chromium, nickel, and iron results from CWL-BW3, CWL-MW2BU, and CWL-MW4 groundwater samples correlate to increased field turbidity measurements. Table A-9 summarizes the total metal parameters for all groundwater samples collected during the second FY07 semiannual sampling event at the CWL.

4.0 Quality Control

Field and laboratory QC samples were prepared to determine the accuracy of the methods used and to detect inadvertent sample contamination that may have occurred during the sampling and analysis process. The following sections discuss each sample type.

4.1 Field QC Samples

Field QC samples included environmental duplicate, field blank (FB), and trip blank (TB) samples. The field QC samples were submitted for analysis along with the groundwater samples in accordance with QC procedures specified in the CWL Sampling and Analysis Plan (SNL/NM December 1992).

4.1.1 Duplicate Environmental Samples

A total of two duplicate environmental samples were collected and analyzed for all parameters in order to determine the overall reproducibility of the sampling and analysis process. Duplicate samples were collected at CWL-MW4 and CWL-MW5U immediately after the original environmental samples in order to reduce variability caused by time and/or sampling mechanics.

Relative percent difference (RPD) calculations between duplicate samples were performed for all analytes. Table A-10 summarizes the results of the duplicate sample analyses and calculated RPD values. The results show that sampling and analysis precision was in conformance with the CWL Sampling and Analysis Plan requirements for all measured parameters, except copper from CWL-MW4, and antimony from CWL-MW5U. RPD calculations for these parameters maybe affected by increased field turbidity measurements and/or associated results reported at estimated concentrations below the effective practical quantitation limit.

4.1.2 Field Blank Samples

Two FB samples were collected for VOCs to assess whether contamination of the samples resulted from ambient field conditions. The FB samples were prepared by pouring deionized water into sample containers at the CWL-BW4A and CWL-MW5L wellheads to simulate the transfer of environmental samples from the sampling system to the sample container. Acetone was detected in the FB sample associated with CWL-BW4A. Acetone was qualified as not detected in CWL-BW4A during data validation, since the compound was detected at a concentration less than ten times the blank contamination.

4.1.3 Trip Blanks

TB samples are submitted whenever samples are collected for VOC analysis to assess whether contamination of the samples has occurred during shipment and storage. TB samples consist of laboratory reagent grade water with hydrochloric acid preservative contained in 40-mL VOC vials prepared by the analytical laboratory, which accompany the empty sample containers supplied by the laboratory. TBs were brought to the field and accompanied each sample shipment. A total of ten TBs were submitted with the FY07 semiannual samples. No VOCs were detected above laboratory MDLs in any TB sample, except for acetone. If acetone was detected in associated environmental samples at concentrations less than ten times the TB contamination, then compounds were qualified as not detected during data validation.

4.2 Laboratory QC

Internal laboratory QC analyses performed included method blank, laboratory control sample, matrix spike, matrix spike duplicate, and surrogate spike analyses. All laboratory data were reviewed and qualified in accordance with AOP [Administrative Operating Procedure] 00-03, Revision 0, *Data Validation Procedure for Chemical and Radiochemical Data* (SNL/NM January 2000). Although some analytical results were qualified during the data validation process, no significant data quality problems were noted. Data validation reports associated with the second FY07 semiannual groundwater sampling event are provided in Attachment C.

4.3 Variances and Nonconformances

Variances and nonconformances from requirements in the CWL Sampling and Analysis Plan (SNL/NM December 1992) are identified as follows:

- CWL-MW1A and CWL-MW3A are no longer sampled (since 1998) because these
 wells do not contain water. The wells partially filled with sediment during the VE
 VCM and have not recovered.
- CWL-MW2A was plugged and abandoned in June 2004 with NMED approval (SNL/NM July 2004).
- CWL-BW3, CWL-BW4A, CWL-MW2BU, CWL-MW5U, and CWL-MW6U were purged to dryness, allowed to recover, and then sampled to collect the most representative groundwater sample possible given the low yield of these wells.

• CWL-MW2BU, CWL-MW5L, and CWL-MW6L were sampled using dedicated sampling systems manufactured by QED Environmental Systems, Inc.

5.0 Summary

In October 2006, samples were collected from background wells (CWL-BW3 and CWL-BW4A) and monitoring wells (CWL-MW2BL, CWL-MW2BU, CWL-MW4, CWL-MW5L, CWL-MW5U, CWL-MW6L, and CWL-MW6U). The samples were analyzed for 40 CFR 264 (Appendix IX) VOCs and total metals plus iron. No analytes were detected at concentrations exceeding the associated EPA MCLs.

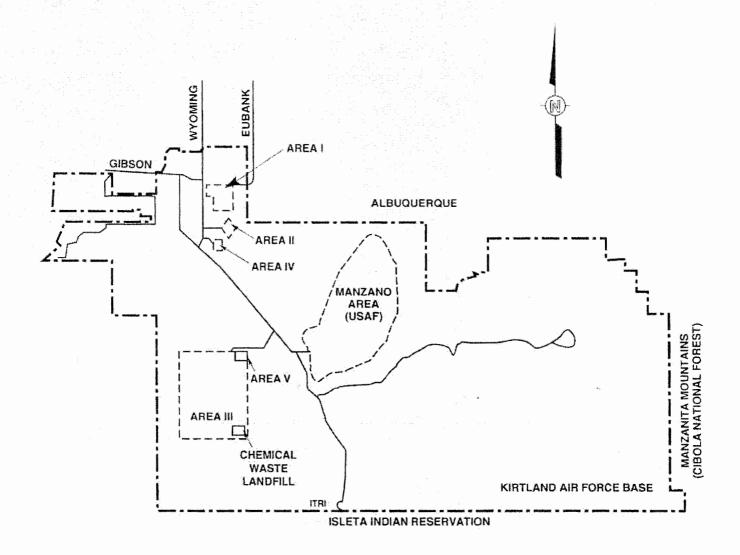
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SNL/NM, see Sandia National Laboratories/New Mexico.

FIGURES



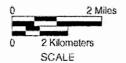


Figure A -1
Location of the Chemical Waste Landfill
Sandia National Laboratories/New Mexico

301462.237.02.000 A2

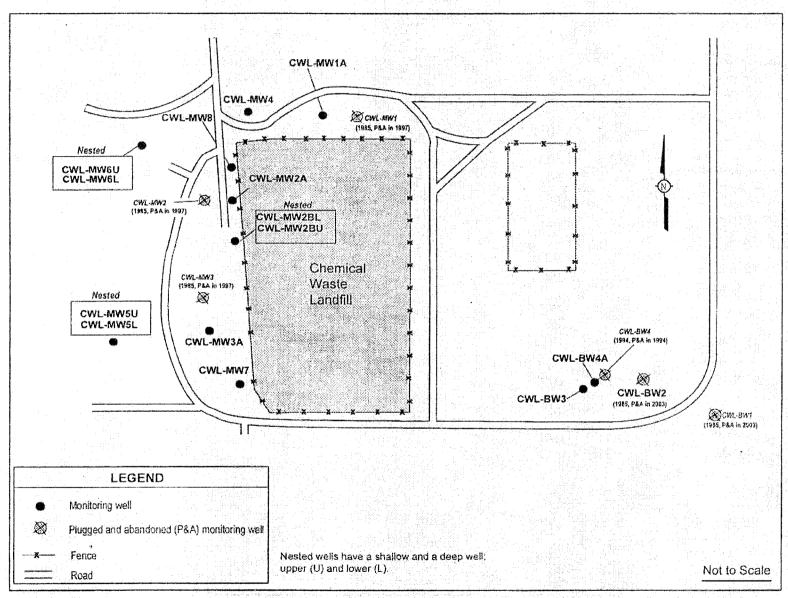


Figure A-2

Monitoring Well Locations at the Chemical Waste Landfill,
Sandia National Laboratories/ New Mexico

TABLES

Monitoring Well Groundwater Elevations Sandia National Laboratories/New Mexico Chemical Waste Landfill

Semiannual Assessment, October-December 2006

Well Number	Measuring Point Elevation (famsl)	Depth to Water ^a (feet)	Groundwater Elevation (famsl)	Total Well : Depth ^b (feet)	Bottom of Well Elevation (famsl)	Static Water Height ^c (feet)
CWL-BW3	5430.23	501.59	4928.64	507.48	4921.05	7.59
CWL-BW4A	5431.36	501.97	4929.39	510.00	4919.24	10.15
CWL-MW1A	5421.49	NA	NA	495.00	4925.41	NC
CWL-MW2BL	5419.39	496.45	4922.94	557.50	4859.87	63.07
CWL-MW2BU	5419.42	490.49	4928.93	501.00	4916.37	12.56
CWL-MW3A	5417.78	NA	NA	492.00	4924.39	NC
CWL-MW4	5420.33	494.82	4925.51	503.00	4915.38	10.13
CWL-MW5L	5415.80	493.15	4922.65	558.00	4856.02	66.63
CWL-MW5U	5416.01	488.23	4927.78	502.00	4912.02	15.76
CWL-MW6L	5417.13	494.73	4922.40	564.00	4850.65	71.75
CWL-MW6U	5416.78	488.75	4928.03	502.00	4912.65	15.38

^aMeasurements transcribed from Groundwater Sample Collection Logs.

BW = Background well.

CWL = Chemical Waste Landfill.

famsl = Feet above mean sea level. Measured from top of casing.

L = Lower well completion zone.

NA = Not applicable since CWL-MW1A and CWL-MW3A are dry wells.

NC = Not calculated. MW = Monitoring well.

U = Upper well completion zone.

^bDerived from well completion logs.

^cCalculated as difference between depth to water and bottom of well.

Volumes Purged from Monitoring Wells Sandia National Laboratories/New Mexico Chemical Waste Landfill

Semiannual Assessment, October-December 2006

Well Number	Volume Purged ^a (gal)	Time Pumped (minutes)	Average Pump Rate (gal/minute)	Well Pumped to Dryness
CWL-BW3	14	37	0.38	Yes
CWL-BW4A	13	35	0.37	Yes
CWL-MW2BL	489	297	1.65	No
CWL-MW2BU	3,300 mL	81	41 mL/minute	Yes
CWL-MW4	42	113	0.37	No
CWL-MW5L	14,000 mL	66	212 mL/minute	No
CWL-MW5U	21.5	50	0.43	Yes
CWL-MW6L	14,000 mL	129	109 mL/minute	No
CWL-MW6U	22	54	0.41	Yes

^aVolume of groundwater purged before sampling.

BW = Background well.

CWL = Chemical Waste Landfill.

gal = Gallon(s).

L = Lower well completion zone.

mL = Milliliter(s). MW = Monitoring well.

U = Upper well completion zone.

Summary of Field Measurements Sandia National Laboratories/New Mexico **Chemical Waste Landfill**

Semiannual Assessment, October-December 2006

Well Number	Measurement Period	рН	Temperature °C	SC (µmhos/cm)	Turbidity (NTU)
CWL-BW3	Purge measurements ^a :	7.59	19.67	875	1.35
		7.79	14.55	866	4.11
		7.79	15.18	859	2.83
CWL-BW4A	Purge measurementsa:	7.28	16.33	971	0.54
	_	7.26	17.37	978	0.78
1		7.25	17.82	978	0.69
CWL-MW2BL	Purge measurements ^a :	6.87	22.84	1,042	0.52
		6.87	22.82	1,042	0.56
		6.87	22.86	1,042	0.57
CWL-MW2BU	Purge measurements ^a :	8.06	14.18	863	58.5
		7.81	14.77	906	10.1
		7.81	15.00	890	12.8
CWL-MW4	Purge measurements ^a :	7.04	18.15	913	2.84
		7.05	18.13	913	2.71
j		7.05	18.09	913	3.32
CWL-MW5L	Purge measurements ^a :	6.87	15.20	1,012	3.33
		6.87	15.18	1,012	3.28
		6.87	15.19	1,012	3.30
CWL-MW5U	Purge measurements ^a :	7.26	13.63	. 841	0.68
	_	7.15	15.65	890	0.52
		7.15	16.96	882	0.47
CWL-MW6L	Purge measurements ^a :	6.93	13.10	991	0.68
	-	6.93	13.12	991	0.66
		6.93	13.13	990	0.59
CWL-MW6U	Purge measurements ^a :	7.29	14.49	873	0.82
	-	7.24	15.28	873	0.81
		7.22	16.20	876	0.79

^aLast three water quality measurements prior to sampling. For complete record reference Attachment A.

BW°C

= Background well. = Degrees Celsius.

CWL

= Chemical Waste Landfill.

μmhos/cm

= Lower well completion zone.

MW

= micromhos per centimeter

NTU

= Monitoring well.

= Turbidity measured in nephelometric turbidity units.

SC

= Specific conductance.

U

= Upper well completion zone.

Sample Number Identification Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

Sample Identification	AR/COC	Sample Number	Date Sampled	Laboratory	Sample Type
CWL-BW3	610835	083040	10-09-06	GEL	Environmental Sample
CWL-BW4A	610834	083037	10-05-06	GEL	Environmental Sample
CWL-MW2BL	610833	083035	10-03-06	GEL	Environmental Sample
CWL-MW2BU	610839	083049	10-20-06	GEL	Environmental Sample
CWL-MW4	610841	083053	10-17-06	GEL	Environmental Sample
CWL-MW4	610841	.083054	10-17-06	GEL	Duplicate Sample
CWL-MW5L	610843	083058	10-19-06	GEL	Environmental Sample
CWL-MW5U	610838	083046	10-13-06	GEL	Environmental Sample
CWL-MW5U	610838	083047	10-13-06	GEL	Duplicate Sample
CWL-MW6L	610842	083056	10-18-06	GEL	Environmental Sample
CWL-MW6U	610836	083042	10-11-06	GEL	Environmental Sample
CWL-EB1	610837	083044	10-11-06	GEL	Equipment Blank
CWL-EB2	610840	083051	10-13-06	GEL	Equipment Blank
CWL-FB1	610834	083038	10-05-06	GEL	Field Blank
CWL-FB2	610843	083059	10-19-06	GEL	Field Blank

AR/COC = Analysis Request/Chain-of-Custody Record.

BW = Background well.

CWL = Chemical Waste Landfill.

GEL = General Engineering Laboratories.

EB = Equipment blank sample. FB = Field blank sample.

L = Lower well completion zone.

MW = Monitoring well.

U = Upper well completion zone.

Analysis, Methods, Sample Containers, Preservatives, and Holding Times Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

Analysis	Method ^a	Container Type/ Volume/Preservative	Holding Time
Appendix IX Volatile Organic Compounds	8260B	Glass; 3 x 40 mL; HCl, 4°C	14 days
Total Appendix IX metals + iron	6020/7470A	Polyethylene; 500 mL; HNO ₃ , 4°C	28 days/ 180 days ^b

^aU.S. Environmental Protection Agency, November 1986. "Test Methods for Evaluating Solid, Physical/Chemical Methods," 3rd ed., (and updates), *SW-846*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

^bHolding time for mercury is 28 days; all other metals are 180 days.

HCl = Hydrochloric acid.

HNO₃ = Nitric acid. mL = Milliliter(s). °C = Degrees Celsius.

Chemical Parameters, MDL/MCL for Volatile Organic Compounds Analyzed Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

Test Method 8260Ba	MDL	MCL	Test Method 8260Ba	MDL	MCL
(Appendix IX List)b	(µg/L)	(μ g/L)	(Appendix IX List)b	(μ g/L)	(μ g/L)
1,1,1,2-Tetrachloroethane	0.250	NE	Carbon tetrachloride	0.250	5.0
1,1,1-Trichloroethane	0.300	200	Chlorobenzene	0.250	100
1,1,2,2-Tetrachloroethane	0.250	NE	Chloroethane	0.500	NE
1,1,2-Trichloroethane	0.250	5.0	Chloroform	0.250	NE
1,1-Dichloroethane	0.300	NE	Chloromethane	0.500	NE
1,1-Dichloroethene	0.300	7.0	Chloroprene	0.300	NE
1,2,3-Trichloropropane	0.300	NE	Dibromochloromethane	0.250	NE
1,2,4-Trichlorobenzene	0.300	70	Dibromomethane	0.300	NE
1,2-Dibromo-3-chloropropane	0.500	0.2	Dichlorodifluoromethane	0.500	NE
1,2-Dibromoethane	0.250	0.05	Ethyl benzene	0.250	700
1,2-Dichloroethane	0.250	5.0	Ethyl cyanide	1.50	NE
1,2-Dichloropropane	0.250	5.0	Ethyl methacrylate	1.00	NE
2-Butanone	1.25	NE	Iodomethane	1.25	NE
2-Hexanone	1.25	NE	Isobutanol	12.5	NE
4-methyl-, 2-Pentanone	1.25	NE	Methacrylonitrile	1.00	NE
Acetone	1.25	NE	Methyl methacrylate	1.00	NE
Acetonitrile	6.25	NE	Methylene chloride	2.00	5.0
Acrolein	3.00	NE	Pentachloroethane	1.00	NE
Acrylonitrile	1.00	NE	Styrene	0.250	100
Allyl chloride	3.70	NE	Tetrachloroethene	0.250	5.0
Benzene	0.300	5.0	Toluene	0.250	1,000
Bromodichloromethane	0.250	NE	Trichloroethene	0.250	5.0
Bromoform	0.250	NE	Trichlorofluoromethane	0.310	NE
Bromomethane	0.500	NE	Vinyl acetate	1.50	NE
Carbon disulfide	1.25	NE	Vinyl chloride	0.500	2.0
Xylenes (Total)	0.250	10,000	trans-1,2-Dichloroethene	0.300	100
Bis(2-Chloroisopropyl)ether	1.50	NE	trans-1,3-Dichloropropene	0.250	NE
cis-1,3-Dichloropropene	0.250	NE	trans-1,4-Dichloro-2-butene	1.00	NE

^aU.S. Environmental Protection Agency November 1986. "Test Methods for Evaluating Solid, Physical/Chemical Methods," 3rd ed., (and updates), *SW-846*, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

^bTitle 40 CFR, Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Appendix IX, Groundwater Monitoring List.

CFR = Code of Federal Regulations.

EPA = U.S. Environmental Protection Agency.

MCL = Maximum contaminant levels (established by the U.S. EPA Primary Drinking Water Regulations in 40 CFR 141.11(b), subsequent amendments, or the New Mexico Environmental Improvement Board in the New Mexico Register, Title 20, Chapter 7, Part 1).

MDL = The method detection level of an analyte that can be determined, but not quantified, with 99% confidence.

 $\mu g/L$ = Microgram(s) per liter.

NE = Not established.

Chemical Parameters, MDL/MCL for Metal Parameters Analyzed Sandia National Laboratories/New Mexico

Chemical Waste Landfill

Semiannual Assessment, October-December 2006

Appendix IX List ^a	Test Method ^b	MDL (mg/L)	MCL (mg/L)
Antimony	6020	0.0005	0.006
Arsenic	6020	0.0015	0.01
Barium	6020	0.0005	2.0
Beryllium	6020	0.0001	0.004
Cadmium	6020	0.0001	0.005
Chromium	6020	0.001	0.1
Cobalt	6020	0.0001	NE
Copper	6020	0.0002	NE
Iron	6020	0.010	NE
Lead	6020	0.0005	NE
Mercury	7470A	0.00006	0.002
Nickel	6020	0.0005	NE
Selenium	6020	0.0025	0.05
Silver	6020	0.0002	NE
Thallium	6020	0.0004	0.002
Tin	6020	0.001	NE
Vanadium	6020	0.002	NE NE
Zinc	6020	0.002	NE

^aTitle 40 CFR, Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Appendix IX, Groundwater Monitoring List. Addition metal parameter includes iron.

bU.S. Environmental Protection Agency November 1986. "Test Methods for Evaluating Solid, Physical/Chemical Methods,"

3rd ed. (and updates), SW-846, Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

CFR = Code of Federal Regulations.

EPA = U.S. Environmental Protection Agency.

MCL = Maximum contaminant levels (established by the U.S. EPA Primary Drinking Water Regulations in 40 CFR 141.11(b), subsequent amendments, or the New Mexico Environmental Improvement Board in the New Mexico Register, Title 20, Chapter 7, Part 1).

MDL = The method detection level of an analyte that can be determined, but not quantified, with 99% confidence.

mg/L = Milligram(s) per liter. NE = Not established.

Table A-8

Summary of Detected Volatile Organic Compounds Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

	V Samp Sample Lab	nple No.: Vell No.; de Type: Method: oratory; Sampled:	083040 CWL-BW3 Environmental Bennett Pump GEL 10-09-06	083037 CWL-BW4A Environmental Bennett Pump GEL 10-05-06	083035 CWL-MW2BL Environmental Bennett Pump GEL 10-03-06	083049 CWL-MW2BU Environmental QED Pump GEL 10-20-06	083053 CWL-MW4 Environmental Bennett Pump GEL 10-17-06	083054 CWL-MW4 Duplicate Bennett Pump GEL 10-17-06
Parameter	Method	MCL			All resul	ts in μg/L		
Acetone	8260	NE	1.58 (5.00) J	5.0UJ	5.0UJ, B1	2.39 (5.00) J	ND (1.25)	ND (1.25)
Carbon Disulfide	8260	NE	ND (1.25)	ND (1.25)	ND (1.25)	5.0UJ, B	ND (1.25)	ND (1.25)
Toluene	8260	1,000	1.45	1.28	ND (0.250)	ND (0.250)	ND (0.250)	ND (0.250)
Trichloroethene	8260	5	ND (0.250)	0.280 (1.00) J	ND (0.250)	0.256 (1.00) J	ND (0.250)	ND (0.250)

L

Table A-8 (Continued)

Summary of Detected Volatile Organic Compounds Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

	San Sampl La	ample No.: Well No.: nple Type: e Method: aboratory: Sampled:	083058 CWL-MW5L Environmental QED Pump GEL 10-19-06	083046 CWL-MW5U Environmental Bennett Pump GEL 10-13-06	083047 CWL-MW5U Duplicate Bennett Pump GEL 10-13-06	083056 CWL-MW6L Environmental QED Pump GEL 10-18-06	083042 CWL-MW6U Environmental Bennett Pump GEL 10-11-06
Parameter	Method	MCL			All results in µg/L		
Acetone	8260	NE	ND (1.25)	ND (1.25)	ND (1.25)	2.11 (5.00) J	ND (1.25)
Carbon Disulfide	8260	NE	ND (1.25)	ND (1.25)	24.8 A, A2, J	ND (1.25)	ND (1.25)
Toluene	8260	1,000	ND (0.250)	0.435 (1.00) J	0.423 (1.00) J	ND (0.250)	0.347 (1.00) J
Trichloroethene	8260	5	0.579 (1.00) J	2.36	2.32	0.804 (1.00) J	0.421 (1.00) J

Note: If result detected below laboratory practical quantitation limit, then practical quantitation limit is indicated in parentheses.

- A = Laboratory accuracy and/or bias measurements for the laboratory control and/or duplicate do not meet acceptance criteria.
- A2 = Laboratory accuracy and/or bias measurements for the matrix spike and/or duplicate do not meet acceptance criteria.
- B = Analyte present in associated laboratory method blank.
- B1 = Analyte present in associated trip blank.
- BW = Background well.
- CFR = Code of Federal Regulations.
- CWL = Chemical Waste Landfill.
- EPA = U.S. Environmental Protection Agency.
- GEL = General Engineering Laboratories.
- The associated value is an estimated quantity and/or detected below the practical quantitation limit.
 - = Lower well completion zone.
- MCL = Maximum contamination levels (established by the EPA Primary Drinking Water Regulations in 40 CFR 141.11(b), subsequent amendments or the New Mexico Environmental Improvement Board in the New Mexico Register, Title 20, Chapter 7, Part 1).
- μ g/L = Microgram(s) per liter.
- MW = Monitoring well.
- ND = Analyte not detected at listed value.
- NE = Not established.
- U = Upper well completion zone.
- XUJ = Analyte was analyzed for but not detected. The associated value/detection limit is an estimate and may be inaccurate or imprecise.

Table A-9

Summary of Total Metal Parameters Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

	S Sam	Sample No.: Well No.: sample Type: sple Method: Laboratory: ate Sampled:	083040 CWL-BW3 Environmental Bennett Pump GEL 10-09-06	083037 CWL-BW4A Environmental Bennett Pump GEL 10-05-06	083035 CWL-MW2BL Environmental Bennett Pump GEL 10-03-06	083049 CWL-MW2BU Environmental QED Pump GEL 10-20-06	083053 CWL-MW4 Environmental Bennett Pump GEL 10-17-06
Parameter	Method	MCL			All results in mg/L		
Antimony	6020	0.006	ND (0.0005)	ND (0.0005)	0.000704 (0.002) B, B3, J	0.000716 (0.002) B3, J	ND (0.0005)
Arsenic	6020	0.01	0.0031 (0.005) J	ND (0.0015)	ND (0.0015)	0.00485 (0.005) J	ND (0.0015)
Barium	6020	2.0	0.055	0.0519	0.0627	0.055	0.060
Beryllium	6020	0.004	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Cadmium	6020	0.005	0.00143	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.000216 (0.001) B3, J
Chromium	6020	0.1	0.0342	0.00234 (0.003) B, J	ND (0.001)	0.0116	0.00504
Cobalt	6020	NE	0.000399 (0.001) J	0.000254 (0.001) J	0.000237 (0.001) J	0.000471 (0.001) J	0.0036
Copper	6020	NE	0.00416	0.00117	0.00107	0.00306	0.00182
Iron	6020	NE	0.485	0.582	0.446	0.912	0.765
Lead	6020	NE	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.00107 (0.002) J	0.0005 (0.002) B2, J
Mercury	7470A	0.002	ND (0.00006) B3, UJ	ND (0.00006)	ND (0.00006)	ND (0.00006)	ND (0.00006)
Nickel	6020	NE	0.089	0.00246	0.00234	0.0158	0.334
Selenium	6020	0.05	ND (0.0025)	ND (0.0025)	ND (0.0025)	ND (0.0025)	0.00338 (0.005) J
Silver	6020	NE	ND (0.0002)	ND (0.0002)	ND (0.0002)	0.000411 (0.001) J	ND (0.0002)
Thallium	6020	0.002	ND (0.0004)	ND (0.0004)	0.000569 (0.001) B3, J	0.000546 (0.001) J	ND (0.0004)
Tin	6020	NE	0.108	ND (0.001)	ND (0.001)	0.00119 (0.005) J	ND (0.001)
Vanadium	6020	NE	0.00691 (0.030) B, J	ND (0.002)	ND (0.002)	0.00273 (0.030) J	ND (0.002)
Zinc	6020	NE	0.00947 (0.010) B, J	0.00838 (0.010) B, J	0.00322 (0.010) B, J	0.0171	0.00461 (0.010) B2, J

Refer to footnotes at end of table.

Table A-9 (Continued)

Summary of Total Metal Parameters Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

	Sa Samp L	ample No.: Well No.: mple Type: le Method: aboratory: e Sampled:	083054 CWL-MW4 Duplicate Bennett Pump GEL 10-17-06	083058 CWL-MW5L Environmental QED Pump GEL 10-19-06	083046 CWL-MW5U Environmental Bennett Pump GEL 10-13-06	083047 CWL-MW5U Duplicate Bennett Pump GEL 10-13-06	083056 CWL-MW6L Environmental QED Pump GEL 10-18-06	083042 CWL-MW6U Environmental Bennett Pump GEL 10-11-06
Parameter	Method	MCL			All result	s in mg/L		
Antimony	6020	0.006	ND (0.0005)	ND (0.0005)	0.00138 (0.002) B3, J	0.000543 (0.002) B3, J	ND (0.0005)	ND (0.0005)
Arsenic	6020	0.01	ND (0.0015)	ND (0.0015)	0.00192 (0.005) J	0.00203 (0.005) J	ND (0.0015)	0.00295 (0.005) J
Barium	6020	2.0	0.0588	0.0581	0.0706	0.0693	0.0569	0.073
Beryllium	6020	0.004	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)
Cadmium	6020	0.005	0.000214 (0.001) B3, J	ND (0.0001)	ND (0.0001)	ND (0.0001)	ND (0.0001)	0.000108 (0.001) J
Chromium	6020	0.1	0.00484	0.00205 (0.003) J	0.00359 B2, J	0.00345 B2, J	ND (0.001)	0.0067
Cobalt	6020	NE	0.00339	0.000225 (0.001) J	0.000187 (0.001) J	0.000197 (0.001) J	0.000161 (0.001) J	0.000257 (0.001) J
Copper	6020	NE	0.00137	0.00134	0.00194	0.00205	0.000555 (0.001) J	0.00153
1ron	6020	NE	0.733	0.457	0.351	0.362	0.424	0.352
Lead	6020	NE	ND (0.0005)	0.000721 (0.002) J	0.000624 (0.002) J	ND (0.0005)	ND (0.0005)	ND (0.0005)
Mercury	7470A	0.002	ND (0.00006)	ND (0.00006)	ND (0.00006)	ND (0.00006)	ND (0.00006)	ND (0.00006) B3, UJ
Nickel	6020	NE	0.313	0.00247	0.00464	0.00456	0.00222	0.00539
Selenium	6020	0.05	0.0032 (0.005) J	0.00333 (0.005) J	0.00288 (0.005) J	0.00342 (0.005) J	0.00327 (0.005) J	ND (0.0025)
Silver	6020	NE	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)	ND (0.0002)
Thallium	6020	0.002	ND (0.0004)	ND (0.0004)	ND (0.0004)	ND (0.0004)	ND (0.0004)	ND (0.0004)
Tin	6020	NE	ND (0.001)	ND (0.001)	0.00309 (0.005) J	0.00273 (0.005) J	ND (0.001)	0.00183 (0.005) B3, J
Vanadium	6020	NE	ND (0.002)	0.00217 (0.030) J	ND (0.002)	ND (0.002)	ND (0.002)	0.00485 (0.030) B, J
Zinc	6020	NE	0.00384 (0.010) B2, J	0.0106	0.0367	0.0371	0.00209 (0.010) J	0.0101 B, J

Refer to footnotes at end of table.

Table A-9 (Concluded)

Summary of Total Metal Parameters Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

Note: If result detected below laboratory practical quantitation limit, then practical quantitation limit is indicated in parentheses.

B = Analyte present in associated laboratory method blank sample.

B2 = Analyte present in associated equipment blank sample.

B3 = Analyte present in laboratory initial calibration blank or continuing calibration blank.

BW = Background well.

CFR = Code of Federal Regulations.

CWL = Chemical Waste Landfill.

EPA = U.S. Environmental Protection Agency.
GEL = General Engineering Laboratories.

The associated value is an estimated quantity and/or detected below the practical quantitation limit.

L = Lower well completion zone.

MCL = Maximum contamination levels (established by the EPA Primary Drinking Water Regulations in 40 CFR 141.11(b), subsequent amendments or the New Mexico Environmental Improvement Board I n the New Mexico Register, Title 20, Chapter 7, Part 1).

mg/L = Milligram(s) per liter. MW = Monitoring well.

ND = Analyte not detected at listed value.

NE = Not established.

U = Upper well completion zone.

UJ = The analyte was analyzed for but not detected. The associated value/detection limit is an estimate and may be inaccurate or imprecise.

Summary of Environmental and Duplicate Analyses Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, October-December 2006

Parameter	Environmental Sample Results (R ₁) (mg/L)	Duplicate Sample Results (R ₂) (mg/L)	RPD
CWL-MW4			
Barium	0.060	0.0588	2
Cadmium	0.000216 (0.001) B3, J	0.000214 (0.001) B3, J	1 .
Chromium	0.00504	0.00484	4
Cobalt	0.0036	0.00339	6
Copper	0.00182	0.00137	28
Iron	0.765	0.733	4
Lead	0.0005 (0.002) B2, J	ND (0.0005)	NC
Nickel	0.334	0.313	6
Selenium	0.00338 (0.005) J	0.0032 (0.0005) J	5
Zinc	0.00461 (0.010) B2, J	0.00384 (0.010) B2, J	18
CWL-MW5U			
Carbon Disulfide	ND (1.25) μg/L	24.8 A, A2, J μg/L	NC
Toluene	0.435 (1.00) J μg/L	0.423 (1.00) J μg/L	3
Trichloroethene	2.36 μg/L	2.32 μg/L	2
Antimony	0.00138 (0.002) B3, J	0.000543 (0.002) B3, J	87
Arsenic	0,00192 (0.005) J	0.00203 (0.005) J	6
Barium	0.0706	0.0693	2
Chromium	0.00359 B2, J	0.00345 B2, J	4
Cobalt	0.000187 (0.001) J	0.000197 (0.001) J	5
Copper	0.00194	0.00205	6
Iron	0.351	0.362	3
Lead	0.000624 (0.002) J	ND (0.0005)	NC
Nickel	0.00464	0.00456	2
Selenium	0.00288 (0.005) J	0.00342 (0.005) J	17
Tin	0.00309 (0.005) J	0.00273 (0.005) J	12
Zinc	0.0367	0.0371	1

- A = Laboratory accuracy and/or bias measurements for the laboratory control and/or duplicate do not meet acceptance criteria.
- A2 = Laboratory accuracy and/or bias measurements for the matrix spike and/or duplicate do not meet acceptance criteria.
- B2 = Analyte present in associated equipment blank sample.
- B3 = Analyte present in laboratory initial calibration blank or continuing calibration blank.
- BW = Background well.
- J = The associated value is qualified as an estimated quantity and/or detected below the practical quantitation limit.
- L = Lower well completion zone.
- $\mu g/L$ = Microgram(s) per liter.
- mg/L = Milligram(s) per liter.
- MW = Monitoring well.
- NC = Not calculated for non-detected and/or qualified estimated values.
- ND = Analyte not detected at listed value.
- RPD = Relative percent difference is calculated with the following equation and rounded to nearest whole number:

$$RPD = \frac{\mid R_1 - R_2 \mid}{[(R_1 + R_2)/2]} \times 100$$

where: $R_1 = ana$

 R_1 = analysis result.

 R_2 = duplicate analysis result.

APPENDIX B

Replacement pages for the August 22, 2006 CWL Quarterly Closure Progress Report, revised Table A-8.

Table A-8 Revised

Summary of Detected Volatile Organic Compounds Sandia National Laboratories/New Mexico Chemical Waste Landfill Semiannual Assessment, April-September 2006

	Sample No.: Well No.: Sample Type: Sample Method: Laboratory: Date Sampled:		076886 CWL-BW3 Environmental Bennett Pump GEL 04-07-06	076891 CWL-BW4A Environmental Bennett Pump GEL 04-05-06	076892 CWL-BW4A Duplicate Bennett Pump GEL 04-05-06	076894 CWL-MW2BL Environmental Bennett Pump GEL 04-26-06	076896 CWL-MW2BU Environmental QED Pump GEL 04-24-06	076898 CWL-MW4 Environmental Bennett Pump GEL 04-11-06		
Parameter	Method	MCL		All results in µg/L						
Acetone	8260	NE	5.0U, B1, B2	ND (1.25)	ND (1.25)	11.3U	11.3U	3.70 (5.00) J		
Acetonitrile	8260	NE	ND (6.25) UJ	ND (6.25)	ND (6.25)	ND (6.25) UJ	ND (6.25) UJ	ND (6.25) UJ		
Methylene Chloride	8260	5	ND (2.00)	ND (2.00)	2.01 (5.00) J ND (2		ND (2.00)	ND (2.00)		
Toluene	8260	1,000	0.409 (1.00) J	0.844 (1.00) J	0.696 (1.00) J	ND (0.250)	ND (0.250)	ND (0.250)		
Trichloroethene	8260	5	ND (0.250)	ND (0.250)	ND (0.250)	ND (0.250)	3.34	ND (0.250)		

Table A-8 Revised (Concluded)

Summary of Detected Volatile Organic Compounds Sandia National Laboratories/New Mexico Chemical Waste Landfill

Semiannual Assessment, April-September 2006

	Sample No.: Well No.: Sample Type: Sample Method: Laboratory: Date Sampled:		076900 076903 CWL-MW5L CWL-MW5U Environmental Environmental QED Pump Bennett Pump GEL GEL 04-18-06 04-14-06		076905 CWL-MW6L Environmental QED Pump GEL 04-20-06	076906 CWL-MW6L Duplicate QED Pump GEL 04-20-06	076910 CWL-MW6U Environmental Bennett Pump GEL 04-18-06	
Parameter	Method	MCL			All results in µg/L			
Acetone	8260	NE	11.3UJ	11.3UJ	ND (1.25)	ND (1.25)	17.5UJ, B1, B2	
Acetonitrile	8260	NE	7.15 (25.0) J	ND (6.25) UJ	ND (6.25)	ND (6.25)	ND (6.25) UJ	
Methylene Chloride	8260	5	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	ND (2.00)	
Toluene	8260	1,000	ND (0.250)	0.623 (1.00) J	ND (0.250)	ND (0.250)	0.403 (1.00) J	
Trichloroethene	8260	5	0.818 (1.00) J	1.64	0.714 (1.00) J	0.644 (1.00) J	0.458 (1.00) J	

Note: If result detected below laboratory practical quantitation limit, then practical quantitation limit is indicated in parentheses.

B1 = Analyte present in associated trip blank.

B2 = Analyte present in associated equipment blank.

BW = Background well.

CFR = Code of Federal Regulations. CWL = Chemical Waste Landfill.

EPA = U.S. Environmental Protection Agency.

GEL = General Engineering Laboratories.

J = The associated value is an estimated quantity and/or detected below the practical quantitation limit.

L = Lower well completion zone.

MCL = Maximum contamination levels (established by the EPA Primary Drinking Water Regulations in 40 CFR 141.11(b), subsequent amendments or the New Mexico Environmental Improvement Board in the New Mexico Register, Title 20, Chapter 7, Part 1).

 $\mu g/L \quad = Microgram(s) \ per \ liter.$

MW = Monitoring well.

ND = Analyte not detected at listed value.

NE = Not established.

U = Upper well completion zone.

XU = Analyte was qualified as not detected at corrected detection limit as specified by the Data Validator.

XUJ = Analyte was analyzed for but not detected. The associated value/detection limit is an estimate and may be inaccurate or imprecise.

ATTACHMENT A FIELD MEASUREMENT LOGS AND DOCUMENTATION

Project Name:	CWL	- .			Project N	o.: 9	8026	. 01.0	フ	
Well I.D.:	CWL.	- Bw3			Date:	10 -	06 -	06		
Weather	C00	1 F	Partly	doud	'y				-	
Method:					•		Ι	Pump depti	n: 50	6' _.
٠.			PURO	GE ME	ASURE	MENTS	3			DO mg/L
Depth to Water (FT)	Time 24 hr	Vol. Lgls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance
501.59	0832		Star	t Par	rat 1					
505-16	0847	5	19.50	003	301.2	6.09		044	83.5	7.69
506.30	0853	7	19.61	875	298.8	7.56		1-18	20.4	1,87
506.63		8	19.67	875	296.9	7.59		1.35	19.3	1.69
10/9/06	·									
501.42	\$0806		SIAR	1. —				-		
505.60	0818	5	1455	866	219.5	7.79		1931	89.6	9.09
508.32	0820	6	1518	859	218.6	7.79		2.83	90.2	9.21
	0821	St	art s	ample	ns			<u> </u>		
			<u> </u>		0			<u> </u>		
							<u> </u>			<u> </u>
					<u> </u>		<u> </u>		<u> </u>	
1	er(s): 61 (· · · · · · · · · · · · · · · · · · ·			
Sample num	iber(s):	18304	0							
			Pu	irge Volu	me Calcu	ılations				
Well.	l Diameter									
	2" well: 0.16				olumn) = _		allons			
	4" well: 0.65	_			olumn) =] olumn) =]		allons allons			
	6" well: 1.4"		(neight	or water (.o.u.iiii) — .	E	,a110112			
Tub	ing Diamete 1/4" OD:	<u>r</u> 2.4 mVft 2	υ /1	gth of tubi	n = \		millilet	arc		
	170" [] [] •	/ /L mal/ff)	A LIPTI	THE CHETTINE				C.1.3		
	3/8" OD:	9.7 mVft 2	'	oth of tubi	· -		millilet			

FIELD MEASUREMENT LOG FOR GROUNDWATER SAMPLE COLLECTION

Project Name	: Cu	1			Project N	To.: 9	8026.	01.07	2	·	
Well I.D.:	CWL	- BW	4A		Date:	10 -	04-0	6/	0-5-	06	
Weather Windy, high cloud coverage											
Method: Portable pump Dedicated pump Pump depth: 507'											
PURGE MEASUREMENTS DO "%											
Depth to Water (FT)	Time 24 hr	Vol. Lgls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance	
501.97	0841		Star	+ Pu	rge						
506.28	0852	5	18.06	003	305.2	6.53		1.58	106.4	10.01	
506.93	0853	Ь	18.00	561	3257	6.52		0.74	112.8	10.29	
507.20	0855	. 7	18.15	978	3921	6.99		11.23	73.0	6.88	
	•	8	DRY								
		9					·	·			
1	1 1	1	0.100	1	1					1	

10

504.01

505.25

506.06

COC number(s):
Sample number(s):

Purge Volume Calculations

238.3

2436

245.7

7,28

7.26

7.25

Well Diameter

0831

0837

0842

0843

2" well: 0.16 gal/ft X____ (height of water column) = ____ gallons

17.37

17.82

978

978

4" well: 0.65 gal/ft X (height of water column) = gallons 6" well: 1.47 gal/ft X (height of water column) = gallons

Tubing Diameter

1/4" OD:2.4 ml/ft X(length of tubing) =millileters3/8" OD:9.7 ml/ft X(length of tubing) =millileters1/2" ODI:2.1.6 ml/ft X(length of tubing)) =millileters

0.54

0.78

0.69

75.3

79.3

6.95

7.25

7.59

FIELD MEASUREMENT LOG FOR GROUNDWATER SAMPLE **COLLECTION**

Project Nam	ne: CWL	Project No.: 98026.01.07	
Well I.D.:	CWL - MWZBL	Date: 10 - 3 - 06	
Weather	cool & cloudy		
Method:	Portable pump	Dedicated pump Pump depth: 550′	

PURGE	MEAS	SUREMENTS
-------	------	-----------

•			PUR	GE MEA	ASURE	MENTS	S ,		•	DO mg/L
Depth to Water (FT)	Time 24 hr	Vol. L 🕼	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	Color and appearance
496.45	0810		Start	Pur	ge				788	70.98
496.66	0905	100	21.18	16.04	285.8	6.87		4.45	78,8	10.98
496.71	1005	200	21.78	1041	294.9	6.87		0.74	78.1	6.84
496.70	1105	300	22.20	1041	298.3	6.87		10.51	79.1	6.86
496.70	1204	400	23.13	1042	298.6	6.87		0.47	80.7	6.87
496.68	1234	450	22.75	1041	2985	6.87		0.51	80.0	688
496.67	1250	470	23.05	1041	298.4	6.87		0.56	79.9	6.84
496.67	1258	480	23 01	1041	298.5	6-87		0.53	79.9	6.85
996.67	1301	485	22.84	1042	298.6	6-87		0.52	1.03	6.88
496.67	1304	487	22.82	1042	298 6	6.87		0.56	799	6.85
496-64	1307	489	22.86	1042	198.5	6.87		0.57	80.0	6.85
	1308	St	but so	Imple						
						<u> </u>				
COC numbe		610 833								
Sample num	ber(s):	083035	<u> </u>							

Purge Volume Calculations

Well Diameter			
2" well: 0.	16 gal/ft X	(height of water column) = _	gallons
4" well: 0.	65 gal/ft X	(height of water column) = _	gallons '
6" well: 1.	47 gal/ft X	(height of water column) =	gallons
Tubing Diame	ter		
1/4" OD:	2.4 ml/ft X	(length of tubing) =	millileters
3/8" OD.	9.7 ml/ft X_	(length of tubing) =	millileters
1/2" ODI:	2 1.6 ml/ft X_	$_{}$ (length of tubing)) = $_{}$	mıllileters

Project Name	CWL	-GW	M		Project N	To.: 9	80 26	, 01.0	7	
Well I.D.:					Date:		9-0			
Weather					1					
Method:	P	ortable pum	pX	Dedic	ated pump	-1	I	oump dept	h: 49	1
			PUR	GE ME	ASURE	MENT	S			DO mal
Depth to Water (FT)	Time 24 hr	Vol. Ogls	Temp °C	Ec µmho	ORP MV	рН	Flow Lass	Turb NTU	DO %	-Color and appearance
490.49	0858	5	TAR	<u> </u>						
491.11	0913	.3.	16.86	756	2878	8.44	4300-1	101	85.6	8.28
491.45	0924	1.6	16.83	648	285.6	8.63	-300ml	157	93.5	9.08
491.42	10932	1.9	17.71	642	288.3	8.61		192	1007	9.60
491.90	0937	1.2	17.31	648	288.8			367	93.9	8.99
492.30	0941	1.5	17.34	684	291.0	8.53		988	43.8	9.01
10/9								<u> </u>		
492.15	1003	-	STAR	τ						
493.85	1025	Ø	No-wat	er +0:	surfac	e :		·		
								ļ		
		<u> </u>								
									<u> </u>	
COC numbe										
Sample num	Der(s):									
			Pu	rge Volu	me Calcu	lations				
	Diameter									
	2" well: 0.16			of water co			allons			
	4" well: 0.65 6" well: 1.47	_		of water co			allons allons			
			(110.15111	or water of	_	5	2110115			
	ng Diamete 1/4" OD:	<u>r</u> 2.4 ml/ft X	(leng	th of tubin	a) =	-	millilete	rc		
	1/4 OD: 3/8" OD:	9.7 ml/ft X		th of tubin	·		_ millilete			٠ ,
	1/2" ODI: 2			th of tubin	-		_ millilete			1
								14110000404	/C) II /EODO	440 D3/2

Well l.D.: CWl - MW2 BU Date: 10 - 16-06 10 - 20 - 06 Weather Method: Portable pump Dedicated pump Pump depth:	Project No.: 48026.01.07						
Weather PURGE MEASUREMENTS Pump depth: PURGE MEASUREMENTS Depth to Water (FT) Time 24 hr Ogls Yol. Temp or Down or D							
PURGE MEASUREMENTS Depth to Water (FT) Depth to Water (FT) Depth to Water (FT) Norge 1							
Depth to Water (FT) Time 24 hr Ogls Yol. Temp of Light of Light of States Ec μmho MV ORP μmho MV pH Flow Light of Light							
Depth to Water (FT) Time 24 m Ogls °C μmho MV pri L gls NTU % appea V91.41 D8 24 5 + A L T -	18/2						
NOTER 0830 -3 14.98 850 208.1 8.29 71000 72.0 7.3 0835 .60 15.60 858 210.4 8.17 1000 82.0 8.1 0840 .9 15.36 867 212.3 8.08 8.94 80.4 8.0							
0835 .6 15.60 858 210.4 3.17 1000 82.0 8.1 0840 .9 15.36 067 212.3 8.08 4.94 80.4 8.0							
0840 9 15.36 067 212.3 8.08 4.94 80.4 8.0	6						
	<u>-</u>						
V + A /(A /Q) + A /(A							
	16						
10/20/06							
492000830 START							
0836 3 14.77 906 233.5 7.81 10.1 84.4 8.5	1						
0844 -6 15.00 890 234.4 7.81 12.8 84.5 8.4	8						
0845 SAMPling							
COC number(s):							
Sample number(s):							
Purge Volume Calculations	•						
Well Diameter One of the second of the seco							
2" well: 0.16 gal/ft X (height of water column) = gallons 4" well: 0.65 gal/ft X (height of water column) = gallons							
6" well: 1.47 gal/ft X (height of water column) = gallons							
Tubing Diameter 1/4" OD: 2.4 ml/ft X (length of tubing) = millileters							
1/4" OD: 2.4 ml/ft X (length of tubing) = millileters 3/8" OD: 9.7 ml/ft X. (length of tubing) = millileters							
1/2" ODI: 2 1.6 ml/ft X (length of tubing)) = millileters							

Project Name:	CWI	Project No.: 98026-01.07									
Well I.D.:					Date: 10-17-06						
Weather		<u> </u>					1				
Method:		ortable pump)	Dedica	ated pump		I	Pump deptl	n: 50	0.	
			PURO	GE MEA	ASURE	MENTS	5			Do mok	
Depth to Water (FT)	Time 24 hr	Vol. I gls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance	
494.82	0816		STA	RT							
496.48	0846	10	15.90	874	73.2	6.76		14.5	8.9	0.88	
496.66	496.66 0907 20 17.82 905 91.3 6.96 13.5										
496.46 0924 25 17.76 908 118.0 7.00 4.88										4.70	
496.77 0933 30 18.12 912 141.1 7.03 3.03 5										5.40	
496.66	496.66 0947 35 18.31 912 158.2 7.04 12.0 160.										
496.70	496.70 0952 37 18.34 913 168.5 7.04 3.660 5									5.53	
496.45	1002	39	18.15	913	178.5	7.04		12.84	59-1	5-67	
496.40	1005	41	18.13	913	181.7	7.05		2.71	61.9	5-83	
496.33	10:69	42	18.09	913	185.6	7.05		13.32	59.0	le-16	
	1011		SAM	pling							
				,							
									<u> </u>	<u> </u>	
					<u> </u>	<u> </u>		1			
COC number	r(s): 610	841	- 6- 5 E	(1)							
Sample num	oer(s). O &	3053	0 8 J U &	94							
			Pu	rge Volu	me Calcı	ulations					
	Diameter			_			••				
	2" well: 0.16										
	4" well: 0.65 6" well: 1.47			of water c			gallons				
		_	(==================================		,						
	ng Diamete 1/4" OD:	<u>r</u> 2.4 ml/ft X	(leng	th of tubir	ng) =		millilet	ers	*		
	3/8" OD:	9.7 ml/ft X	(leng	th of tubir	<u>1g)</u> =		_ millilet				
	1/2" ODI: 2	1.6 ml/ft >	(leng	gth of tubin	ng)) =		_ millilet	ters			

	·	···									
Project Name	CWL	-6W	m		Project N	To.: 98	3026	.01,0	7	·	
Well I.D.:	CWL-	mw5	5 L		Date:	10-1	9-06	0			
Weather			• • • •								
Method:	Po	ortable pump)	Dedic	ated pump]	Pump deptl	n: 54	3:	
PURGE MEASUREMENTS DO ***/ Vol. Town For OPP Flow Town PO Flow Town Po Flow Po Flow Town Po Flow Town Po Flow Po Flow											
Depth to Water (FT)	Time 24 hr	Vol. L <u>e</u> ls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance	
1493.15	0832	S	TART	-							
493.23	0849	2	14.54	745	235.8	7.86		0.76	727	7.39	
443.24	0856	4	15,36	783	240.4			113	71.5	7.14	
493.24	0904	6	15.40	968	253.1	•		1.03	63.2	6.30	
493.24											
193.23											
493.23											
493.23	0927	12	15.20	1012	275.4			3.33	71.8	7.17	
493.24	0932	13	15.18	1012	276.0			3.28	72.7	7.26	
493.23	0938	14	15.19	1012	276.2	6.87		3.30	71.8	7-19	
	0939			SAME							
			-								
COC numbe	er(s): (10 84							1		
Sample num	iber(s): O	830 <i>58</i>	,0830	59	·						
			Pu	irge Volu	me Calci	ilations					
Well	Diameter			irge void	ime Care	114110113					
	2" well: 0.16	gal/ft X	(height	of water c	olumn) =	<u>9</u>	allons				
	4" well: 0.65			of water o			allons '				
	6" well: 1.47	7 gal/ft X		of water of			allons				
Tubi	ing Diamete	r									
	1/4" OD:	2.4 ml/ft 3		gth of tubi			_ millilet				
	3/8" OD:	9.7 ml/ft 2		gth of tubi			_millilet			•	
	1/2" ODI: 2	! 1.6 ml/ft 2	X(leng	gth of tubi	ng)) =		_ millilet	ters			

FIELD MEASUREMENT LOG FOR GROUNDWATER SAMPLE COLLECTION

I	Project Name:	CWL-	GWM			Project N	Project No.: 98026.01.07					
1	Well I.D.:	WL-n	1W5U			Date:	Date: 16-12-06					
1	Weather	Veather										
	Method:	/_ Po	ortable pump)	Dedicated pump				Pump depth: 499			
i	٠.			PUR	GE ME	ASUREMENTS 50 mg/						
	Depth to Water (FT)	Time 24 hr	Vol. Lgls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance	
	488.23	0835		Stal	RT-							
	492.75	0844	5	11.75	119	295.0	7112		0.39	177.4	19.00	
ſ	494.42	0848	7	13.88	825	287.6	7.25		0.50	67.3	6.69	
	496.15	0852	9	16.28	821	283.0	7.26		0.73	67.7	6.61	
	497,20	0855	10	16.97	817	281.4	7.27		0.80	68.5	6.58	
	497.85	0857	[[17.40	816	280.6	7.27		0.54	68.4	6.56	
	498.25	0900	12	17.51	816	279.6	7.29		0.72	69.7	4.63	
- [499.02	0902	12.5	17.99	817	278.5	7.28		1.00	68.1	6.43	
	499.02	0902	DRY									
3	489.85	0810	STA	R+					1.			
	494,25	0822	5	13.63	841	234,7	7.26		0.68	112.0	11.55	
	495.81	0827	7	15.65	890	239.4	7.15		6.52	67.6	6.55	
	497.32	0833	٩	16.96	882	242.0	7.15		0.47	61.6	5.90	
		0834		h PIE								
	COC number	<u> </u>	0838 83646	, 083	047							

Purge Volume Calculations

Well Diameter	
2" well: 0.16 gal/ft X (height of water column) =	gallons
4" well: 0.65 gal/ft X (height of water column) =	gallons '
6" well: 1.47 gal/ft X (height of water column) =	gallons
Tubing Diameter	
1/4" OD: 2.4 ml/ft X (length of tubing) =	millileters
3/8" OD: 9.7 ml/ft X (length of tubing) =	millileters
1/2" OD1: 2 1.6 ml/ft $X_{\underline{\underline{}}}$ (length of tubing)) =	millileters

Project Name:	CWL	-Gwm			Project N	Project No.: 98026.01.07						
Well I.D.:	mu	-Gwm			Date:	10-18	-06					
Weather												
Method:Portable pumpXDedicated pump Pump depth: 549												
PURGE MEASUREMENTS 50 mg/L												
Depth to Water (FT)	Time 24 hr	Yol. Dgls	Temp ℃	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and appearance		
494.731	0826		St	ART	-							
494.74	0844	2	9.75	590	210.1	8.34		3.99	78.9	8.41		
494.73	0900	4	10.90	640	215.7	8.32		3.72	76.1	8.38		
	0924	6	12.16	899	248.8	7.05		1.46	77.0	8.18		
	0942	8	13.22	988	263.0	6.94		1.63	77.0	8-06		
	1001	10	13.32	988	271.4	6.93		0.86	76.0	7-92		
494.75	1009	17	13-04	990	275.2	6-93		0.79	73.4	7.70		
49474	1017	12	13.10	991	274.9	6.93		0.68	73.5	7-72		
494.74	1026	13	13.12	491	275.1	6.93		0.106		7.72		
4.94.74	1035	14	13.13	990	274.8			0.59	73.4	7.69		
494.74	1036		AMO	1/5 -								
1764			1									
								<u> </u>	<u>. </u>			
				<u> </u>				 				
COC number((s):	6/18	12				<u> </u>	.l	1			
Sample numb		0830										
			Pu	rge Volu	ıme Calcu	lations						

Well Diameter
2" well: 0.16 gal/ft X (height of water column) = gallons
4" well: 0.65 gal/ft X (height of water column) = gallons
6" well: 1.47 gal/ft X (height of water column) = gallons
Tubing Diameter
1/4" OD: 2.4 ml/ft X (length of tubing) = millileters
3/8" OD: 9.7 ml/ft X (length of tubing) = millileters
1/2" ODI: 2 1.6 ml/ft X (length of tubing)) = millileters

FIELD MEASUREMENT LOG FOR GROUNDWATER SAMPLE **COLLECTION**

Project Name:	CWL	Project No.: 980	26.01.07	
Well I.D.:	CWL -MW6U	Date: 10-10	1-06 /10	1-11-06
Weather	Partly cloudy ,	C001		
Method:	Portable pump	Dedicated pump	Pump depth:	499'

PURGE MEASUREMENTS

٠.			GE ME	ASURE	EMENTS DO				DO MOL	
Depth to Water (FT)	Time 24 hr	Vol. Igls	Temp °C	Ec µmho	ORP MV	pН	Flow L gls	Turb NTU	DO %	-Color and -appearance
488.75	0823		Start	Purg	e					·
492.61	0834	لہ	9.53	000	266.3	8.06		0.69	71.8	8.18
494.09	0838	71094	11.40	871	28518	7.26		0.51	53.3	5.76
495,78		9128	14.45	874	281.3	7.25		6.71	53.8	5745
496.97	0847	11	16.17	875	278.6	7.23		1.39	54.5	5.29
498.21	0854	13	16.69	876	277.0	7.20		0.92	53.7	5.19
499.01	0856	14	17:41	876	276.6	7.20		0.99	53.8	5.14
10-11-06				<u> </u>				 		
488.92	0822		STAR	\						
493,10	0835	5	13.14	373	233.5	7.30		0.89	77.2	8:04
493.70	0838	6	14.49	873	235.6	7.29		6.82	97.3	9.93
494.35	0840	17	15.28	873	233.1	17.24		0.81	62.6	6.17
495.08	0843	8	16.20	876	228.9	7.22		0.79	56.8	5.55
·	0844		sam P	le						
COC number		1836								
Sample number(s): 083042										

Purge Volume Calculations

5	
Well Diameter	
2" well: 0.16 gal/ft X (height of water column) = gallons	
4" well: 0.65 gal/ft X (height of water column) = gallons	
6" well: 1.47 gal/ft X (height of water column) = gallons	
Tubing Diameter	
1/4" OD: 2.4 ml/ft X(length of tubing) = millileter	S
3/8" OD: 9.7 ml/ft X (length of tubing) = millileter	S
1/2" ODI: 2 1.6 ml/ft X (length of tubing)) = millileter	S

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

	SNL/NM	Project Name: C	CWL		SNL/NM Project No.: 98026.01.04.01						
	Contracto	or Project Name:			Contractor Project No.:						
		W-74-70-		pH, TEMPERA	ATURE Meter						
	Make & N	Model: YSI 6820			Serial No.: 99J0064						
	PH Probe	Model No.: YSI	6565		Serial No.: YSI 6565 03J						
	pH Calibi	rated to (std): 7.00	0		pH sloped to	(std): 10.00					
	Reference Value:			1.00		.00	10.00				
			Value	Temp	Value	Temp	Value	Temp			
	1. Time:	07/2	4-02	18.4	7.01	18.4	10.00	18-4			
	2. Time:	1003	4.01	19.1	7.00	19.1	9.99	19.1			
10/9	3. Time:	0640	4.01	17.0	7.00	17.0	10.01	17.0			
.7/	4. Time:	1182	402	18.7	7.01	18.7	10.00	18.7			
	Standard	Lot No.: 031187									
	Expiration	n Date: 8-2007									
	Ec Probe	Model No.: YSI6	560		Serial No.: 03J1141						
	Reference	e Value: 1278 @ 1	20C		Standard Lot #: 2307212						
			Value	Temp	Expiration Da	te: JUL 2007					
	1. Time:	67/n	1279	18.4							
	2. Time:	1004	1280	19-0				•			
0/9	3. Time:	0643	1279	17.0							
* 1	4. Time:	1124	1277	18.7							
	Comment	s:									
	Calibratio	n Done by:			Date:		-				
			1/1	RL	10	-2-06	10-9-	06			

FOP94-46.RV2MSWord doc. 5/99

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

SNL/NM Project Name:	CWL		-	Project No.: 98026.01.04.01					
ORP Probe Model No.:	YSI 6565			Serial No.: YSI 6565 03J					
Reference value: 220.0				Standard Lot	No. 03K0868				
	Value	Value Temp		Expiration D	Pate: 10/2007	and the state of t			
I. Time: <i>Ø</i> 700	219.9	18,5	4						
2. Time:	220.1	19.0							
3. Time: 6646	219.9	17.0)						
4. Time 1/25	2-20.0	18	.6						
			TURBID	IMETER					
Make & Model No.: HA	CH 2100P			Serial No.: 0	030900032367	in all years			
Reference Value	.1			20	100	800			
Standard Lot No.									
1. Time 0750	.10		/	9.9	99.9	796			
2. Time 1002	.09		(0	1.9	100	797			
3. Time 0 %03			20	0.0	100	796			
4. Time 1059	, 09		2	0.1	101	796			
Comments:									
Calling in D			-						
Calibration Done By:	PI	1/	/_	Date:	11-2-16	10-9-06			

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	SNL/NM Project Name: CWL				SNL/NM Project No.: 98026.01.04.01			
	Contractor Project Name:				Contractor Project No.:			
			ORGANIC VAP	OR DI	ETECTOR			
	Make & Model:				Serial No.:			
	Cal. Gas: Isobutylene Conc., ppm:				Bulb, eV:			
	1. Time: Value:					Span Setting:		
	2.							
	3.	,						
	4.							
			•					
1]	DISSOLVED OX	YGE	N METER			
	Make & Model: YSI 6820			Seria	No.: YSI 6	562		
	DO Probe Serial No.: 03J0967							
	Calibration value:	8	1% Air Saturation @ 5	5200 ft./	DO mg/L	Atmospheric Pressure in/Hg		
	1. Time: 0649		81.690	17	1.51	24.49		
	2. Time: [500		\$1.5	-	1.49	24.49		
10/4	3. Time: 0633		81.6		1.79	24.40		
• •	4. Time: 1120		81.4	16070	7.77	24.40		
	Comments: Nova Lynx Digital Ba	aromete	r/ Altimeter S# 98	36870-	13 used in ca	alibration.		
	DO Charge= 39 V							
					,			
ŀ	Calibration done by:			Date:				
	4/1		η_{ℓ}	_ 2.2.		2-26 11-9-06		

SNL/NM Project Name: C	WL		SNL/NM Project No.: 98026.01.04.01					
Contractor Project Name:			Contractor Project No.:					
		pH, TEMPERA	TURE Meter					
Make & Model: YSI 6820			Serial No.: 99	9J0064				
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J				
pH Calibrated to (std): 7.00)		pH sloped to ((std): 10.00				
Reference Value:		1.00	7.	.00	10	0.00		
	Value	Temp	Value	Temp	Value	Temp		
1. Time: 0700	4.00	20.4	7.00	20.4	10.00	20.5		
2. Time: 1504	4.01	21,2	7.01	21,2	9.99	21.2		
3. Time:								
4. Time:								
Standard Lot No.: 031187								
Expiration Date: 8-2007								
Ec Probe Model No.: YSI6		Serial No.: 03J1141						
Reference Value: 1278 @ 2	20C		Standard Lot #: 2307212					
	Value	Temp	Expiration Date: JUL 2007					
1. Time: 0710	1277	20.6						
2. Time: 505	1279	21.2						
3. Time:								
4. Time:								
Comments:	· · · · · · · · · · · · · · · · · · ·	hamman e						
Calibration Done by:			Date:					
20			10-	3-06				

SNL/NM Project Name:	CWL		Project No.: 98026.01.04.01			
ORP Probe Model No.: \	YSI 6565		Serial No.: YSI 6565 03J			
Reference value: 220.0			Standard Lot N	No. 03K0868		
	Value	Temp	Expiration Dat	te: 10/2007		
1. Time: 0709	219.6	2015				
2. Time: 1513	220.1	21.2				
3. Time:						
4. Time						
	•	TURBID	IMETER			
Make & Model No.: HA	CH 2100P		Serial No.: 03	0900032367		
Reference Value	.1		20	100	800	
Standard Lot No.						
1. Time 0 850	11.	2	0.1	101	798	
2. Time 14 10	.09	10	9,9	99.9	796	
3. Time				,		
4. Time						
Comments:						
Calibration Done By:	R		Date: 10-3-06			

SNL/NM Project Name: CWL			SNL/NM Project No.: 98026.01.04.01				
Contractor Project Name:				Contractor Project No.:			
L							
	(ORGANIC VAP	OR DI	ETECTOR			
Make & Model:				Serial No.			
Cal. Gas: Isobutylene	Conc.	, ppm:		Bulb, eV:			
1. Time:		Value:			Span Setting:		
2.							
3.							
4.				-	,		
	.]	DISSOLVED O	XYGE	N METER			
Make & Model: YSI 6820			Serial No.: YSI 6562				
DO Probe Serial No.: 03J0967							
Calibration value:	8	1% Air Saturation @			Atmospheric Pressure in/Hg		
1. Time: 0702		81.6		114	24.49		
2. Time: 1500		61.4	9	8.11	24.48		
3. Time:							
4. Time:		/ 11:	06070		12		
Comments: Nova Lynx Digital Ba	aromete	r/ Altimeter S# 9	86870-	13 used in	calibration.		
DO Charge= 38-0							
Calibration done by:			Date:				
1/1				10-2-	. /		
1/ /				111-1-	ΩL		

ATTACHMENT A-1 WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

SNL/NM Project Name: C	WL		SNL/NM Project No.: 98026.01.04.01						
Contractor Project Name:			Contractor Project No.:						
		pH, TEMPER	ATURE Meter						
Make & Model: YSI 6820			Serial No.: 99	9J0064		·			
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J					
pH Calibrated to (std): 7.00)		pH sloped to ((std): 10.00					
Reference Value:		4.00	7.	.00	1	0.00			
	Value	Temp	Value	Temp	Value	Temp			
1. Time: 0630	4.01	18.9	7.00	18.9	10.00	18.9			
2. Time: 1050	4.02	20.6	6.99	20.6	9.99	20.6			
3. Time: 0 640	4.01	19.4	7.00	19.4	9.99	19.4			
4. Time: 09 55	4.02	20.1	7.01	20.1	9.99	26-1			
Standard Lot No.: 031187									
Expiration Date: 8-2007									
Ec Probe Model No.: YSI6	Ec Probe Model No.: YSI6560								
Reference Value: 1278 @ 2	20C		Standard Lot	Standard Lot #: 2307212					
	Value	Temp	Expiration Date: JUL 2007						
1. Time: 0634	1277	18.9							
2. Time: 1048	1276	30.6							
3. Time: 0642	1279	19.4							
4. Time: 0956	1279	20-1							
Comments:		4		74-11-00					
٠.									
Calibration Done by:	0		Date:						
,	VL		10-	4-06					

SNL/NM Project Name: C	CWL		Project No.: 98026.01.04.01				
ORP Probe Model No.: Y	SI 6565	<u> </u>		Serial No.: YSI 6565 03J			
Reference value: 220.0			Standard Lot	No. 03K0868			
	Value	Value Temp		Expiration D	ate: 10/2007		
1. Time: 0637	2199	18.	8			·	
2. Time: 1055	220.1	20.	6				
3. Time: 0646	220.1	19.6					
4. Time 0957	219.8	2011					
			TURBID	IMETER			
Make & Model No.: HAC	CH 2100P	,		Serial No.: (30900032367		
Reference Value	.1			20	100	800	
Standard Lot No.							
1. Time 0750	.0	9	2	0.0	101	799	
2. Time //00	.10)	10	1.9	100	797	
3. Time 0 800	. 1	1	2	0 · 0	100	798	
4. Time 1010	10)	10	9.9	101	796	
Comments:							
Calibration Done By:	76			Date:	1 - 4-06		

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

SNL/NM Project Name: CWL				SNL/NM Project No.: 98026.01.04.01		
Contractor Project Name:			C	Contractor	Project No.:	
		ong.prov.	OD DET	ECTOR		
251 025 15		ORGANIC VAPO				
Make & Model:				erial No.:		
Cal. Gas: Isobutylene	Conc., ppm:		E	Bulb, eV:		
1. Time:	Time: Value:				Span Setting:	
2.						
3.						
4.						
Make & Model: YSI 6820		DISSOLVED OX		METER (o.: YSI 6	562	
DO Probe Serial No.: 03J096	7			. 1	•	
Calibration value:		81% Air Saturation @	5200 ft./ DO) mg/L	Atmospheric Pressure in/Hg	
1. Time: 0625	7-1	81-6	7.	31	74.52°	
2. Time: 10 45		81.5	7	28	24.51	
3. Time: 0633		81-6	7.	27	24.58	
4. Time: 0949		81.7	1 7	. 29	24.58	
Comments: Nova Lynx Digita	l Barom	eter/ Altimeter S# 9	86870-T3	used in ca	alibration.	
DO Charge= 39.0						
DO Charge= 39.0						
DO Charge= 39.0						
DO Charge= 39.0						
DO Charge= 39.0						
DO Charge= 3 9.0 Calibration done by:			Date:			

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WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

SNL/NM I	Project Name: 0	CWL		SNL/NM Project No.: 98026.01.04.01					
Contractor	r Project Name:			Contractor Project No.:					
			pH, TEMPERA	TURE Meter					
Make & M	Model: YSI 6820			Serial No.: 99	J0064				
PH Probe	Model No.: YSI	6565		Serial No.: Y	SI 6565 03J				
pH Calibra	ated to (std): 7.0	0		pH sloped to ((std): 10.00		***************************************		
Reference	Value:	. 4	.00	7.	00	1	0.00		
		Value	Temp	Value	Temp	Value	Temp		
1. Time:	0644	4-01	19.7	7.01	19.7	18.00	19,7		
2. Time:	1/00	4.02	20.0	7.02	20-0	9-99	20.0		
3. Time:	0640	4.01	17.0	7.00	17.0	10.01	17.0		
4. Time:	1100	4.01	18.1	6.99	181	10.00	18.1		
	Lot No.: 031187								
Expiration	Date: 8-2007					<u>L</u>			
Ec Probe M	Model No.: YSI6	5560		Serial No.: 03	J1141				
Reference	Value: 1278 @	20C		Standard Lot #: 2307212					
		Value	Temp	Expiration Date: JUL 2007					
1. Time:	0641	1277	19.7	·					
2. Time:	1104	1277	20.0						
3. Time:	0643	1279	17.0						
4. Time:	1101	1277	18.1						
Comments:	:								
Calibration	Done by;			Date:			• **		
	1//		771-	10-6	-0h	0-9-06			

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SNL/NM Project Name:	CWL		Project No.: 98026.01.04.01					
ORP Probe Model No.: \	YSI 6565		Serial No.: Y	Serial No.: YSI 6565 03J				
Reference value: 220.0			Standard Lot	No. 03K0868				
	Value	Value Temp		Expiration Date: 10/2007				
1. Time: 0640	230.1	19.7						
2. Time: ////	220.2	20.1						
3. Time: 0646	219.9	17.0						
4. Time //60	222.0	18.1						
		TURBII	DIMETER					
Make & Model No.: HA	CH 2100P		Serial No.: 03	30900032367				
Reference Value	.1		20	100	800			
Standard Lot No.								
1. Time \(\int \) \(\int \) \(\int \)	.09	1	9.9	100	796			
2. Time 1040	.10		20.1	(01	797			
3. Time 0 % 0 3	.09		20-0	100	796			
4. Time 1050	.10		20.1	100	797			
Comments:								
Calibration Done By:	PC	RL	Date:	6-06 10-9	4-06			

SNL/NM Project Name: CWL			SNL/NM Project No.: 98026.01.04.01			
Contractor Project Name:		-		Contracto	r Project No.:	
L						
	(ORGANIC VAPO	OR DI	ETECTOR		
Make & Model:			Serial No.	:		
Cal. Gas: Isobutylene	Conc.,	, ppm:		Bulb, eV:		
1. Time:		Value:			Span Setting:	
2.						
3.					·	
4.						
		1				
	I	DISSOLVED OX	YGE	N METER		
Make & Model: YSI 6820			Seria	al No.: YSI 6562		
DO Probe Serial No.: 03J0967						
Calibration value:	81	1% Air Saturation @ 5	5200 ft./	DO mg/L	Atmospheric Pressure in/Hg	
1. Time: 0638		81.6	1 7	1.25	24.5]	
2. Time: 1000		81.5	<u> </u>	7.80	24.49	
3. Time: 06 33		81.6	<u> </u>	7.79	24.40	
4. Time: 1050		81.6		7.77	1 24.41	
Comments: Nova Lynx Digital Ba	aromete	r/ Altimeter S# 98	36870-	T3 used in	calibration.	
DO Charge= 39.0						
DO Charge 3 1.0						
Calibration done by:			Date:			
cunorunon done by:	01				110-0-06	
,	///	α	/ ^	1 0/	A = A A A A A	

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

SNL/NM Project Name: O	CWL		SNL/NM Project No.: 98026.01.04.01					
Contractor Project Name:		-	Contractor Project No.:					
		pH, TEMPERA	ATURE Meter					
Make & Model: YSI 6820			Serial No.: 9	9J0064				
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J				
pH Calibrated to (std): 7.0	pH sloped to	(std): 10.00						
Reference Value:	-	1.00	7	.00	1	0.00		
	Value	Temp	Value	Temp	Value Temp			
1. Time: 0646	4.03	16.8	6.99	16.8	9.98	16.8		
2. Time: 1045	4.01	19.7	7:00	19.7	10.01	19.7		
3. Time: 0728	4.03	15.7	7.00	15.7	9.99	15.6		
4. Time: 0915	4.02	17.0	7.01	17.0	9.99	17.0		
Standard Lot No.: 031187								
Expiration Date: 8-2007								
Ec Probe Model No.: YSI6	560		Serial No.: 0	3J1141				
Reference Value: 1278 @	20C		Standard Lot #: 2307212					
	Value	Temp	Expiration Date: JUL 2007					
1. Time: 0647	1275	16.8						
2. Time: 104 4	1276	19.7		•				
3. Time: 0 730	1277	15.4						
4. Time:								
0917	1277	17.0						
Comments:								
Calibration Done by:	Date: 10-10	-06						

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SNL/NM Project Name:	CWL			Project No.:	98026.01.04.01			
ORP Probe Model No.: `	YSI 6565	,,,,,,	Serial No.: YSI 6565 03J					
Reference value: 220.0			Standard Lot No. 03K0868					
	Value	Value Temp			ate: 10/2007			
1. Time: 0644	220-1	16.5	8					
2. Time: 1050	226.2	19.8						
3. Time: 0729	219,9	15.6						
4. Time 0920	219.8	17.0						
	TURBIDIMETER							
Make & Model No.: HA		Serial No.: 0	30900032367					
Reference Value	.1	.1		20	100	800		
Standard Lot No.								
1. Time 0750	.09		19.9		99.8	796		
2. Time 0948	.10		20) (100	797		
3. Time 0800	. 09		20	-0	99.9	796		
4. Time 0855	.10		2	0.0	99.8	795		
Comments:								
			-					
Calibration Done By:			Date:	10 0 10				
1.6				10	10-06			

SNL/NM Project Name: CWL			SNL/NM Project No.: 98026.01.04.01		
Contractor Project Name:				Contracto	r Project No.:
	(ORGANIC VA	APOR DI	ETECTOR	
Make & Model:				Serial No	
Cal. Gas: Isobutylene	Conc.,	, ppm:		Bulb, eV:	
1. Time: Value:				Span Setting:	
2.					
3.					
4.					
Make & Model: YSI 6820		DISSOLVED		No.: YSI	
DO Probe Serial No.: 03J0967 Calibration value:		1% Air Saturation	€ 5200 € /	DO == a/I	I Add the state of
1. Time: 06 40	- 81	81-6		'OB	Atmospheric Pressure in/H
2. Time: 1040		81. Y		-99	24.44
3. Time: 0720		81.6		. 62	24.39
4. Time: 0913		81.8	8	.20	24.34
Comments: Nova Lynx Digital E	3aromete	r/ Altimeter S#	986870-	T3 used in	calibration.
DO Charge= 39.0					
DO Charge= 39.0					
DO Charge= 39.0					
DO Charge= 39 0					
DO Charge= 39 0 Calibration done by:			Date:		

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

	SNL/NM Pro	ject Name:	CWL		SNL/NM Project No.: 98026.01.04.01					
	Contractor Pr	oject Name:			Contractor Pr	roject No.:				
				рН, ТЕМРЕР	RATURE Meter					
	Make & Mod	el: YSI 6820	<u>)</u>	Harris Chart.	Serial No.: 9	9J0064				
T	PH Probe Mo	del No.: YS	I 6565		Serial No.: Y	′SI 6565 03J				
F	pH Calibrated	d to (std): 7.0)0		pH sloped to	(std): 10.00				
I	Reference Value: 4.00				7	7.00	10	0.00		
			Value	Temp	Value	Temp	Value	Tem		
	1. Time: (1641	4-01	19.2	7.00	19.2	1001	19.2		
	2. Time: 1	050	4-01	20.0	7-01	20.0	10.00	20.0		
	3. Time: <i>0</i>	650	4.61	18.1	7.01	18.1	9.99	181		
4		015	4.01	19.0	7.00	19.0	10.01	19.0		
L	Standard Lot		<u>'</u>	,						
I	Expiration Da	ate: 8-2007								
E	Ec Probe Mod	iel No.: YSI	6560		Serial No.: 03	3J1141				
F	Reference Va	lue: 1278 @	20C		Standard Lot	Standard Lot #: 2307212				
			Value	Temp	Expiration Da	ate: JUL 2007				
1	1. Time:	642	1277	19.2						
2	2. Time:	51	1278	20.0	7					
	3. Time: 0	652	1279	18.1						
4	1. Time:	14	1277	19.0						
	Comments:									

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SNL/NM Project Name:	CWL			Project No.:	98026.01.04.01			
ORP Probe Model No.:	YSI 6565			Serial No.:	YSI 6565 03J			
Reference value: 220.0	· · · · · · · · · · · · · · · · · · ·			Standard Lot No. 03K0868				
	Value	Ten	np	Expiration Date: 10/2007				
1. Time:	220.1	19.2						
2. Time: 10 4 9	219.8	20.0	و.					
3. Time: 06 5b	219.8	18.1						
4. Time	220.0	19.0	2					
			TURBIE	DIMETER				
Make & Model No.: HACH 2100P				Serial No.: (030900032367			
Reference Value	.1			20	100	800		
Standard Lot No.				****				
1. Time 0750	-0 (9	1	9.9	(00)	798		
2. Time 6915	.0		1	20.0	99.9	797		
3. Time 08/0	.10		2	0.0	10/	799		
4. Time 0912	0912 .09		20). (100	796		
Comments:								
Calibration Done By:	7.4	\mathcal{Z}		Date:	12-06	10-12-06		

WATER-SAMPLE-COLLECTION FIELD EQUIPMENT CHECK LOG

	SNL/NM Project No.: 98026.01.04.01					
			Contractor Project No.:			
	ORGANIC VAP	OR DI	ETECTOR			
		Serial No.:				
Conc.	, ppm:		Bulb, eV:			
	Value:		Span Setting:			
		_				
I	DISSOLVED OX	YGE	N METER			
		Seria	l No.: YSI	6562		
		-				
81	1% Air Saturation @ :	5200 ft./	DO mg/L	Atmospheric Pressure in/Hg		
	81.6		7.52	24.48		
	81.8	_	7. 48	24.48		
	81-6	7	1.57	24.36		
	81.5	.	7.54	24.36		
aromete	er/ Altimeter S# 9	86870-	T3 used in	calibration.		
		Date:				
(RL		10-12	-06 10-13-06		
	Conc.	DISSOLVED OX 81% Air Saturation @ S 81. 6 81. 5	Value: DISSOLVED OXYGE Seria 81% Air Saturation @ 5200 ft/ Sl. 6 81.5 arometer/ Altimeter S# 986870-	Contracto Serial No.		

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	SNL/NM Project Name: 0	CWL	· · · · · · · · · · · · · · · · · · ·	SNL/NM Pro	oject No.: 98026	5.01.04.01				
	Contractor Project Name:	·		Contractor Project No.:						
			pH, TEMPERA	ATURE Meter	ATURE Meter					
	Make & Model: YSI 6820			Serial No.: 9	9J0064					
	PH Probe Model No.: YSI	6565		Serial No.: Y	/SI 6565 03J					
	pH Calibrated to (std): 7.0	0		pH sloped to	(std): 10.00					
	Reference Value:	7	7.00	1	0.00					
		Value	Temp	Value	Temp	Value	Temp			
	1. Time: 0640	4.01	20.2	7.01	20.2	10-00	20.2			
	2. Time: 1300	4.03	20.6	7.02	20.6	10.06	2016			
10/20	3. Time: 06 50	401	20.0	7.00	20.0	9.49	20.0			
17	4. Time: 1008	4.02	20.7	7.01	20-7	10.00	20.7			
	Standard Lot No.: 031187									
	Expiration Date: 8-2007									
	Ec Probe Model No.: YSI6	5560		Serial No.: 03J1141						
	Reference Value: 1278 @	20C		Standard Lot #: 2307212						
		Value	Temp	Expiration Date: JUL 2007						
	1. Time: 0642	1278	20.2							
	2. Time: 1302	1279	20.6							
19/20	3. Time: 0654	1277	20.0							
,	4. Time: / 0/0	1277	20.7							
	Comments:									
	Calibration Done by:		W	Date:	-16-06	10-20-	06			

SNL/NM Project Name:	CWL		Project No.:	: 98026.01.04.01			
ORP Probe Model No.:	YSI 6565	The state of the s	Serial No.:	Serial No.: YSI 6565 03J			
Reference value: 220.0			Standard Lo	ot No. 03K0868			
	Value Temp		Expiration I	Date: 10/2007			
1. Time: 0644	219.9	20.2					
2. Time: 1303	220.1	20.6					
3. Time: 0 651	220.2	20.0					
4. Time 100 4	219.9	20.7					
		TUR	BIDIMETER				
Make & Model No.: HA	CH 2100P	# JPUNEO	Serial No.:	030900032367			
Reference Value	.1		20	100	800		
Standard Lot No.							
1. Time 0750	.10		20.1	101	798		
2. Time ///0	-11		20.0	99.9	796		
3. Time 0655	.69		19.9	100	795		
4. Time 0910	.10		20.1	101	796		
Comments:							
Calibration Done By:	R	/	Date:	16-00 10	-20-06		

ORGANIC VAPOR DETECT Make & Model: Ser Cal. Gas: Isobutylene Conc., ppm: Bul 1. Time: Value: 2. 3. 4. DISSOLVED OXYGEN MI Make & Model: YSI 6820 Serial No. DO Probe Serial No.: 03J0967 Serial No.: 03J0967 Calibration value: 81% Air Saturation @ 5200 ft/ DO m 1. Time: 0631 7.3	SNL/NM Project Name: CWL			SNL/NM Project No.: 98026.01.04.01			
Make & Model: Ser	Project Name:		Cont	actor Pro	ject No.:		
Make & Model: Ser		ORGANIC VAP	OR DETECT	ror			
1. Time: Value: 2. 3. 4. DISSOLVED OXYGEN MI Make & Model: YSI 6820 Serial No. DO Probe Serial No.: 03J0967 Calibration value: 81% Air Saturation @ 5200 ft/ DO n 1. Time: 0636 7.3 2. Time: 1250 50.6% 7.3 3. Time: 6645 80.6 7.3 4. Time: 1000 \$1.5 7.3 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u DO Charge= 3 % O	del:	OHOLING TIE		No.:			
2. 3. 4. DISSOLVED OXYGEN MI Make & Model: YSI 6820 DO Probe Serial No.: 03J0967 Calibration value: 1. Time: 0631 2. Time: 1250 3. Time: 6645 4. Time: 6645 4. Time: 1000 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the series of the seri	obutylene	Conc., ppm:		eV:			
3. 4. DISSOLVED OXYGEN MI Make & Model: YSI 6820 Serial No.: 03J0967 Calibration value: 1. Time: 0631 2. Time: 1250 3. Time: 1250 3. Time: 6645 4. Time: 1000 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 under the serial Nova Lyn		Value:		Spa	n Setting:		
### DISSOLVED OXYGEN MIN Make & Model: YSI 6820 Serial No. ### DO Probe Serial No.: 03J0967 Calibration value:							
DISSOLVED OXYGEN MI Make & Model: YSI 6820 DO Probe Serial No.: 03J0967 Calibration value: 1. Time: 0631 2. Time: 1250 3. Time: 1250 3. Time: 6645 4. Time: 1000 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u DO Charge= 3 %					V-10-1		
Make & Model: YSI 6820 DO Probe Serial No.: 03J0967 Calibration value: 81% Air Saturation @ 5200 ft/ DO m 1. Time: 0631 2. Time: 1250 3. Time: 1250 3. Time: 6645 4. Time: 1000 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u DO Charge= 3 % O					The second secon		
2. Time: 1250 81.6 7.3 3. Time: 6645 81.6 7.3 4. Time: 1000 81.5 7.2 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u DO Charge= 3 % 0	erial No.: 03J09	81% Air Saturation @	Serial No.:	YSI 6562	tmospheric Pressure in/Hg		
3. Time: 6645 81-6 7.3 4. Time: 1000 81-5 7.2 Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u			7.3=		24.08		
7. 2. Time: 1000 Steel 7. 2. Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u			7.3	5	24.69		
Comments: Nova Lynx Digital Barometer/ Altimeter S# 986870-T3 u		- A	7 0 0	,	24.32		
	Nova Lynx Digit = 3 % -O	ter/ Altimeter S# 9	86870-T3 use	d in calib	ration.		
Calibration done by: Date:	done by:		Date:		10-20-06		

SNL/NM Project Name: C	SNL/NM Project Name: CWL				SNL/NM Project No.: 98026.01.04.01				
Contractor Project Name:			Contractor Project No.:						
		pH, TEMPERA							
Make & Model: YSI 6820			Serial No.: 99	9J0064					
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				
pH Calibrated to (std): 7.00)		pH sloped to	(std): 10.00		AUDITOR : ·			
Reference Value:	4	.00	7.	.00	10	0.00			
	Value	Temp	Value	Temp	Value	Temp			
1. Time: 0635	4.02	19.8	7-01	19-8	10-01	19.8			
2. Time: 1130	4.01	20.6	7.00			20.6			
3. Time:	1								
4. Time:									
Standard Lot No.: 031187									
Expiration Date: 8-2007									
Ec Probe Model No.: YSI6	560	H-0	Serial No.: 03	#: 2307212					
Reference Value: 1278@2	20C								
	Value	Temp	Expiration Date: JUL 2007						
1. Time: 0637	1277	14.8							
2. Time: 1133	1279	20.6							
3. Time:									
4. Time:									
Comments:									
0.17			D						
Calibration Done by:) <i>i</i>		Date:						
1/	4		10-1	7-06					

SNL/NM Project Name: 0	SNL/NM Project Name: CWL				Project No.: 98026.01.04.01				
ORP Probe Model No.: Y	'SI 6565			Serial No.: YSI 6565 03J					
Reference value: 220.0				Standard Lot No. 03K0868					
	Value	Value Temp			Expiration Date: 10/2007				
1. Time: 0634	219.8	19.9							
2. Time: (132	220.2	20.6							
3. Time:									
4. Time									
TURBIDIMETER									
Make & Model No.: HACH 2100P				Serial No.: 03	rial No.: 030900032367				
Reference Value	.1			20	100	800			
Standard Lot No.									
1. Time 0 710	.09	<u>, </u>	19	. 9	100	796			
2. Time)).		20	5.1	101	798			
3. Time									
4. Time		-							
Comments:									
Calibration Done By:	RL	Date:	0-17-06						

SNL/NM Project Name: CWL				SNL/NM Project No.: 98026.01.04.01			
Contractor Project Name:				Contractor Project No.:			
		ORGANIC VA	POR DE	TECTOR			
Make & Model:				Serial No.	:		
Cal. Gas: Isobutylene	Conc.	., ppm:		Bulb, eV:			
1. Time:		Value:			Span Setting:		
2.							
3.							
4.							
		DISSOLVED O	XYGEN	METER			
Make & Model: YSI 6820				No.: YSI			
DO Probe Serial No.: 03J0967			•				
Calibration value:	8	1% Air Saturation @	2) 5200 ft./ I	ft/ DO mg/L Atmospheric Pressure in/Hg			
1. Time: 0625		81.6	7.	39	24.13		
2. Time: 1124		81.5	17.	41	24.1)		
3. Time:			-				
4. Time:		1.11.	000070.5	T2 1:			
Comments: Nova Lynx Digital	Baromete	er/ Altimeter S#	9868/0-	3 used in	calibration.		
DO Charge= 3 8.0							
20 change 3 8 . O							
•							
•							
Calibration done by:			Date:				
\mathcal{D}_{I}				14 17	0/-		

SNL/NM Project Name: C	WL		SNL/NM Project No.: 98026.01.04.01						
Contractor Project Name:			Contractor Project No.:						
		pH, TEMPERA	TURE Meter	Serial No.: 99J0064 Serial No.: 99J0064 Serial No.: YSI 6565 03J OH sloped to (std): 10.00					
Make & Model: YSI 6820			Serial No.: 99	J0064					
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J					
pH Calibrated to (std): 7.00			pH sloped to ((std): 10.00					
Reference Value:	4	.00	7.	00	10	0.00			
	Value	Temp	Value	Temp	Value	Temp			
1. Time: 0640	4.01	20.1	7,00	20.1		20.1			
2. Time: 12 30	4.02	20.6	7.01	20.6	9-99	20-6			
3. Time:									
4. Time:									
Standard Lot No.: 031187									
Expiration Date: 8-2007									
Ec Probe Model No.: YSI6	560		Serial No.: 03	J1141	07212				
Reference Value: 1278 @ 2	20C		Standard Lot	Serial No.: 03J1141 Standard Lot #: 2307212 Expiration Date: JUL 2007					
	Value	Temp	Expiration Date: JUL 2007						
1. Time: 0642	1276	20.1							
2. Time: 1231	1279	20.6							
3. Time:									
4. Time:			<u> </u> 						
Comments:				- 1 <u> </u>	· · · · · · · · · · · · · · · · · · ·				
		•							
Calibration Done by:			Date:						
	Ri		10	-18-06					

SNL/NM Project Name: CWL			Project No.:	Project No.: 98026.01.04.01			
ORP Probe Model No.: YSI 6565			Serial No.: Y	Serial No.: YSI 6565 03J			
Reference value: 220.0		1000	Standard Lot	No. 03K0868			
	Value	Temp	Expiration D	Expiration Date: 10/2007			
1. Time: 0643	219.9	20.2					
2. Time: 1229	220.1	20.6			·		
3. Time:							
4. Time		-					
		TURB	DIMETER				
Make & Model No.: HA	CH 2100P		Serial No.: 0	Serial No.: 030900032367			
Reference Value	.1		20	100	800		
Standard Lot No.							
1. Time 0715	.09		20-1	101	797		
2. Time	-10	1	9.9	100	796		
3. Time					.]		
4. Time							
Comments:							
		-		90.774W			
Calibration Done By: Date: 10-18-06							

SNL/NM Project Name: CWL				SNL/NM Project No.: 98026.01.04.01		
Contractor Project Name:				Contractor Project No.:		
	-	ORGANIC V	A DOD D	FTFCTOD		
Make & Model:			Arokb	Serial No		
Make & Model.				Bellai Ivo	••	
Cal. Gas: Isobutylene	Conc	c., ppm:		Bulb, eV:		
1. Time:		Value:			Span Setting:	
2.						
3.	•.•					
4.						
		DISSOLVED	OXYGE	N METER		
Make & Model: YSI 6820			Seria	Serial No.: YSI 6562		
DO Probe Serial No.: 03J0967						
Calibration value:		81% Air Saturation			Atmospheric Pressure in/Hg	
1. Time: 0633		81.6	-	1.26	24.29	
2. Time: 1225		81.8	-	7. 24	24-31	
3. Time:						
4. Time:						
Comments: Nova Lynx Digital Ba	aromet	ter/ Altimeter S	# 986870	-T3 used in	calibration.	
DO Charge= 4/0.0			,			
Calibration done by:			Date	:		
RL				. 10-18-06		

SNL/NM Project Name: CWL		SNL/NM Project No.: 98026.01.04.01					
Contractor Project Name:			Contractor Project No.:				
	pH, TEMPERA	TURE Meter					
Make & Model: YSI 6820			Serial No.: 99	9J0064	•		
PH Probe Model No.: YSI	6565		Serial No.: Y	SI 6565 03J			
pH Calibrated to (std): 7.00)		pH sloped to ((std): 10.00			
Reference Value:	4	1.00	7.	00	10	0.00	
	Value	Temp	Value	Temp	Value	Temp	
1. Time: 0646	4.01	19.7	7.01	19-6	10-01	19.6	
2. Time: [1 10	4.03	20.2	7.00	20.2	10.00	20.2	
3. Time:	1		,			- · ·	
4. Time:							
Standard Lot No.: 031187							
Expiration Date: 8-2007							
Ec Probe Model No.: YSI6	560		Serial No.: 03J1141				
Reference Value: 1278 @ 2	20C		Standard Lot #: 2307212				
	Value	Temp	Expiration Date: JUL 2007				
1. Time: 0646	1277	19.7					
2. Time: 1106	1279	20.2					
3. Time:	10 (1	<i>S V V</i>					
4. Time:	<u> </u>						
Comments:							
•							
Calibration Done by:	Ω		Date:		,		
	166		10	-19-06			

SNL/NM Project Name: CWL				Project No.: 98026.01.04.01				
ORP Probe Model No.: YSI 6565			Serial No.: Y	SI 6565 03J				
Reference value: 220.0				Standard Lot 1	No. 03K0868	•		
	Value	Temp	p	Expiration Da	te: 10/2007			
1. Time: 0644	220.2	19.7						
2. Time: //0 %	219.9	20.1						
3. Time:								
4. Time								
		7	TURBID	IMETER				
Make & Model No.: HA	CH 2100P			Serial No.: 030900032367				
Reference Value	.1	.1		20	100	800		
Standard Lot No.								
1. Time 0715	110	10		7.9	99.8	795		
2. Time 10 40	.11		2	0 · (100	797		
3. Time						·		
4. Time								
Comments:								
Calibration Done By:				Date:	0-14-06			
					' / / ' ' '			

SNL/NM Project Name: CWL			SNL/NM Project No.: 98026.01.04.01		
Contractor Project Name:			Contractor Project No.:		
		ORGANIC VAI	POR D	ETECTOR	
Make & Model:			Serial No.:		
Cal. Gas: Isobutylene	. Gas: Isobutylene Conc., ppm:			Bulb, eV:	
1. Time:		Value:			Span Setting:
2.					
3.					
4.			,		
-		L			
	I	DISSOLVED O	XYGE	N METER	
Make & Model: YSI 6820			Serial No.: YSI 6562		
DO Probe Serial No.: 03J0967					
Calibration value:	81	81% Air Saturation @ 5200 ft./ DO mg/L		DO mg/L	Atmospheric Pressure in/Hg
1. Time: 0640		81.6 7.37			24.44
2. Time: \\(105		81.4		1.34	24-44
3. Time:					
4. Time:					
Comments: Nova Lynx Digital B	arometer	r/ Altimeter S# 9	986870-	T3 used in	calibration.
DO Charge 1/1 A					
DO Charge= 40.0					
					•
Calibration done by:			Date:		
Canbration done by:			Date.		
<u> </u>				10-10	a-ab

Date: 10/02/06 //0-9-06	Sheetof
ER Site #(s): <u>CWL -GWM</u> Well= <u>CWL-MW2BU</u> Applicable documentation:	Operable Units(s)
Site Work Plan: PHS:9631246780-008, HASP 222696 FOP's: 94-01,94-25,94-26,94-28,94-30,94-34,94-46,94-47,94-46	48,95-0 <u>2</u>
MEETING CONDUCTED BY: Robert Lynch NAME PRINTED	SIGNATURE POPUNA
SAFETY TOPICS PRESENT	TED
Protective Cloting/Equipment: Level-D, when sampling	
Chemical Hazards: Acids in Sample containers, safety glasses	and latex gloves when sampling
Radiological Hazards: None	
Physical Hazards: Elements, slip, trip, falls, possible biological	
Emergency Procedures: Aide, Call, Transport	
Hospital/Clinic: Sandia Medical Phone: ()844-0911/911	Paramedic Phone: ()911
Hospital Address: 7 th & F street	•
Special Equipment: Sampling pumps	
Other:	
ATTENDEES	
NAME PRINTED: Carolyn Daniel SIGNATUR	
NAME PRINTED HERRED SANTILLANT SIGNATUR	RE: Hyan Stille
NAME PRINTED : William J 61 bs on SIGNATUR	RE: William I filis
NAME PRINTED:SIGNATURE	RE:
NAME PRINTED:SIGNATURE	RE:
INK: Unknown: NA: Not applicable: ND: Not done	

Date: 10/03/06				Sheet	of
ER Site #(s): <u>CWL</u> Applicable documen		Well= CWL-M V	V2BL (Operable Units(s)	
Site Work Plan: Pl- FOP's: 94-01,94-	15:96312467			95-02	
MEETING CONDU	NAI	ME PRINTED	CS PRESENTE	SIGNATURE	<u></u>
Protective Cloting/E	Equipment: Leve	el-D, when samp	ling		
Chemical Hazards:	Acids in Samp	le containers, s	afety glasses an	d latex gloves w	hen sampling
Radiological Hazard	ls: None		· · · · · · · · · · · · · · · · · · ·		
Physical Hazards: <u>E</u>	Elements, slip,	trip, falls, poss	ible biological		
Emergency Procedu	res: Aide, Call,	Transport			
Hospital/Clinic: Sar	ndia Medical	Phone: () <u>8</u>	44-0911/911 Pa	aramedic Phone: ()911
Hospital Address: 7	7 th & F street	. ,,			
Special Equipment:	Sampling pump	S			·····
Other:					
		ATTEN	IDEEC		
	741 Uin			1/1/11	1911
NAME PRINTED:	_00,111an	NJGIBSON	SIGNATURE:	www	- yrong
NAME PRINTED:			SIGNATURE:		·
NAME PRINTED:			SIGNATURE:	·	
NAME PRINTED:		-	SIGNATURE:	-	
NAME PRINTED:			SIGNATURE:		

UNK: Unknown: NA: Not applicable: ND: Not done.

Date: 10/04/06 /10-5-06	Sheetof
ER Site #(s): <u>CWL -GWM</u> Well=CWL-BW4 Applicable documentation:	
Site Work Plan: PHS:9631246780-008, HASP FOP's:94-01,94-25,94-26,94-28,94-30,94-34,94-4	
MEETING CONDUCTED BY: Robert Lynch NAME PRINTED	SIGNATURE 10-5-06 PLINE
SAFETY TOPICS	PRESENTED
Protective Cloting/Equipment: Level-D, when sampling	·
Chemical Hazards: Acids in Sample containers, saf	ety glasses and latex gloves when sampling
Radiological Hazards: None	444
Physical Hazards: Elements, slip, trip, falls, possible	e biological
Emergency Procedures: Aide, Call, Transport	
Hospital/Clinic: Sandia Medical Phone: ()844	-0911/911 Paramedic Phone: ()911
Hospital Address: 7 th & F street	•
Special Equipment: Sampling pumps	
Other:	
NAME PRINTED: William Gibson	. 1
A	
NAME PRINTED: William Ginson	SIGNATURE: ALL STORE
NAME PRINTED: William Gibsin	SIGNATURE: William J. July
NAME PRINTED:	_SIGNATURE:
NAME PRINTED:	_SIGNATURE:
UNK: Unknown: NA: Not applicable: ND: Not done.	

Date: 10/06/06	110-9	<u>-0</u> 8		Sheetof	
ER Site #(s): <u>CWL</u>		Well=CWL-BW3	Ope.	rable Units(s)	
Applicable documer					
		6780-010, HASP			
FOP's: 94-01,94-	<u> 25,94-26,94-</u>	28,94-30,94-34,94-4	6,94-47,94-48,95 -	<u>-02</u>	
MEETING CONDU	N	Robert Lynch IAME PRINTED SAFETY TOPICS	,	Majuré Rolfina	
Protective Cloting/E	equipment: Le	evel-D, when sampli	ng .		
Chemical Hazards:	Acids in Sar	mple containers, saf	ety glasses and lo	atex gloves when sampling	
Radiological Hazard	ls: None				
Physical Hazards: E	lements, sli	p, trip, falls, possib	le biological		
Emergency Procedu	res: Aide, Ca	ll, Transport			
Hospital/Clinic: Sar	ndia Medical	Phone: ()844	-0911/911 Paran	nedic Phone: ()911	
Hospital Address: 7	th & F street				
Special Equipment:	Sampling pur	mps			
Other:					
		ATTENI	DEES		
NAME PRINTED:	Willia	n bibson	_SIGNATURE:	William JAil)	+
NAME PRINTED:		-	_SIGNATURE: _	<i>y y</i>	
NAME PRINTED:	William	n Gibson	_SIGNATURE:	William John	
NAME PRINTED:	Caro	lyn David	SIGNATURE:		X
NAME PRINTED:			_SIGNATURE: _		

UNK: Unknown: NA: Not applicable: ND: Not done.

Date: 10/10/06 / 10-1/-06	Sheetof
ER Site #(s): <u>CWL -GWM</u> Well=CWL-MW6U Applicable documentation:	Operable Units(s)
Site Work Plan: PHS:9631246780-010, HASP 22269 FOP's:94-01,94-25,94-26,94-28,94-30,94-34,94-46,94-4	
	Affect of
MEETING CONDUCTED BY: Robert Lynch NAME PRINTED	SIGNATURE
SAFETY TOPICS PRES	SENTED
Protective Cloting/Equipment: Level-D, when sampling	
Chemical Hazards: Acids in Sample containers, safety glo	asses and latex gloves when sampling
Radiological Hazards: None	
Physical Hazards: Elements, slip, trip, falls, possible biolo	ogical
Emergency Procedures: Aide, Call, Transport	
Hospital/Clinic: Sandia Medical Phone: ()844-0911/	911 Paramedic Phone: ()911
Hospital Address: 7th & F street	•
Special Equipment: Sampling pumps	· · · · · · · · · · · · · · · · · · ·
Other:	
ATTENDERE	
ATTENDEES NAME PRINTED: William bibson sign	11:11: 19:11
	<i>() ')</i>
	ATURE:
NAME PRINTED: William 6,650 SIGN	ATURE: William Jalo
NAME PRINTED:SIGN	ATURE:

Date: 10/12/06 /0-/3-06	Sheetof				
ER Site #(s): <u>CWL -GWM</u> Well=CWL-MW5U Applicable documentation:	Operable Units(s)				
Site Work Plan: PHS:9631246780-010, HASP 222696 FOP's: 94-01,94-25,94-26,94-28,94-30,94-34,94-46,94-47,94-4	- 18,95-02				
MEETING CONDUCTED BY: Robert Lynch NAME PRINTED	SIGNATURE OF MAL				
SAFETY TOPICS PRESENT	ED				
Protective Cloting/Equipment: Level-D, when sampling					
Chemical Hazards: <u>Acids in Sample containers, safety glasses</u>	and latex gloves when sampling				
Radiological Hazards: None					
Physical Hazards: Elements, slip, trip, falls, possible biological					
Emergency Procedures: Aide, Call, Transport					
Hospital/Clinic: Sandia Medical Phone: ()844-0911/911	Paramedic Phone: ()911				
Hospital Address: 7 th & F street					
Special Equipment: Sampling pumps					
Other:					
ATTENDEES	10.11				
NAME PRINTED: WILLIAM GIBSON SIGNATUR					
NAME PRINTED: H2FRED SANTI LSIGNAFUR					
NAME PRINTED: William Gibson SIGNATUR					
NAME PRINTED: ALCROD SANTILLAND SIGNATUR	E: Hyrd Stile				
NAME PRINTED:SIGNATUR	E:				
UNK: Unknown: NA: Not applicable: ND: Not done.					

10/13

Date: 10/1//06		Sheetof
ER Site #(s): <u>CWL -GWM</u>	Well=CWL-MW	Operable Units(s)
Applicable documentation:		
Site Work Plan: PHS:963124		
FOP's: 94-01,94-25,94-26,94-	-28,94-30,94-34,94-4	46,94-47,94-48,95-02
MEETING CONDUCTED BY:]	Robert Lynch IAME PRINTED	SIGNATURE
s	SAFETY TOPICS	PRESENTED
Protective Cloting/Equipment: Le	evel-D, when samplin	ng
Chemical Hazards: Acids in Sar	mple containers, saf	ety glasses and latex gloves when sampling
Radiological Hazards: None		
Physical Hazards: Elements, sli	p, trip, falls, possib	le biological
Emergency Procedures: Aide, Ca	ll, Transport	
Hospital/Clinic: Sandia Medical	Phone: () <u>844</u>	1-0911/911 Paramedic Phone: ()911
Hospital Address: 7th & F street	7 T 10 10 10 10 10 10 10 10 10 10 10 10 10	
Special Equipment: Sampling pur	mps	
Other:		
	ATTENI	DEES
NAME PRINTED: CARO	/	_SIGNATURE:
NAME PRINTED: Acres	SAUTTLLANES	SIGNATURE: Affal Sotilla
NAME PRINTED:		
NAME PRINTED:	The state of the s	_SIGNATURE:
NAME PRINTED:		_SIGNATURE:
UNK: Unknown: NA: Not appli	cable: ND: Not done.	

ENVIRONMENTAL RESTORATION TAILGATE SAFETY MEETING FORM

Date: 10/18/06	Sheetof
ER Site #(s): <u>CWL -GWM</u> Well=CWL-MW Applicable documentation:	Operable Units(s)
Site Work Plan: PHS:9631246780-010, HASP	222696
FOP's: 94-01,94-25,94-26,94-28,94-30,94-34,94-4	46,94-47,94-48,95- <u>02</u>
MEETING CONDUCTED BY: Robert Lynch	Velling
NAME PRINTED	SIGNATURÉ
SAFETY TOPICS	PRESENTED
Protective Cloting/Equipment: Level-D, when sampling	ng
Chemical Hazards: Acids in Sample containers, sat	fety glasses and latex gloves when sampling
Radiological Hazards: None	
Physical Hazards: Elements, slip, trip, falls, possib	le biological
Emergency Procedures: Aide, Call, Transport	
Hospital/Clinic: Sandia Medical Phone: ()844	4-0911/911 Paramedic Phone: ()911
Hospital Address: 7 th & F street	
Special Equipment: Sampling pumps	
Other:	
A TITIE NI	DEEC
ATTENI	<i>A</i> .
NAME PRINTED: A FRID SANTILLAND	
NAME PRINTED: WILLIAM J 6,650N	_SIGNATURE: William & XIII
NAME PRINTED:	_SIGNATURE:
NAME PRINTED:	_SIGNATURE:
NAME PRINTED:	SIGNATURE:
UNK: Unknown: NA: Not applicable: ND: Not done.	

ENVIRONMENTAL RESTORATION TAILGATE SAFETY MEETING FORM

Date: <u>10/19/06</u>			Sheetof
ER Site #(s): <u>CWL</u> Applicable documen	-GWM Well=CWL-MW	/5L Ope	erable Units(s)
• •	S:9631246780-010, HASI	222696	
	25,94-26,94-28,94-30,94-34,94		-02
			
			711
MEETING CONDU	CTED BY: Robert Lynch		172/10/
	NAME PRINTED	Sf	SNATURE
	SAFETY TOPIC	S PRESENTED	
Protective Cloting/E	quipment: Level-D, when samp	ling	
Chemical Hazards:	Acids in Sample containers, so	afety glasses and	atex gloves when sampling
Radiological Hazard	s: None	P	
Physical Hazards: <u>E</u>	lements, slip, trip, falls, possi	ble biological	· · · · · · · · · · · · · · · · · · ·
Emergency Procedur	es: Aide, Call, Transport		
Hospital/Clinic: San	dia Medical Phone: ()84	44-0911/911 Para	medic Phone: ()911
Hospital Address: 7th	h & F street		
Special Equipment:	Sampling pumps	***************************************	
Other:			
		•	
	ATTEN		
NAME PRINTED:	William J Gibson	SIGNATURE: _	William J Ah J
NAME PRINTED:		SIGNATURE: _	
NAME PRINTED:		SIGNATURE: _	
NAME PRINTED:		SIGNATURE: _	
NAME PRINTED:	1000	SIGNATURE: _	

UNK: Unknown: NA: Not applicable: ND: Not done.

ENVIRONMENTAL RESTORATION TAILGATE SAFETY MEETING FORM

ER Site #(s): <u>CWL -GWM</u> We	ell=CWL-MW2BU Operable Units(s)
Applicable documentation:	
Site Work Plan: PHS:9631246780	<u>0-010, HASP 222696</u> 4-30,94-34,94-46,94-47,94-48,95-02
FOP 8: 94-01,94-25,94-26,94-26,94	1-30,94-34,94-40,94-47,94-40,93-02
MEETING CONDUCTED BY: Robe	
NAME	PRINTED SIGNATURE
SAFE	ETY TOPICS PRESENTED
Protective Cloting/Equipment: Level-1), when sampling
Chemical Hazards: Acids in Sample	containers, safety glasses and latex gloves when sampling
Radiological Hazards: None	
Physical Hazards: Elements, slip, tri	p, falls, possible biological
Emergency Procedures: <u>Aide, Call, Tra</u>	nsport
Hospital/Clinic: Sandia Medical	Phone: ()844-0911/911 Paramedic Phone: ()911
Hospital Address: 7th & F street	·
Special Equipment: Sampling pumps	
Other:	
<u> </u>	
1	ATTENDEES
NAME PRINTED: // AFRICA	ANTILLACESIGNATURE: Holst
NAME PRINTED:	SIGNATURE:
NAME PRINTED: William	616500 SIGNATURE: William J. Fr
NAME PRINTED:	SIGNATURE:

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Project Name CWL-GWM	Project No.: 98026.01.04.01
Decon. Location: 9425	Date: 10-03-06
The portable pump and tubing bundle (S/N pum) in well BW 4A, according to the following proc. 1. 5 gallons tap water ^(a) + Liquinox wash. 2. 5 gallons tap-water ^(a) rinse. 3. 5 gallons tap water ^(a) + 50 mL HNO ₃ ^(b) (0.4.10 gallons deionized-water ^(c) rinse. 5. 5 gallons deionized water ^(c) for sampling. 6. Equipment blank sample #w	edure: 04M).
Weather:	
Personnel Performing Decontamination:	Lynch.
~	
Name of Sampler: R. Luyech	<u> </u>
Signature of Sampler: Unc	Date:
a Tap-Water Source: DI water, Crass	stal Springs.
^b HNO ₃ Grade: Reagent	UN #: 2037
Lot No.: 002735	Manufacturer: Fisher
OI Water Source: Crustal Springs	5 Lot No. 9- 20-06
Condition of Tubing Bundle:	
Condition of Pump:	
Comments:	
Atter lar	- Muzz C
	•

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Project Name CWL-GWM	Project No.: 98026.01.04.01
Decon. Location: 9425	Date: 10-05-06
The portable pump and tubing bundle (S/N pump in well BW3, according to the following process of the second	edure: 04M).
Weather:	
	gnal
Name of Sampler:	Date:
a Tap-Water Source: DI water, Crus	ital Springs.
^b HNO ₃ Grade: Reagent	UN#: 2037
Lot No.: 002735	Manufacturer: Fisher
CDI Water Source: Crustal Epoplas	Lot No. 9- 20-06
Condition of Tubing Bundle:	
Condition of Pump:	
Comments:	
Atter ('we-Bu4A

Page 1 ol 1	

Decon. Location: 9925 Date: 10-9-06 The portable pump and tubing bundle (S/N Pump)) were decontaminated prior to installation in well Cut. 611, according to the following procedure: 1. 5 gallons tap water ^(a) + Liquinox wash. 2. 5 gallons tap water ^(a) rinse. 3. 5 gallons tap water ^(a) + 50 mL HNO ₃ (b) (0.04M). 4. 10 gallons deionized-water ^(c) rinse. 5. 5 gallons deionized water ^(c) for sampling. 6. Equipment blank sample # was collected at (time). Weather: Personnel Performing Decontamination: Name of Sampler:	Project Name CWL-GWM	Project No.: 98026.01.04.0\
in well Cut. GW according to the following procedure: 1. 5 gallons tap water ^(a) + Liquinox wash. 2. 5 gallons tap-water ^(a) + 50 mL HNO ₃ (b) (0.04M). 4. 10 gallons deionized-water ^(c) rinse. 5. 5 gallons deionized water ^(c) rior sampling. 6. Equipment blank sample # was collected at		
Personnel Performing Decontamination: Name of Sampler: Signature of Sampler: Tap-Water Source: Name of Sampler: Date: Tap-Water Source: Name of Sampler: Name of Sampl	in well <u>Cul- 6U</u> , according to the following product 1. 5 gallons tap water ^(a) + Liquinox wash. 2. 5 gallons tap-water ^(a) rinse. 3. 5 gallons tap water ^(a) + 50 mL HNO ₃ ^(b) (0) 4. 10 gallons deionized-water ^(c) rinse. 5. 5 gallons deionized water ^(c) for sampling.	.04M).
Name of Sampler: Plunch Signature of Sampler: Plunch a Tap-Water Source: DI water, Crastal Springs b HNO3 Grade: Reagent Lot No.: 002735 Manufacturer: Fisher c DI Water Source: Crustal Springs Lot No 9-20-06 Condition of Tubing Bundle: Good Condition of Pump:	Weather:	·
Signature of Sampler: Sync Date: a Tap-Water Source: DT water, Crustal Springs b HNO3 Grade: Reagent UN #: 2031 Lot No.: 002735 Manufacturer: Fisher c DI Water Source: Crustal Springs Lot No. 9-20-06 Condition of Tubing Bundle: 40000 Condition of Pump: 40000	L-,	lynch
a Tap-Water Source: DI water, Crastal Springs b HNO3 Grade: Reagent Lot No.: 002735 Manufacturer: Fisher c DI Water Source: Crustal Springs Lot No. 9-20-06 Condition of Tubing Bundle: Good Condition of Pump:		· · · · · · · · · · · · · · · · · · ·
b HNO3 Grade: Reagent Lot No.: 002735 Manufacturer: Fisher DI Water Source: Crustal Springs Lot No. 9-20-06 Condition of Tubing Bundle: Good Condition of Pump:	U O O O O O O	
Lot No.: 002735 Manufacturer: Fisher DI Water Source: Crustal Springs Lot No. 9-20-06 Condition of Tubing Bundle: Good Condition of Pump: Good		
Condition of Pump: Condit	^b HNO ₃ Grade: Reagent U	
Condition of Tubing Bundle: Condition of Pump:		
Condition of Pump:	o DI Water Source: Crustal Spring.	5 Lot No. 9- 20-06
	Condition of Tubing Bundle:	
Comments:	Condition of Pump:	
	Comments:	
Athromb-Bw3		

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Project Name CWL-GWW	Project No.: 98026.01.04.01
Decon. Location: 9425	Date: /0 - // - 06
The portable pump and tubing bundle (S/N pump in well	edure: .04M).
Weather:	
	ynd.
Name of Sampler: K. Lunch	
Signature of Sampler:	Date:
a Tap-Water Source: DI water, Cras	stal Springs.
^b HNO ₃ Grade: Reagent	UN #: 2037
Lot No.: 002735	Manufacturer: Fisher
C DI Water Source: Crustal Spring.	5 Lot No. 9- 20-06
Condition of Tubing Bundle:	
Condition of Pump:	
Comments:	
	•
After car	rmu 6U

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Project Name CWL-GWM	Project No.: 98026 .01.04.01
Decon. Location: 9425	Date: 10-13-06
The portable pump and tubing bundle (S/Npum) in well, according to the following process of the second stap water and the pollowing process of the second stap water and	edure: 04M).
Weather:	
Personnel Performing Decontamination: 24y	nch
Name of Sampler: R. Lunch	
Signature of Sampler:	Date: 10-13-06
a Tap-Water Source: DI water, Crus	stal Springs.
^b HNO ₃ Grade: Reagent	UN #: 2037
Lot No.: 002735	Manufacturer: Fisher
o DI Water Source: Crustal Epoing:	5 Lot No. 9- 20-06
Condition of Tubing Bundle:	
Condition of Pump:	
Comments:	
After co	-c-mus
	·
	·

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Project Name CWL-GWM	Project No.: 98026-01-04-01
Decon. Location: 9425	101104
The portable pump and tubing bundle (S/N pump) in well, according to the following product of the following produc	.04M).
Weather:	
Personnel Performing Decontamination:	
Name of Sampler: R. Lunch	
Signature of Sampler: VSInc	Date:
a Tap-Water Source: DI water, Crus	stal Springs.
^b HNO ₃ Grade: Reagent 'U	UN #: 2037
Lot No.: 002735	Manufacturer: Fisher
CDI Water Source: Crustal Sorna	S Lot No. 9- 20-06
Condition of Tubing Bundle:	
Condition of Pump:	
Comments:	
After CWL-N	nm~/
A	
	·

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: William Gibson Phone: 284-5232 Task Leader: Paul Freshour							
Signature: William J. To the best of my knowledge this information is correct & accurate.							
Container I.D. #	CWL-MW2B	U -100206	CWL-100206		CWL-QED-101806		
(site-date-sequence)	NIA		NA		NA		
Container Certification # (i.e.SNL/NM#####)	NA		INA.		NA		
Project Name	CWL-GWM		CWL-GWM		CWL-GWM		
Site Number	NA		NA		NA		
Waste Mgt. Case #	98026.01.04.01	1	98026.01.04.0	i	98026.01.04.0	1	
Initial Label Type	Haz-Waste		Haz-Waste		Haz-Waste		
Waste Matrix	Purge water		PPE		Purge water		
(i.e. Water, Cuttings, Soil, Samples,							
Metal, etc.)	-		- · · · · · · · · · · · · · · · · · ·	T .	GUPP	1	
Container Type / Vol	Bucket	5gal.	Bucket	5gal.	CHPD	55gal.	
(always use Certified containers) Volume of Waste	.8 gals			<u> </u>	10 gals		
Total Container Weight	5 lbs.		8 lbs.		100 lbs.		
	COC# 610839		COC#				
Waste Char. Samples	SMO# 083050		SMO#		COC# 610842, 610843 SMO# 083056, 083058,		
(COC#: Sample#-Fraction)	S141O# 005050	3030 SMO#		083059			
SMO Hazardous []							
SMO Radioactive []	NA		NA		NA .		
ERCL Haz [] Rad []	NA NA		NA NA		NA		
RPSD Rad[]	NA		NA		NA		
(Amir's on-site Rad Lab)							
Container Exterior	Survey: NA		Survey: NA		Survey: NA		
RAD SURVEY #	Swipes:		Swipes:		Swipes:		
Container Contents RAD SURVEY #	Survey: NA		Survey: NA Swipes:		Survey: NA Swipes:		
Accumulation Date	Swipes: Start 10/02/06		Start 10/02/06		Start 10/18/06		
Accumulation Date	Full 10/20/06		Full 10/20/06	,	Full 10/19/06	,	
Date Moved to Waste	10/20/06		1411 10/20/00		1 411 10/15/00		
Accumulation Area			10/20/06		10/19/06		
Accumulation Area Name	9925		9925		9925	***	
ERwm Memo #							
Comments	QED pump		Contains glov used through well monitorin	out the CWL	Contains CW CWL-MW6L CoC 610842,		

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willi	am Gibson - F	Phone: <u>284-</u>	<u>5232</u> Task Lo	eader: Paul F	reshour		
Signature: William	19.61	To the b	est of my knowle	edge this inform	ation is correct &	& accurate.	
Container I.D. # (site-date-sequence)	CWL-MW2B	L-100306-01	CWL-MW2F	BL-100306-02	CWL-MW2B	L-100306-03	
Container Certification # (i.e.SNL/NM######)	NA		NA		NA		
Project Name	CWL-GWM		CWL-GWM		CWL-GWM		
Site Number	NA		NA		NA		
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04.0	01	98026.01.04.0)1	
Initial Label Type	Haz-Waste		Haz-Waste		Haz-Waste		
Waste Matrix (i.e. Water, Cuttings, Soil, Samples, Metal, etc.)	Purge water		Purge water		Purge water		
Container Type / Vol (always use Certified containers)	СНРО	55gal.	СНРО	55gal.	СНРО	55gal.	
Volume of Waste	50 gals		50 gals		50 gals		
Total Container Weight	500lbs.		500lbs.		5000lbs.		
Waste Char. Samples	COC# 610833		COC# 610833	COC# 610833		COC# 610833	
(COC#: Sample#-Fraction)	SMO# 083035		SMO# 08303	5 .	SMO# 083035		
SMO Hazardous []							
SMO Radioactive []	NA		NA		NA		
ERCL Haz [] Rad []	NA		NA	NA		NA	
RPSD Rad[]	NA		NA	NA		NA	
(Amir's on-site Rad Lab)							
Container Exterior RAD SURVEY #	Survey: NA Swipes:		Survey: NA Swipes:		Survey: NA Swipes:		
Container Contents	Survey: NA		Survey: NA		Survey: NA		
RAD SURVEY #	Swipes:		Swipes:		Swipes:		
Accumulation Date	Start 10/03/06 Full 10/03/06		Start 10/03/06 Full 10/03/06	5	Start 10/03/06 Full 10/03/06		
Date Moved to Waste	10/03/06		2 22 25.00.00		10/03/06		
Accumulation Area			10/03/06				
Accumulation Area Name	9925		9925		9925		
ERwm Memo #							
Comments							

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willia	am Gibson I	Phone: 284-5	5232 Task L	_eader: <u>Paul F</u>	<u>`reshour</u>		
Signature: Williem	Jack)	To the be	est of my know	vledge this inform	ation is correc	t & accurate.	
Container I.D. #	CWL-MW2B	L-100306-04	CWL-MW2	2BL-100306-05	CWL-MW	2BL-100306-06	
(site-date-sequence)							
Container Certification #	NA		NA		NA		
(i.e.SNL/NM######)							
Project Name	CWL-GWM		CWL-GWM		CWL-GWM		
Site Number	NA		NA		NA NA		
Waste Mgt. Case #	98026.01.04.0	<u> 1 </u>	98026.01.04		98026.01.04		
Initial Label Type	Haz-Waste		Haz-Waste		Haz-Waste		
Waste Matrix	Purge water		Purge water	r	Purge wate	r	
(i.e. Water, Cuttings, Soil, Samples, Metal, etc.)							
Container Type / Vol	CHPD	55gal.	CHPD	55gal.	CHPD	55gal.	
(always use Certified containers)	CILID	Jogai.	CIII D	Jugai.	CILID	Jugai.	
Volume of Waste	50 gals		50 gals		50 gals	·	
Total Container Weight	500lbs.		500lbs.		5000lbs.	CHANGE AND A	
Waste Char. Samples	COC# 610833	<u> </u>	COC# 6108	COC# 610833		COC# 610833	
(COC#: Sample#-Fraction)	SMO# 083035		SMO# 083035		SMO# 083035		
SMO Hazardous []							
					ļ		
	NA		NA		NA		
SMO Radioactive []							
	1-2				. - ;;;		
	NA		NA		NA		
ERCL Haz [] Rad []							
	<u> </u>		1				
RPSD Rad []	NA		NA		NA		
(Amir's on-site Rad Lab)					·		
	-		+				
Container Exterior	Survey: NA		Survey: NA	•	Survey: NA		
RAD SURVEY #	Swipes:		Swipes:		Swipes:		
Container Contents RAD SURVEY #	Survey: NA Swipes:		Survey: NA Swipes:		Survey: NA		
Accumulation Date	Start 10/03/06		Start 10/03/		Swipes: Start 10/03/		
Accumulation Date	Full 10/03/06		Full 10/03/0		Full 10/03/0		
Date Moved to Waste	10/03/06	·	Tun 10/05/0	•	10/03/06	70	
Accumulation Area	10/05/00		10/03/06		10/05/00		
Accumulation Area Name	9925		9925		9925		
ERwm Memo #	7720	<u> </u>	1 2 2 2		17720		
Comments				· · · · · · · · · · · · · · · · · · ·			
Comments							
·	·						

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willia	am Gibson P	Phone: 284-5	232 Task Le	ader: Paul F	<u>reshour</u>		
Signature: WMia	n John J	To the be	st of my knowle	dge this informa	ation is correct &	k accurate.	
Container I.D. # (site-date-sequence)	CWL-MW2B	L-100306-07	CWL-MW2B	L-100306-08	CWL-MW2B	CWL-MW2BL-100306-09	
Container Certification # (i.e.SNL/NM#####)	NA		NA		NA		
Project Name	CWL-GWM		CWL-GWM		CWL-GWM		
Site Number	NA		NA		NA		
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04.0)1	98026.01.04.0	1	
Initial Label Type	Haz-Waste		Haz-Waste		Haz-Waste		
Waste Matrix	Purge water		Purge water		Purge water		
(i.e. Water, Cuttings, Soil, Samples, Metal, etc.)							
Container Type / Vol	CHPD	55gal.	CHPD	55gal.	CHPD	55gal.	
(always use Certified containers)	CITIE	Jogan.		Jogan.	CITIE	Jogan.	
Volume of Waste	50 gals		50 gals		50 gals	.1	
Total Container Weight	500lbs.	- 144	500lbs.		5000lbs.		
Waste Char. Samples	COC# 610833		COC# 610833		COC# 610833		
(COC#: Sample#-Fraction)	SMO# 083035		SMO# 083035		SMO# 083035		
(COC#. Sample#-Fraction)			İ				
SMO Hazardous []							
SMO Radioactive []	NA	•••••	NA		NA		
ERCL Haz [] Rad []	NA		NA		NA		
RPSD Rad []	NA		NA		NA		
(Amir's on-site Rad Lab)							
Container Exterior	Survey: NA		Survey: NA		Survey: NA		
RAD SURVEY #	Swipes:		Swipes:		Swipes:		
Container Contents	Survey: NA		Survey: NA		Survey: NA		
RAD SURVEY #	Swipes:		Swipes:		Swipes:		
Accumulation Date	Start 10/03/06		Start 10/03/06		Start 10/03/06		
	Full 10/03/06		Full 10/03/06		Full 10/03/06		
Date Moved to Waste	10/03/06		10/02/06		10/03/06		
Accumulation Area	0025		10/03/06		0025		
Accumulation Area Name	9925		9925		9925		
ERwm Memo #							
Comments							

 $(OHSD) = open \text{ head steel drum; } (CHSD) = closed head steel drum; } (CHPD) = closed head poly drum; } (OHPD) = open head poly bucket; } (RL-Off) = roll off; } (WGLR) = wrangler bag; } (744) = 7'x4'x4' steel box; } (BB) = Burrito bag.$

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willi	am Gibson 1	Phone: 284-	5232 Task I	Leader: Paul F	reshour			
Signature: Willie	in J Sill	To the b	est of my know	vledge this informa	ation is correct	& accurate.		
Container I.D. #	CWL-MW2B	L-100306-10	CWL-10030	06				
(site-date-sequence)								
Container Certification #	NA		NA					
(i.e.SNL/NM#####)								
Project Name	CWL-GWM		CWL-GWM					
Site Number	NA		NA					
Waste Mgt. Case #	98026.01.04.0)1	98026.01.04	4.01				
Initial Label Type	Haz-Waste		Haz-Waste					
Waste Matrix	Purge water		Decon wate	er		•		
(i.e. Water, Cuttings, Soil,								
Samples, Metal, etc.)	ļ							
Container Type / Vol	CHPD	55gal.	CHPD	55gal.				
(always use Certified containers)					ļ			
Volume of Waste	39 gals		35 gals					
Total Container Weight	390lbs.		350lbs.					
Waste Char. Samples (COC#: Sample#-Fraction)	COC# 610833 SMO# 083035			COC# 610833 SMO# 083035				
SMO Hazardous []								
SMO Radioactive []	NA		NA					
ERCL Haz [] Rad []	NA		NA					
RPSD Rad []	NA	· · · · · · · · · · · · · · · · · · ·	NA					
(Amir's on-site Rad Lab)								
Container Exterior	Survey: NA		Survey: NA					
RAD SURVEY #	Swipes:		Swipes:					
Container Contents	Survey: NA		Survey: NA		 			
RAD SURVEY #	Swipes:		Swipes:					
Accumulation Date	Start 10/03/00	<u> </u>	Start 10/03/	'06	· · · · · · · · · · · · · · · · · · ·			
	Full 10/03/06		Full 10/03/0	06				
Date Moved to Waste	10/03/06							
Accumulation Area	i		10/03/06					
Accumulation Area Name	9925		9925					
ERwm Memo #								
Comments			Decon water	r after CWL-				
			1	rrge, CoC 610833				

⁽OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = <math>7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willi	am Gibson I	Phone: <u>28</u> -	1-5232 Task L	eader: Paul F	reshour	
Signature: Willia	JANJ	To the	best of my know	ledge this informa	tion is correct	& accurate.
Container I.D. # (site-date-sequence)	CWL-BW4A-	100406	CWL-10050	6		757755
Container Certification # (i.e.SNL/NM######)	NA		NA		·	
Project Name	CWL-GWM		CWL-GWM			
Site Number	NA		NA			
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04.	.01		
Initial Label Type	Haz-Waste		Haz-Waste			
Waste Matrix	Purge water		Decon water			
(i.e. Water, Cuttings, Soil, Samples, Metal, etc.)						
Container Type / Vol (always use Certified containers)	CHPD	55gal.	CHPD	55gal.		
Volume of Waste	16 gals	Ė	35 gals			
Total Container Weight	160lbs.		350lbs.			
Waste Char. Samples	1	COC# 610834 SMO# 083037,083038		COC# 610834 SMO# 083037,083038		
(COC#: Sample#-Fraction)	SN10# 083037	,003030	SN10# 08303	7,003038		
SMO Hazardous []						
SMO Radioactive []	NA	NA				
ERCL Haz [] Rad []	NA		NA	NA		
RPSD Rad []	NA		NA	NA		
(Amir's on-site Rad Lab)						
Container Exterior	Survey: NA		Survey: NA			
RAD SURVEY #	Swipes:	<u> </u>	Swipes:			
Container Contents	Survey: NA		Survey: NA			
RAD SURVEY # Accumulation Date	Swipes: Start 10/04/06		Swipes: Start 10/05/0	6		
Accumulation Date	Full 10/05/06		Full 10/05/06	E .		
Date Moved to Waste	10/05/06		1 un 10/05/00			
Accumulation Area	10, 55, 55		10/05/06			
Accumulation Area Name	9925		9925		***	
ERwm Memo #						
Comments			Decon water BW4A purge			

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLE) = wrangler bag; (744) = <math>7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willia	am Gibson P	hone: 284-	5232 Task Le	ader: <u>Paul F</u>	<u>reshour</u>				
Signature: William J. To the best of my knowledge this information is correct & accurate.									
Container I.D. #	CWL-BW3-10	00\$06	CWL-100906						
(site-date-sequence)		06							
Container Certification #	NA		NA						
(i.e.SNL/NM#####)									
Project Name	CWL-GWM		CWL-GWM						
Site Number	NA		NA						
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04.0	1					
Initial Label Type	Haz-Waste		Haz-Waste						
Waste Matrix	Purge water		Decon water						
(i.e. Water, Cuttings, Soil,					-				
Samples, Metal, etc.)									
Container Type / Vol	CHPD	55gal.	CHPD	55gal.		,			
(always use Certified containers)									
		ł							
Volume of Waste	16 gals		35 gals						
Total Container Weight	160lbs.		350lbs.						
Waste Char. Samples	COC# 610835		COC# 610835						
(COC#: Sample#-Fraction)	SMO# 083040		SMO# 083040	1	•				
(COC#. Sampler-Praction)									
SMO Hazardous []									
	NA		NA		-				
SMO Badia adia a fil	1		1						
SMO Radioactive []									
	NA		NA						
EDGLIL [1D-4]	INA.		I IVA						
ERCL Haz [] Rad []									
					· 				
RPSD Rad []	NA		NA						
(Amir's on-site Rad Lab)									
	0 274		CNA						
Container Exterior	Survey: NA		Survey: NA Swipes:						
RAD SURVEY # Container Contents	Swipes:		Survey: NA						
RAD SURVEY #	Survey: NA Swipes:		Swipes:						
Accumulation Date	Start 10/06/06		Start 10/09/06						
Accumulation Date	Full 10/09/06		Full 10/09/06						
Date Moved to Waste	10/09/06		1			,			
Accumulation Area	10/07/00		10/09/06						
Accumulation Area Name	9925		9925						
					20.1.1.0.00				
ERwm Memo # Comments			Decon water a	ofter CWL-					
Comments			BW3 purge, C						
			parge, c						
			,						

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: William Gibson Phone: 284-5232 Task Leader: Paul Freshour									
Signature: William Jach To the best of my knowledge this information is correct & accurate.									
Container I.D. # (site-date-sequence)	CWL-MW6U-	-101006	CWL-10110	06					
Container Certification # (i.e.SNL/NM######)	NA		NA						
Project Name	CWL-GWM		CWL-GWM						
Site Number	NA	****	NA						
Waste Mgt. Case #	98026.01.04.0	l	98026.01.04	.01					
Initial Label Type	Haz-Waste		Haz-Waste						
Waste Matrix	Purge water		Decon water	r					
(i.e. Water, Cuttings, Soil,									
Samples, Metal, etc.)	CIADD	55001	CHED	55 col					
Container Type / Vol (always use Certified containers)	CHPD	55gal.	CHPD	55gal.					
(always use Certified containers)									
Volume of Waste	22 gals		35 gals		,				
Total Container Weight	220lbs.		350lbs.						
Waste Char. Samples	COC# 610836		COC# 61083	36					
(COC#: Sample#-Fraction)	SMO# 083042		SMO# 08304	42					
SMO Hazardous []									
	NA		NA NA						
97.50	INA		INA						
SMO Radioactive []					-				
ERCL Haz [] Rad []	NA		NA						
DDCD D LL1	NA		NA						
RPSD Rad []									
(Amir's on-site Rad Lab)									
Container Exterior	Survey: NA		Survey: NA						
RAD SURVEY #	Swipes:		Swipes:						
Container Contents	Survey: NA		Survey: NA						
RAD SURVEY #	Swipes:		Swipes:						
Accumulation Date	Start 10/10/06		Start 10/11/0						
	Full 10/11/06		Full 10/11/0	6					
Date Moved to Waste	10/11/06		10/11/05						
Accumulation Area	0025		10/11/06						
Accumulation Area Name	9925		9925						
ERwm Memo #				0. 07777					
Comments		•	1	after CWL-ge, CoC 610836					
			Mi woo purg	,0, 000 010050					

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly drum;

(OHPB) = Open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrico bag.

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Craig Wood MS-1087 Fax 284-2616

Form Generator: Willia	am Gibson P	Phone: <u>284-</u>	5232 Task L	eader: Paul F	reshour			
Signature: Willia	u JAh	To the b	est of my know	ledge this informa	ation is correct &	& accurate.		
Container I.D. #	CWL-MW5U	-101206	CWL-10130	CWL-101306				
(site-date-sequence)								
Container Certification #	NA		NA .					
(i.e.SNL/NM#####)								
Project Name	CWL-GWM		CWL-GWM					
Site Number	NA		NA					
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04	.01				
Initial Label Type	Haz-Waste		Haz-Waste					
Waste Matrix	Purge water		Decon water	r				
(i.e. Water, Cuttings, Soil,								
Samples, Metal, etc.)	CHIPP	T = = 1	CHIPD	55. 1		Т		
Container Type / Vol	CHPD	55gal.	CHPD	55gal.				
(always use Certified containers)								
Volume of Waste	22 gals		35 gals					
Total Container Weight	220lbs.		350lbs.					
Waste Char. Samples	COC# 610838		COC# 61083	COC# 610838				
(COC#: Sample#-Fraction)	SMO# 083046	, 083047	SMO# 08304	SMO# 083046, 083047				
(Colon Samples Flathers,						•		
SMO Hazardous []								
		•	NTA					
	NA		NA			,		
SMO Radioactive []								
					-			
	NA		NA					
ERCL Haz [] Rad []								
RPSD Rad []	NA		NA					
l								
(Amir's on-site Rad Lab)					-			
Container Exterior	Survey: NA		Survey: NA					
RAD SURVEY #	Swipes:		Swipes:					
Container Contents	Survey: NA		Survey: NA					
RAD SURVEY #	Swipes:		Swipes:					
Accumulation Date	Start 10/12/06		Start 10/13/					
	Full 10/13/06		Full 10/13/0	6				
Date Moved to Waste	10/13/06		10/12/06					
Accumulation Area	0005		10/13/06					
Accumulation Area Name	9925		9925					
ERwni Memo #								
Comments			I	after CWL-				
			MW5U purg	ge, CoC 610838				

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

IL WIN, LOLING, MYCHILOY

ER WASTE GENERATION LOG

(Version: 5/2/01) Return completed form with a copy of the Chain of Custody to Ernest Vinsant. MS-1087 Fax 284-2616

Form Generator: Robo	ert Lynch Pl	none:_844-40	13_ Task Lo	eader: Pual F	reshour	
Signature:	1110	To the be	est of my knowle	edge this informa	ation is correct &	accurate.
Container I.D. # (site-date-sequence)	CWL-MW4-1	01706	CWL-101706			
Container Certification #						
(i.e.SNL/NM#####)						
Project Name	CWL-GWM	/A-1/10	CWL-GWM			
Site Number	CVEGVA					1.44
Waste Mgt. Case #	98026.01.04.0	1	98026.01.04.	Ū1		
Initial Label Type	HAZ		HAZ			
Waste Matrix	Purge Water		Decon Water			
(i.e. Water, Cuttings, Soil, Samples,						
Metal, etc.)						
Container Type / Vol	CHPD	55gal.	CHPD	55gal.		
(always use Certified containers)						
Volume of Waste	42		35			
Total Container Weight	410		350			
Waste Char. Samples	COC# 610841	1	COC#.6108	41		
(COC#: Sample#-Fraction)			1			
,	SMO# 080353		SMO# 08035	3		
SMO Hazardous []						
SMO Radioactive []	,					
ERCL Haz [] Rad []					-	
DDCD Dod []						
RPSD Rad []						
(Amir's on-site Rad Lab)						
Container Exterior	Survey: NA		Survey: NA		Survey: NA	
RAD SURVEY #	Swipes:		Swipes:		Swipes:	
Container Contents	Survey:		Survey:		Survey:	
RAD SURVEY #	Swipes: NA		Swipes: NA		Swipes: NA	
Accumulation Date	Start: 10/17/06 Full 10/17/06	6	Start 10/17/06 Full 10/17/06		Start Full	
Date Moved to Waste						
Accumulation Area	10/17/06		10/17/06			
Accumulation Area Name	9925		9925			
ERwm Memo #		AL MANUFACTURE .				
Comments			Decon after C	CWL-MW4		1000

(OHSD) = open head steel drum; (CHSD) = closed head steel drum; (CHPD) = closed head poly drum; (OHPD) = open head poly bucket; (RL-Off) = roll off; (WGLR) = wrangler bag; (744) = 7'x4'x4' steel box; (BB) = Burrito bag.

ATTACHMENT B ANALYSIS REQUEST/CHAIN-OF-CUSTODY FORMS

Internal Lab	A		ANALYSIS REQUEST AND CHAIN OF CUSTODY									Page 1 of 1				
Batch No.	4				SMO Ușe							AR/COC	610835			
Dept. No./Mail Stop:	6791/1087	D	Date Samples Shipped: C C C Project/Task No. 98026_01.07 _									Waste Characterization				
Project/Task Manager:	Paul Freshour	C	Carrier/Way	bill No.	r t		SMO A	uthorizatio	n: <u>(</u> 4/2)	11- 6	21/10	-Send preliminary/copy report to:				
Project Name:	CWL GWM	L	ab Contact	:	Edie Kent/803-556-81											
Record Center Code:	ER/1267 074/DAT	L	ab Destina	ticn:	GEL							Released by COC No.:				
Logbook Ref. No.:	ER 049	s	MO Contact	Phone:	Pam Puissant/505-84	4-3185	> E-13	BEU	LE ERD	C. R.		☑ Validation Required				
Service Order No.	CF 025-07	s	Send Report t	o SMO:	Lorraine Herrera/505-	844-3199	j					Bill To:Sandia National Labs (Accounts Payable)				
Location	Tech Area											P.O. Box 5800 MS 0154				
Building	Room				Referen	ce LOV	(availa	able at S	SMO)			Albuquerque, NM 87185-0154				
	ER Sample ID or		Pump	ER Site	Date/Time(hr)	Sample		ntainer	Preserv-	Collection	Sample	Parameter & Mo	ethod	Lab Sample		
Sample NoFraction	Sample Location Del	tail I	Depth (ft)	No.	Collected	Matrix	Type	Volume	ative	Method	Туре	Requested	I	ID		
083040-001	CWL-BW3		506	NH	100906/0821	GW	· G	3x40ml	HCL	G	SA	VOC (8260)				
083040-009	CWL-BW3		506		100906/0823	GW	Р	500ml	HNO3	G	SA	Total Metals+Fe (SW846	6-6020/7470)			
083041-001	CWL-TB3		NA	47	100906/0821	DIW	G	3x40ml	HCL	G	ТВ	VOC (8260)				
	,															
RMMA	☐Yes ☑No	Ref. N	۷o.		Sample Tracking		Smo U	se	Special Instru	ctions/QC	Requirem	ents	Abnormal			
Sample Disposal	Return to Client		posal by la	b	Date Entered(mm/dd	/vv)				Yes 🗌			Conditions of	n		
Turnaround Tim		15 Day			Entered by:	777			Level D Packa							
Return Samples By:				Negotia		QC inits.			*Send report t				1			
1	Name	Sign	nature	Init	Company/Organ			ellular	Tim Jackson/6		AS 1087/50	5-284-2547				
Sample	Robert Lynch	14	116	12/	Weston/6791/844-40			-	THE CONSTRU	J. S. J.	100//00			Lab Use		
Team		7.7	n Bat 1	7.19	Weston/6791/284-52				•					200 000		
Members	Carolyn Daniels	0			Sandia/6791/284-998		307									
Members	Cardiyii Daniel	3	751	<u>دارات</u>	Sandia/0791/204-990				Ann IV concert	na for CA	fenations (204 \$ 000				
									App.IX reporti	-		JU 1 & UU3.				
1 Dalian vieland by	- C			D-4-	10 / 1 Time 0 (1,00	A Delie		*Please list as	separate		Dete	T:			
1.Relinquished by	TE TO		Org. <u>(*</u> 74 ₁ 1 Org (* 741		0 9 /06 Time 0 9			quished by	у		Org.	Date Date	Time			
Received by Relinquished by	14 (c/m 1)		Org <i>to 491</i> Org.	Date 10	Time	(""		eived by			Org.					
Received by								quished by	у		Org.	Date	Time			
			Org.	Date	Time			eived by			Org.	Date	Time			
3.Relinquished by			Org.	Date	Time			quished b	у		Org.	Date	Time			
3. Received by			Org.	Date	Time		o. Rece	eived by			Org.	Date	Time	2		

ANALYSIS REQUEST AND CHAIN OF CUSTODY Page 1 of 1 Internal Lab 610834 AR/COC Batch No. Date Samples Shipped: 70 - 5 - 6/a Project/Task No. 98026 .01.07 Waste Characterization Dept. No./Mail Stop: 6791/1087 -Send preliminary/copy report to: Project/Task Manager: Paul Freshour Carrier/Waybill No. Project Name: CWL GWM Lab Contact: Edie Kent/803-556-8171 Contract #: PO 21671 Released by COC No.: ER/1267 074/DAT GEL Record Center Code: Lab Destination: SET BETTE EROON ✓ Validation Required Logbook Ref. No.: ER 049 Pam Puissant/505-844-3185 SMO Contact/Phone: Service Order No. CF 025-07 Lorraine Herrera/505-844-3199 Bill To:Sandia National Labs (Accounts Payable) Send Report to SMO: Location P.O. Box 5800 MS 0154 Tech Area Reference LOV(available at SMO) Albuquerque, NM 87185-0154 Building Room ER Sample ID or Preserv-Collection Sample Parameter & Method Lab Sample ER Site Sample Container Pump Date/Time(hr) ID Sample No.-Fraction Sample Location Detail Depth (ft) No. Collected Matrix Туре Volume ative Method Type Requested NIVE G VOC (8260) G 3x40ml HCL SA 083037-001 CWL-BW4A 507 100506/0843 GW Total Metals+Fe (SW846-6020/7470) Р 083037-009 CWL-BW4A 507 100506/0845 GW 500ml HNO3 G SA G VOC (8260) 083038-001 CWL-FB1 507 100506/0843 DIW G 3x40ml HCL FΒ G 3x40ml HCL G ŢΒ VOC (8260) 083039-001 CWL-TB2 NA 100506/0843 DIW RMMA Yes Abnormal √No. Ref. No. Special Instructions/QC Requirements Sample Tracking Smo Use Yes No Conditions on Sample Disposal Return to Client ☑ Disposal by lab Date Entered(mm/dd/yy) ☐ No Receipt Yes Turnaround Time 7 Day √ 15 Dav 30 Day Entered by: Level D Package *Send report to: Return Samples By: **Negotiated TAT** QC inits. Tim Jackson/Org 6791/MS 1087/505-284-2547 Name Signature Company/Organization/Phone/Cellular Lab Use CT Weston/6791/844-5130/228-0710 Sample Alfred Santillanes Team Weston/6791/844-4013/250-7090 Robert Lynch Nexton/6791/284-5232/239-7367 Members William J Gibson App.IX reporting for SA fractions,001 & 009. *Please list as separate report. Time 1.Relinguished by Date W 5706 Time @41 4.Relinguished by Org. Date Received by Date 1/21 500 Time 09 Org. Date Time 4. Received by 2.Relinguished by Date Time 5.Relinguished by Org. Date Time 2. Received by Time 5. Received by Org. Date Time Org. Date Time 3.Relinguished by Org. Date Time 6.Relinquished by Org. Date

6. Received by

Org.

Date

Time

Date

Time

Received by

ANALYSIS REQUEST AND CHAIN OF CUSTODY Page 1 of 1 Internal Lab 610833 AR/COC Batch No. SMO Use Project/Task No. 98026 .01.07 Dept. No./Mail Stop: 6791/1087 Date Samples Shipped: Waste Characterization fin 5215 SMO Authorization: Paul Freshour Carrier/Waybill No. -Send preliminary/copy report to: Project/Task Manager: Contract #: PO 21671 Project Name: CWL GWM Lab Contact: Edie Kent/803-556-8171 ER/1267 074/DAT GEL Released by COC No.: Record Center Code: ab Destination: ☑ Validation Required ER 049 Pam Puissant/505-844-3185 Loabook Ref. No.: SMO Contact/Phone: Bill To:Sandia National Labs (Accounts Payable) CF 025-07 Send Report to SMO: Lorraine Herrera/505-844-3199 Service Order No. Location P.O. Box 5800 MS 0154 Tech Area Reference LOV(available at SMO) Room Buildina Albuquerque, NM 87185-0154 ER Site Collection Sample ER Sample ID or Date/Time(hr) Sample Container Preserv-Pump Parameter & Method Lab Sample Collected Matrix Volume Method Sample Location Detail Depth (ft) No. Type ative Type Requested ID Sample No.-Fraction G 550 10/03/06 1308 GW G 5x40ml HCL SA VOC (8260) 083035-001 CWL-MW2BL 550 10/03/06 1309 GW Ρ 2x500ml HNO3 G SA Total Metals+Fe (SW846-6020/7470) 083035-009 CWL-MW2BL G 083036-001 CWL-TB1 NA 10/03/06 1308 DIW G 3x40ml HCL TB VOC (8260) RMMA Yes []No Ref. No. Special Instructions/QC Requirements Sample Tracking Smo Use Abnormal ✓ Yes No Date Entered(mm/dd/yy) Return to Client Disposal by lab EDD Conditions on Sample Disposal Yes ☐ No **Turnaround Time** 7 Day √
15 Day 30 Day Entered by: Level D Package Receipt Negotiated TAT QC inits. *Send report to: Return Samples By: Signature Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Init Name Hilled Steller at Weston/6791/844-5130/228-0710 Alfred Santillanes Sample Lab Use Weston/6791/844-4013/250-7090 Team Robert Lynch Lab QA/QC for SA fractions 001 & 009 Weston/6791/284-5232/239-7367 Members William J Gibson 1. Whan IT App.IX reporting for SA fractions,001 & 009. *Please list as separate report. Org. 67 11 Date 10/1/20- Time 4.Relinguished by 1.Relinguished by Date Org. Time Date of allela Received by Org. (-7-7) Time 10 0 75 4. Received by Org. Date Time Date 5.Relinguished by 2.Relinquished by Time Org. Date Org. Time Date Time 5. Received by 2. Received by Org. Org. Date Time 3.Relinguished by Org. Date Time 6.Relinguished by Org. Date Time Received by Org Date Time 6. Received by Org. Date Time

Internal Lab		,	ANAL	YSIS REQU	EST A	AND	CHA	IN OF CL	JSTOE	Y.		Page 1 of	<u></u>		
Batch No.	74			SMO Use							AR/COC	610	839		
Dept. No./Mail Stop:	6791/1087	Date Sam	oles Shipp	ed: 16 - 7 5 -	/•	Project	/Task No.	9802601.07	,		Waste Characterizati	ion			
Project/Task Manager:	Paul Freshour	Carrier/Wa			Ú are.			on: <u>چې چې :</u> n	(20 2 m) 6	3640	-Send preliminary/cop	y report to:			
Project Name:	CWL GWM	Lab Conta	ab Contact: Edie Kent/803-556-8171 Contract #: Po									,			
Record Center Code:	ER/1267 074/DAT	Lab Destir	O Destination: GEL O Contact/Phone: Pam Puissant/505-844-3185								Released by COC No.:				
Logbook Ref. No.:	ER 049	SMO Conta	ct/Phone:	Pam Puissant/505-84	44-3185	70	4	50000	E se est	5 1/2	☑ Validation Required				
Service Order No.	CF 025-07	Send Repor	t to SMO:	Lorraine Herrera/505	-844-319	4					Bill To:Sandia National Labs	(Accounts Payable)			
Location	Tech Area										P.O. Box 5800 MS 01	54			
Building	Room			Referen	ce LOV	(avail	able at	SMO)			Albuquerque, NM 871	85-0154			
<u>-</u>	ER Sample ID or	Pump	ER Site		Sample		ntainer	Preserv-	Collection	Sample	Parameter & I		Lab Sample		
Sample NoFraction	Sample Location De	tail Depth (ft)		Collected	Matrix	Туре	Volume	ative	Method	Type	Request	ed	ID		
083049-001	CWL-MW2BU	491	Not	10/20/06 0850	GW	G	3x40ml	HCL	G	SA	VOC (8260)				
083049-009	CWL-MW2BU	491	i	10/20/06 0855	GW	Р	500ml	HNO3	G	SA	Total Metals+Fe (SW84	46-6020/7470)			
083050-001	CWL-TB7	NA		10/20/06 0850	DIW	G	3x40ml	HCL	G	ТВ	VOC (8260)				
			 		1										
			 -				<u> </u>						-		
			 		ļ				 						
			ļ		<u> </u>		L								
							,								
			†		 		 					**************************************			
RMMA	☐Yes ☑No	Ref. No.		Sample Tracking		Smo U	se .	Special Instru	uctions/QC	Requireme	ents	Abnormal			
Sample Disposal	Return to Client	☑ Disposal by	lab	Date Entered(mm/do	1/vv)				Yes 🗌			Conditions	on .		
Turnaround Tin			30 Day	Entered by:	377			Level D Packa		✓ Yes	□ No	Receipt			
Return Samples By		1		ted TAT	QC inits	i a sedesa		*Send report							
, , , , , , , , , , , , , , , , , , , ,	Name	Signature	Init	Company/Orgai			ellular	Tim Jackson/		S 1087/50	5-284-2547				
Sample		115 6 16 m	-	Weston/6791/844-51							Pa.		Lab Use		
Team	Robert Lynch	Hymely	Z	Weston/6791/844-40			Sampling con	nnlete CWI	1st Otr 0	7		Lab Obc			
Members		audie ANIX	41	Weston/6791/284-52			(Camping con	and the second second	properties.	- Arther				
linem Sero	VVIIIIam 5 Cibson 12	concert 10 8	A CO TOY	VVestorije j 3 (7204-32	202/200-1	307		App.IX report	ing for SA	fractions (001 % 009				
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Internal Lab		F	NAL	YSiS REQU	EST /	AND	CHAI	N OF CL	JSTOD	Ϋ́		Page_1 of 1	
Batch No.	17.7			SMO Use							AR/COC	610	841
Dept. No./Mail Stop:	6791/1087	Date Samp	les Shipp	ed: /8 - 1 - 7	° (=	Project	/Task No.	9802601.07			Waste Characterization	n	
Project/Task Manager	Paul Freshour	Carrier/Wa				SMO A	uthorizatio	on: 000 1	1000	-16-17	-Send preliminary/copy	report to:	
Project Name:	CWL GWM	Lab Contac	Carrier/Waybill No. SMO Authorization: Contract: Edie Kent/803-556-8171 Contract #: PO 21671						6.6				
Record Center Code	ER/1267 074/DAT	Lab Destin	ation:	GEL		1		18200 6			Released by COC No.	:	
Logbook Ref. No :	ER 049	SMO Contac	VPhone:	Pam Puissant/505-84	44-3185	700	R 108	rac or i	In this it		☑ Validation Required		
Service Order No.	CF 025-07	Send Report	to SMO	Lorraine Herrera/505	-844-319	9					Bill To:Sandia National Labs (Accounts Payable)	
Location	Tech Area										P.O. Box 5800 MS 015	54	
Building	Room			Referen	ce LOV	(avail	able at S	SMO)			Albuquerque, NM 8718	5-0154	
Sample NoFraction	ER Sample ID or Sample Location Detail	Pump Depth (ft)	ER Site	Date/Time(hr) Collected	Sample Matrix	Co Type	ontainer Volume	Preserv- ative	Collection Method	Sample Type	Parameter & N Requeste		Lab Sample ID
083053-001	CWL-MW4	500	Flot	10/17/06 1011	GW	G	3x40ml	HCL	G	SA	VOC (8260)		
083053-009	CWL-MW4	500	1	10/i7/06 1012	GW	Р	500ml	HNO3	G	SA	Total Metals+Fe (SW84	6-6020/7470)	
083054-001	CWL-MW4	500		10/17/06 1011	GW	G	3x40ml	HCL	G	DU	VOC (8260)		
083054-009	CWL-MW4	500		10/17/06 1012	GW	Р	500ml	HNO3	G	DU	Total Metals+Fe (SW84	6-6020/7470)	
083055-001	CWL-TB9	NA	1	10/17/06 1011	DIW	G	3x40ml	HCL		ТВ	VOC (8260)		
RMMA		ef. No.		Sample Tracking		Smo U	se	Special Instru			ents	Abnormal	
Sample Disposal	Return to Client	Disposal by I	ab	Date Entered(mm/do	d/yy)			EDD 🗹	Yes		_	Conditions	on
Turnaround Tin	ne 🗌 7 Day 📿 15 I	Day 🔲 3	0 Day	Entered by:				Level D Pack	age	✓ Ye	s No	Receipt	
Return Samples By	:		Negotia	ated TAT	QC inits			*Send report	to:				
	Name 1	Signature	Init	Company/Orga	nization/P	hone/C	ellular	Tim Jackson	Org 6791/N	MS 1087/50	05-284-2547		
Sample	Alfred Santillanes	Stille	-48	Weston/6791/844-51	130/228-0	710		1					Lab Use
Team		Tink	100	Weston/6791/844-40	013/250-7	'090		1					
Members	Carolyn Daniel		CUO	SNL/6791/284-1689				1					,
								App.IX report	ting for SA	fractions.	001 & 009.		
			 					*Please list a	_				
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CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 1

Internal Lab 610843 AR/COC Batch No SMO Use 10/19/06 Project/Task No. 98026 .01.07 Waste Characterization Date Samples Shipped: Dept. No./Mail Stop 6791/1087 SMO Authorization: Samo -Send preliminary/copy report to: Paul Freshour Carrier/Waybill No. Project/Task Manager Contract #: PO 21671 CWL GWM Lab Contact: Edie Kent/803-556-8171 Project Name SOU BUTTLE DEPOR Released by COC No .: ER/1267 074/CIAT Lab Destination: Record Center Code: ✓ Validation Required Pam Puissant/505-844-3185 Loabook Ref. No.: ER 049 SMO Con:act/Phone: Service Order No. CF 025-07 Send Report to SMO. Lorraine Herrera/505-844-3199 Bill To:Sandia National Labs (Accounts Payable) Location P.O. Box 5800 MS 0154 Tech Area Reference LOV(available at SMO) Buildina Room Albuquerque, NM 87185-0154 ER Site Date/Time(hr) Sample Container Preserv-Collection Sample Parameter & Method Lab Samp ER Sample ID or Pump Sample Location Detail Depth (ft) No. Collected Matrix Type Volume ative Method Type Requested ID Sample No.-Fraction NIA G 3x40ml HCL G SA VOC (8260) 101906/0939 GW 083058-001 CWL-MW5L 543 Total Metals+Fe (SW846-6020/7470) 543 101906/0941 GW 500ml HNO3 G SA 083058-009 CWL-MW5L G VOC (8260) G 3x40ml HCL FB 101906/0939 DIW 083059-001 CWL-FB2 NA G NA 101906/0939 DIW G 3x40ml HCL TB VOC (8260) 083060-001 CWL-TB11 Abnormal Yes No Special Instructions/QC Requirements Ref. No. Sample Tracking Smo Use **RMMA** Conditions on EDD ✓ Yes □ No. Disposal by lab Date Entered(mm/dd/yy) Sample Disposal Return to Client Yes No Receipt Level D Package Turnaround Time 7 Day ✓ 15 Day 30 Day Entered by: *Send report to: Negotiated TAT QC inits Return Samples By Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Name Weston/6791/844-5130/228-0710 Lab Use Sample Alfred Santillaries Weston/6791/844-4013/250-7090 QED Purge Team Robert Lynch Members William J Gibson Weston/6791/284-5232/239-7367 App.IX reporting for SA fractions,001 & 009. *Please list as separate report. Date .Relinquished by Section Org 1741 Date rolls/Cb Time 1645 4.Relinquished by Org. Time 19/7/5 Time /0 4 5 4. Received by Org. Date Time I. Received by Org/n7-01 Date(C) Time 5.Relinquished by Org. Date Relinquished by Org Date Time Time 5. Received by Org. Date Time Received by Date Date Time 6.Relinguished by Org. Date Time 3.Relinguished by Org Date Time 6. Received by Org Date Time 3 Received by Org

CONTRACT LABORATORY
ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 1 Internal Lab 610838 AR/COC Batch No. SMO Use Waste Characterization Date Samples Shipped: Project/Task No. 98026 .01.07 Dept. No./Mail Stop: 6791/1087 SMO Authorization: -Send preliminary/copy report to: Paul Freshour Carrier/Waybill No. Project/Task Manager Edie Kent/803-556-8171 Contract #: PO 21671 CWL GWM Lab Contact: Project Name: Released by COC No .: GEL ER/1267 074/DAT Lab Destination: Record Center Code ✓ Validation Required Pam Puissant/505-844-3185 FR 049 SMO Contact/Phone Logbook Ref No. Bill To:Sandia National Labs (Accounts Payable) CF 025-07 Send Report to SMO Lorraine Herrera/505-844-3199 Service Order No. P.O. Box 5800 MS 0154 Location Tech Areà Reference LOV(available at SMO) Albuquerque, NM 87185-0154 Room Building Lab Sample ER Sample ID or ER Site Date/Time(hr) Sample Container Preserv-Collection Sample Parameter & Method Pump Method Requested ID Matrix Type Volume Sample Location Detail Depth (ft) No. Collected ative Type Sample No.-Fraction allat G 3x40ml HCL G VOC (8260) 499 101306/0834 GW SA CWL-MW5U 083046-001 Р HNO3 G Total Metals+Fe (SW846-6020/7470) 499 101306/0836 GW 500ml SA 083046-009 CWL-MW5U 499 101306/0834 GW G 3x40ml HCL. G DU VOC (8260) CWL-MW5U 083047-001 GW P 500ml HNO3 G Total Metals+Fe (SW846-6020/7470) 101306/0836 DU CWL-MW5U 499 083047-009 G 101306/0834 DIW 3x40ml HCL. TB VOC (8260) NA CWL-TB6 083048-001 Abnormal Special Instructions/QC Requirements RMMA Yes √No Ref. No. Sample Tracking Smo Use ☑ Yes ☐ No Conditions on Return to Client Disposal by lab Date Entered(mm/dd/yy) Sample Disposal ☐ No ✓ Yes Receipt 30 Day Level D Package Turnaround Time 7 Day ✓ 15 Day Entered by: Negotiated TAT *Send report to: QC inits. Return Samples By: Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Name Signature Lab Use 1 Mine tille Weston/6791/844-5130/228-0710 Sample Alfred Santillanes Weston/6791/844-4013/250-7090 Team Robert Lynch 7/1/1/20 204 716 Weston/6791/284-5232/239-7367 Members William J Gibson App.IX reporting for SA fractions,001 & 009. *Please list as separate report. HULLS TUP 4.Relinguished by Date Org. 1-741 Date (U/i// ি Time 🕜 ও স্থা Org. Time 1. Relinguished by Org /- 7/1 Date 4. Received by Org. 1 Received by 1-11/20-1 Date Wild Dir Time 1-031 Time 5 Relinguished by Org Org Date Time Date Time 2.Relinquished by Org. Date Time 5 Received by Org Date Time 2. Received by Time 6 Relinquished by Org. Date Org Date Time 3 Relinquished by 6 Received by Org Date Time Org Date Time Received by

Internal Lab		A	NAL	YSIS REQUE	EST A	AND	CHAI	N OF C	JSTOD	Υ		Page 1 of 1		
Batch No.	1,4			SMO Use							AR/COC	610	842	
Dept. No./Mail Stop:	6791/1087	Date Sampl	es Shipp	ed: 10-18-6	26	Project	Task No.	9802601.07	4		Waste Characterization	n		
Project/Task Manager:	Paul Freshour	Carrier/Way	bill No.		. / =	SMO A	uthorizatio	n: 124	Han	Grist	Send preliminary/copy	report to:		
Project Name:	CWL GWM	Lab Contac		Edie Kent/803-556-81	71	Contrac	ct #: PO 2	1671	1000			•		
Record Center Code:	ER/1267 074/DAT	Lab Destina	ation:	GEL		<u> </u>	מ שופ		-4.4	. 4	Released by COC No.:			
Logbook Ref. No.:	ER 049	SMO Contact	VPhone:	Pam Puissant/505-84	4-3185	> 6	E B	1012 104 1671 104	() KYN	M	☑ Validation Required			
Service Order No.	CF 025-07	Send Report	to SMO:	Lorraine Herrera/505-							Bill To:Sandia National Labs (A	Accounts Payable)		
Location	Tech Area										P.O. Box 5800 MS 0154	4		
Building	Room	1		Reference	ce LOV	(avail	able at S	SMO)			Albuquerque, NM 87185-0154			
	ER Sample ID or	Pump	ER Site	Date/Time(hr)	Sample	·	ntainer	Preserv-	Collection	Sample	Parameter & M		Lab Sample	
Sample NoFraction	1	Depth (ft)	No.	Collected	Matrix	Туре	Volume	ative	Method	Туре	Requested	i	ID .	
083056-001	CWL-MW6L	549	WH	101806/1036	GW	G	3x40ml	HCL	G	SA	VOC (8260)			
083056-009	CWL-MW6L	549		101806/1037	GW	Р	500ml	HNO3	G	SA	Total Metals+Fe (SW846	6-6020/7470)		
083057-001	CWL-TB10	NA NA	1	101806/1036	DIW	G	3x40ml	HCL	G	TB	VOC (8260)			
000001-001		1 11/	- 	101000/1030	DIVV	-	3,40111	1102	 	- '5	1000 (0200)			
													<u> </u>	
RMMA	☐ Yes ☑No Ref	No.		Sample Tracking		Smo U	se	Special Instr	uctions/QC	Requirem	ents	Abnormal		
Sample Disposal	Return to Client	Disposal by la	ab	Date Entered(mm/dd	/vv)			EDD 🗸	Yes 🗌			Conditions	on	
Turnaround Tin			0 Day	Entered by:	277			Level D Pack		✓ Yes	s 🗌 No	Receipt		
Return Samples By				ted TAT	QC inits	i.		*Send report	to:			┤ `		
		Mature 4		Company/Organ	nization/P	hone/Co	ellular	Tim Jackson	/Ora 6791/N	AS 1087/50	05-284-2547	1		
Sample		H Suit	12 2	Weston/6791/844-51									Lab Use	
Team	Robert Lynch	Linck	101	Weston/6791/844-40				QED Purge						
Members		Cer By	12008	Weston/6791/284-52				1						
		an like it	1.0 0x)					App.IX repor	ting for SA	fractions.	001 & 009.			
			 					*P/ease list a	•					
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3. Received by		Org.	Date	Time		6. Rec	eived by			Org.	Date	Tim	ie .	

Page 1 of 1

ANALYSIS REQUEST AND CHAIN OF CUSTODY Internal Lab 610836 AR/COC Batch No. SMO Use Dept. No./Mail Stop: 6791/1087 Project/Task No. 98026 .01.07 Waste Characterization Date Samples Shipped: intulna SMO Authorization: Project/Task Manager Paul Freshour Carrier/Waybill No. -Send preliminary/copy report to: Contract #: PO 21671 CWL GWM Project Name: Lab Contact: Edie Kent/803-556-8171 ER/1267 074/DAT GEL SOUT BOTTLE ORPOR Record Center Code: Lab Destination Released by COC No.: ER 049 Logbook Ref. No. SMO Contact/Phone. Pam Puissant/505-844-3185 Validation Required CF 025-07 Service Order No. Send Report to SMO Lorraine Herrera/505-844-3199 Bill To: Sandia National Labs (Accounts Payable) Location Tech Area P.O. Box 5800 MS 0154 Reference LOV(available at SMO) Building Room Albuquerque NM 87185-0154 ER Sample ID or ER Site Date/Time(hr) Lab Sample Pump Sample Container Preserv-Collection Sample Parameter & Method ID Sample No.-Fraction Sample Location Detail Depth (ft) No. Collected Method Matrix Type Volume ative Requested Type NIA 499 HCL G VOC (8260) 083042-001 CWL-MW6U 101106/0844 GW G 3x40ml SA Р G 083042-009 CWL-MW6U 499 101106/0846 GW 500ml HNO3 SA Total Metals+Fe (SW846-6020/7470) G 083043-001 NΑ 101106/0844 G 3x40ml HCL VOC (8260) CWL-TB4 DIW TB No Abnormal^{*} RMMA □Yes Ref. No. Sample Tracking Special Instructions/QC Requirements Smo Use Sample Disposal Return to Client ☑ Disposal by lab Yes No Conditions on Date Entered(mm/dd/yy) ✓ Yes □ No Turnaround Time 7 Day 7 15 Day 30 Day Receipt Entered by: Level D Package Return Samples By: Negotiated TAT QC inits. *Send report to: Name Init Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Sample Alfred Santillanes Weston/6791/844-5130/228-0710 Lab Use Team Weston/6791/844-4013/250-7090 Robert Lynch Members William J Gibson Weston/6791/284-5232/239-7367 App.IX reporting for SA fractions,001 & 009. *Please list as separate report. 1.Relinquished by Date 10/11/06Time 0970 4. Relinquished by Org. Date Time I. Received by 10rg 6791 Date 10/11/06-Time 0970 4. Received by Org. Date Time 2.Relinguished by Org. Date Time 5.Relinquished by Org. Date Time 2. Received by Org. Date Time 5. Received by Org. Time Date 3 Relinquished by Ora Date Time 6.Relinquished by Org. Date Time Received by Ora. Date Time 6. Received by Orq. Date Time

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CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY

Page 1 of 1 Internal Lab 610837 AR/COC Batch No. SMO Use Waste Characterization Dept. No./Mail Stop: 6791/1087 Date Samples Shipped: Im 111100 Le Project/Task No. 98026 .01.07 SMO Authorization: -Send preliminary/copy report to: Project/Task Manager: Paul Freshour Carrier/Waybill No. Contract #: PO 21671 Project Name: CWL GWM Lab Contact: Edie Kent/803-556-8171 Released by COC No.: ER/1267 074/DAT Record Center Code: Lab Destination: SOU PUTTUE EXHER. ☑ Validation Required ER 049 Loabook Ref. No.: SMO Contact/Phone: Pam Puissant/505-844-3185 CF 025-07 Bill To:Sandia National Labs (Accounts Payable) Service Order No. Send Report to SMO: Lorraine Herrera/505-844-3199 Location Tech Area P.O. Box 5800 MS 0154 Room Reference LOV(available at SMO) Buildina Albuquerque, NM 87185-0154 Parameter & Method Lab Sample ER Sample ID or Pump ER Site Date/Time(hr) Sample Container Preserv-Collection Sample ID Sample No.-Fraction Method Requested Sample Location Detail Depth (ft) Collected Type Volume Type No. Matrix ative G VOC (8260) HCL EΒ 083044-001 CWL-EB1 NA 10/11/06 0955 DIW 3x40ml G EB Total Metals+Fe (SW846-6020/7470) 083044-009 CWL-EB1 NA 10/11/06 0956 DIW 500ml HNO3 083045-001 CWL-TB5 NA 10/11/06 0955 DIW G 3x40ml HCL G TB VOC (8260) Abnormal **RMMA** Yes √No. Ref. No. Special Instructions/QC Requirements Sample Tracking Smo Use Yes No Conditions on Return to Client ✓ Disposal by lab Sample Disposal Date Entered(mm/dd/yy) FDD 15 Day ☐ No Receipt Turnaround Time 7 Day ✓ Yes ☐ 30 Day Entered by: Level D Package *Send report to: Return Samples By: **Negotiated TAT** QC inits. Name 1 Signature Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Lab Use Sample Alfred Santillanes Weston/6791/844-5130/228-0710 Team Weston/6791/844-4013/250-7090 Robert Lynch Weston/6791/284-5232/239-7367 Members William J Gibson App.IX reporting for SA fractions,001 & 009. *Please list as separate report. Medditte --Org. Fall Date 1011 / Time 1070 Time 1.Relinguished by 4.Relinguished by Date Org. Saver Org. 1 Pale college Time 10 70 . Received by 4. Received by Date Time Org. 2.Relinguished by Org. Date Time 5.Relinquished by Org. Date Time Date Time 2. Received by Date Time 5. Received by Org. Org. 3.Relinguished by Date Time 6.Relinguished by Org. Date Time Org. Org. Date Time . Received by Org. Date Time 6. Received by

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CONTRACT LABORATORY ANALYSIS REQUEST AND CHAIN OF CUSTODY Page 1 of 1 Internal Lab 610840 AR/COC SMO Vse Batch No. Date Samples Shipped: 10/16/66 Project/Task No. 98026 .01.07 Waste Characterization Dept. No./Mail Stop: 6791/1087 SMO Authorization: Langue Project/Task Manager: Paul Freshour Carrier/Waybill No. -Send preliminary/copy report to: Edie Kent/803-556-8171 Contract #: PO 21671 Project Name: CWL GWM Lab Contact: GEL Record Center Code: ER/1267 074/DAT Lab Destination: Released by COC No.: ☑ Validation Required Pam Puissant/505-844-3185 Logbook Ref. No.: ER 049 SMO Contact/Phone: Lorraine Herrera/505-844-3199 Service Order No. CF 025-07 Send Report to SMO: Bill To:Sandia National Labs (Accounts Payable) Location Tech Area P.O. Box 5800 MS 0154 Reference LOV(available at SMO) Building Room Albuquerque, NM 87185-0154 ER Sample ID or Pump ER Site Date/Time(hr) Sample Container Collection Sample Preserv-Parameter & Method Lab Sample Sample No.-Fraction Sample Location Detail Depth (ft) No. Collected Matrix Type Volume ative Method Type Requested ID NA G NA 10/13/06 0937 DIW G 3x40ml HCL. EΒ VOC (8260) 083051-001 CWL-EB2 083051-009 CWL-EB2 NA 10/13/06 0938 DIW 500ml HNO3 G Total Metals+Fe (SW846-6020/7470) √No. Ref. No. Special Instructions/QC Requirements RMMA Yes Sample Tracking Smo Use Abnormal ✓ Yes No Return to Client ✓ Disposal by lab Date Entered(mm/dd/yy) EDD Conditions on Sample Disposal ✓ 15 Day 30 Day ✓ Yes ☐ No Turnaround Time 7 Day Entered by: Level D Package Receipt **Negotiated TAT** QC inits. *Send report to: Return Samples By: Name Signature Company/Organization/Phone/Cellular Tim Jackson/Org 6791/MS 1087/505-284-2547 Weston/6791/844-5130/228-0710 Sample Alfred Santillanes Lab Use TL Weston/6791/844-4013/250-7090 Team Robert Lynch See COC # 610838 for trip blank info. Members William J Gibson Weston/6791/284-5232/239-7367 App.!X reporting for SA&DU fractions,001 & 009 *Please list as separate report. Relinquished by 11-074 Selection 674/ Date Whole & Time for 31 4.Relinguished by Org. Date Time Received by Org. 674 / Date 10/16/06/Time 6930 4. Received by Org. Date Time 2.Relinguished by Org. Date Time 5.Relinguished by Org. Date Time

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ATTACHMENT C DATA VALIDATION REPORTS FOR GROUNDWATER ANALYTICAL RESULTS October - December 2006

Site: CWL Assessment GW		AF	vcoc:	610839			Data 1	Type: C	Organic	& Inor	ganic		
	VOC	75-15-0 (carbon disulfide)	ICP-MS metals	7440-36-0 (antimony)									
083049-001 CWL-MW2BU 083049-009 CWL-MW2BU		5.0 UJ,B		J,B3									
											44/00/0		

Validated By: Kwin A Lambert

Kevin A. Lambert

Date: 11/09/06



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201

Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

November 9, 2006

To:

File

From:

Kevin Lambert

Subject:

Organic Data Review and Validation - SNL

Site: CWL Assessment GWM

AR/COC: 610839 SDG: 174728 Laboratory: GEL

Project/Task: 98036.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

All samples were prepared and analyzed with accepted procedures using method EPA8260B (VOC). All compounds were successfully analyzed. Problems were identified with the data package that result in the qualification of data.

1. <u>VOC</u>:

The continuing calibration verification percent difference (CCV %D) for carbon disulfide (-38%) was > 20% but \leq 40%. The associated sample result that was non-detect should not be qualified and the detect should be qualified "J." Also, carbon disulfide was detected (\geq DL) in the method blank. The associated sample result that was non-detect should not be qualified. However, the associated sample result that was detect < the RL and < 5X the blank concentration has already been qualified due to poor calibration and, thus should be qualified "UJ" at the RL (5.0 ug/L) with descriptive flag "B."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times

All samples were extracted and analyzed within the prescribed holding times and properly preserved.

Calibration

The initial calibration and continuing calibration data met QC acceptance criteria except as noted above in the summary section and as follows.

VOC:

The calibration response factor (RF) for acetonitrile (0.04), isobutyl alcohol (0.01), propionitrile (0.04), and trichloroethene (0.28) was < the specified minimum RF (0.05, 0.05, 0.05, and 0.30, respectively). No data should be qualified based on professional judgment. The CCV %D for 2-chloro-1,3-butadiene (27%), allyl chloride (27%), dichlorodifluoromethane (34%), pentachloroethane (28%), and trans-1,4-dichloro-2-butene (32%) was > 20% but \leq 40%, and acrolein (46%) was > 40% but \leq 60% (see Volatile Organics Worksheet). The associated sample results were non-detects and as a result based on professional judgment no data should be qualified.

Blanks

No target analytes were detected in the blanks except noted above in the summary section and as follows.

VOC:

1,2,4-Trichlorobenzene was detected (≥ DL) in the method blank. The associated sample results were non-detects; no data should be qualified as a result.

Internal Standards (ISs)

Internal standards data met QC acceptance criteria.

Surrogates

The surrogate recoveries met QC acceptance criteria.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

VOC:

The LCS recovery for acrolein (146%) was > the upper QC acceptance limit (139%). The associated sample results were non-detects; no data should be qualified as a result. Also, it should be noted that no LCSD was provided with the SDG. Laboratory precision was assessed using the MS/MSD. No data should be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD met QC acceptance criteria.

Target Compound Identification/Confirmation

No target compound identification/confirmation analyses were required.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No trip blank (TB), equipment blank (EB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

VOC:

A TB was submitted on the AR/COC(s).

No other specific issues were identified which affect data quality.



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744

Email: minteer@aol.com

Memorandum

Date:

November 9, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation - SNL

Site: CWL Assessment GWM

AR/COC: 610839 SDG: 174728 Laboratory: GEL

Project/Task: 98036.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA6020 (ICP-MS metals) and EPA7470A (CVAA mercury). Problems were identified with the data package that result in the qualification of data.

1. ICP-MS metals:

The following target analytes were detected (≥ DL) in one or more of the blanks (ICB, CCB, MB, EB). The associated sample results are qualified as noted below.

Sample 174728-003

Sb was a detect <5X the ICB/CCB and should be qualified "J, B3."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

ICP-MS metals and CVAA mercury:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

ICP Serial Dilution

The serial dilution met QC acceptance criteria.

ICP Interference Check Sample (ICS)

The ICS data met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other OC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s).

No other specific issues were identified which affect data quality.

Data Validation Summary

Site/Projec	t: CWL GWM	Project/Task #: <u>98036, /0, //, 0/</u> # of Samples:	3	Matrix:a	queous	
AR/COC#	: 6/0839	<u>Laboratory Sample ID</u>	s:	174728-001	-002,-003	
Laboratory	: GEL				<i>,</i>	
SDG #:	174728					

					Analy	sis				
QC Element		Orga	anics			Inorg	anics			
	VOC	svoc	Pesticide/ PCB	HPLC (HE)	ICP/AESK	GFAA/ AA	CVAA (Hg)	CN	RAD	Other
1. Holding Times/Preservation	V				✓		V			
2. Calibrations	UJ				7		V			
3. Method Blanks	UJ			`	/		V			
4. MS/MSD	✓				<i>></i>		✓			
5. Laboratory Control Samples	\checkmark				✓		V			
6. Replicates					✓		V			
7. Surrogates	/									
8. Internal Standards	/				,					
9. TCL Compound Identification	/	,								
10. ICP Interference Check Sample					√					
11. ICP Serial Dilution					\checkmark					
12. Carrier/Chemical Tracer Recoveries										
13. Other QC TB	R = Unusal			NP	NA = Not Prov		NA			\

U = Not Detected UJ = Not Detected, Estimated	Check $()$ = Shaded Cells =	Acceptable Not Applicable (also "NA")	Other: Reviewed By: Lwin A Lambert Date: 11-09-06

Volatile Organics (SW 846 Method 8260)

Page 1 of 3

Site/Project:	CWL GWM	AR/COC #: 610839	# of Samples:	2 Matrix: agricans
		Laboratory Report #: 174728	Laboratory Sample IDs:	174728-001,-002
Methods:	EPA8260B(VOC		Batch #s: 584/04	

ıs	CAS#	Name	TCL	Min. RF	Inte	rcept	Calib. RF	Calib. RSD/ R ² <20% /	C(D		hod ks	LCS	LCSD	LCS	M	ıs	MSD	MS RPD	Field Dup. RPD	Equip. Blanks	Tr Blaı	حداد	5x Blk 510×7	
			Ļ	<u> </u>		,	>.05	0.99	20)%		,	,_			_	_							7,0,1	
		1,1,1,2-Tetrachloroethane	<u></u>		1	(A	<u> </u>				<u></u>		_				$\langle \cdot $		V	1					
		1,1,1-Trichloroethane		0.10			V	√ ,					4	1		-	Ш			1		-			
	79-34-5	1,1,2,2-Tetrachloroethane		0.30				V					\perp	1	<u> </u>	\perp				1					
		1,1,2-Trichloroethane		0.10			V	V/						1			\square			1					-
		1,1-Dichloroethane		0.10			<i>✓</i> ,	V/						1			\sqcup			1					
1		1,1-Dichloroethene	V	0.20				_			L			Ц						<u> </u>			1		-
		1,1-Dichoropropene			Ш								_										1_		
3	87-61-6	1,2,3-Trichlorobenzene	L									,			<u>.</u>		\sqcup					<u> </u>	1		
	96-18-4	1,2,3-Trichloropropane	V				/	V			1	/											\perp		_
		1,2,4-Trichlorobenzene	V				V	/			0.90	25												4.81	
3	95-63-6	1,2,4-Trimethylbenzene									,											L			
3	96-12-8	1,2-Dibromo-3- chloropropane	/				\checkmark	✓																	g parties
2		1,2-Dibromoethane (EDB)	セ	1			\checkmark	/	7														1		
2		1,2-Dichlorobenzene	Ť	 										1		_				1			$\overline{}$		
1		1,2-Dichloroethane	17	0.10			/	$\overline{}$		_				1		_						-	\vdash		1
1		1,2-Dichloropropane		0.01				V		$\overline{}$											1				
3		1,3,5-Trimethylbenzene	1												1										
3		1,3-Dichlorobenzene	-		_										1										
2		1,3-Dichloropropane	1	0.01											1										
3		1.4-Dichlorobenzene																							
-	107-04-0	1-Bromo-2-chloroethane	+												1										
\mathbf{h}^{-}		2,2-Dichloropropane	+-		1										1						1				
1		2-Butanone (MEK) (10xblk)	V	0.01			/	✓		/		-			1										
1		2-Chloro-1, 3-butadiene	∀		 	1		/	2	7			 		11						1				1
1		2-Chloroethyl vinyl ether	+-	-	1				1/	/					H	\top									
3	95-49-8	2-Chlorotoluene	_	1	1				Ť						11										
2		2-Hexanone (MBK)	∀	0.01				V							11	1					1				
3		4-Chlorotoluene	Ť		1										11						1				
3	99-87-6	4-Isopropyltoluene	+		1										1	_					1				
2	108-10-1	4-Methyl-2-pentanone (MIBK)	1	0.10			7	V																	
IT	67-64-1	acetone(10xblk)	1	0.01			1	1		1			1		1	7									
i	75-05-8	Acetonitrile	17				0.04	V.	\	/			V												
i	107-02-8	Acrolein	ヤ	,	1	/	7		4	6			1461	139)		П									
i	107-13-1	Acrylonitrile	1			٧.	V.	V.	`	7			1			Π									
i	107-05-1	Allyl chloride	17		1	/	V	V,	2	7		1				1	/	/					/		
1	71-43-2	Benzene	7	0.50	1	7	1	V	,		1		17/		1	11		V	IV			1	/		

Reviewed By: Kurin A Lamber Date: 11-09-06

Volatile Organics

Site/Project:		AR/COC #:	610839	Batch #s:		
Laboratory:	,	Laboratory Report #:	174728	# of Samples:	Matrix:	

Laut	ratory:		- '	Laudia	itory i	Серо	1t π	144	0	0		- #0	ı Sam	pics.					Matrix	٠					_
ıs	CAS#	Name	T C	Min. RF	Interd	cept	Calib. RF	Calib. RSD/ R ²		CV 6D	Met Bl		LCS	LCS	SD	LCS RPD	MS	MSD	MS RPD	Field Dup. RPD	Equip. Blanks		ip nks	5x 131k	
			L				>.05	<20%/ 0.99	20	0%										RPD			<i></i>	[10x]	
3	108-86-1	Bromobenzene			\sim	A			,	V	\	/	\checkmark				V	LV	V			V	/		!
1	74-97-5	Bromochloromethane																		1\					
1	75-27-4	Bromodichloromethane	\checkmark	0.20			V	√		L_		<u>. </u>		1						1					
		Bromoform	\checkmark				√ ,	V						1				1_1_		1					
				0.10					L_	/		/	Ц_	Ц_	_				<u> </u>						1
		015(2 Cincicisopicp) i/cinci	\checkmark				<u> </u>			<u> </u>	N N			1	_										1
				0.10					- 3		4.6	<u> 2/J</u>		\vdash	_									21.1	
	56-23-5	Carbon tetrachloride		0.10			√ ,	√ ,	<u>\</u>	/	<u>\</u>		Ц_	1											<u> </u>
	108-90-7	Chlorobenzene		0.50				V					<u> </u>	1				11-		<u> </u>					1
1	75-00-3	Chloroethane		0.01			/	V					1		_							<u> </u>			<u> </u>
	67-66-3	Chloroform		0.20			√ ,	-/					<u> </u>	-1	\dashv		\perp		\vdash	 					1
	74-87-3	Chloromethane	\checkmark	0.10	\square								-							 					
1	156-59-2	cis-1,2-Dichloroethene	ļ.,		_						ļ	-			1-1					 					1
1		cis-1,3-Dichloropropene		0.20			/	<i>\</i>	\square		ļ		 -	ļ	11					 					
2	124-48-1	Dibromochloromethane	_	0.10	\square		V	<u> </u>		/	<u> </u>	ļ	 	-	4		_			1	ļ				
	74-95-3	Dibromomethane	√,		1		V,	<u> </u>	V		ļ	 	 	<u> </u>	-H							-			_
	75-71-8	Dichlorodifluoromethane	V				V ,	<u> </u>	2	4	ļ	ļ	\vdash	<u> </u>	\dashv			+		ļ		-			
2	97-63-2	Ethyl methacrylate						\ <u>/</u>	<u> </u>	<u> </u>	ļ		1	<u> </u>	-4			 - - - - - - - - - 		ļ					
2	100-41-4	Ethylbenzene	~	0.10	\sqcup		/	V	L	-	 	ļ	1	 							1	ļ			
	87-68-3	Hexachlorobutadiene	ļ,	ļ	1				_	 	ļ	ļ	 -	<u> </u>	_				\vdash		<u> </u>				
1	74-88-4	Iodomethane	\vee		\sqcup		V	/	_	ļ			 	—	_										
	78-83-1	Isobutyl alcohol	V				0.01	V	_				-	-					+-+		<u> </u>				
1	80-62-6	Methyl methacrylate	V			,	<u> </u>	V		-		 	-	-	_						ļ	-			-
	126-98-7	Methylacrylonitrile	$ \checkmark $		<u> </u>	,	\ <u>/</u>	V,		 	1	↓	1	ļ	_	\				-	1				
	75-09-2	Methylene chloride (10xblk)	✓	0.01		, ,	V	✓	<u> </u>				\vdash			1									
3	91-20-3	Naphthalene	L		$\perp \Lambda$	A	<u></u>						 			1									
3	104-51-8	n-Butylbenzene	_	<u> </u>					<u> </u>	1_	-		1	<u> </u>	_	1				ļ					
3	103-65-1	n-Propylbenzene	_			<u> </u>			<u> </u>	1/-	ļ	╀	1	<u> </u>	_	1	\vdash		\vdash	ļ	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	 	ļ		
2	95-47-6	o-Xylene	↓	4		-				<u>V</u>	<u> </u>		-	ــــ	_	-									1
	76-01-7	Pentachloroethane	✓			ــــــ	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1-2	18			ـ	<u> </u>					 -	-		ļ	-		1
1	107-12-0	Propionitrile	$ \checkmark $				0.04	V	-	<u>v</u>			 -	-		-			1	ļ		-	-		
3	135-98-8	sec-Butylbenzene	Ļ.,		ļ.,,	ļ	ļ,		-	1_	-	-	₩	-				1-1-							
2	100-42-5	Styrene	14	0.30	L Y		V	/	-	-	-	_	-	-	_				+			-	-		
3	98-06-6	tert-Butylbenzene	١,			P			-	-	-		\vdash	-			-		 				ļ		
2	127-18-4	Tetrachloroethene	1	0.20	/		 	V	\vdash	4		4-	 	-			$\sqcup \bot$		+-+		1		-		
3	109-99-9	Tetrahydrofuran	<u>_</u>	4	1 1	A			_		1			-			\sqcup					ļ	ļ		
2	108-88-3	toluene(10xblk)		0.40			1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	_	-	-	-	1	-		-					-	<u> </u>			
1	156-60-5	trans-1,2-Dichloroethene	V,				V	1	_	1/	-		1	_									-		
2		trans-1,3-Dichloropropene		0.10			V	V/		V				-					1	_			<u> </u>		
3	110-57-6	trans-1,4-dichloro-2-Butene	V			/	/		_	32		4	1./	-	_		/_	1./-	$\bot \lor \!\!\!\! /$	 		<u> </u>	1/_		
1	79-01-6	Trichloroethene	1	0.30		/	0.28	V		<u> </u>		<u> </u>	1				_ <u>V</u>	1 4	1 1				V		

Volatile Orga	nics														Page 3	of 3
Site/Project:		AR/COC #:	610	839		Bat	ch #s:									
Laboratory:		Laboratory Repo	rt #:	1747	28	# o	f Samp	oles:		 	Matrix	:				
		T Min.	Calib. RF	Calib. RSD/	CCV %D	Method		1.000	LCS	 	MS	Field	Equip.	Trip		

ıs	CAS#	Name	T C	Min. RF	Intercept	Calib. RF	Calib. RSD/ R ²	CCV %D	Method Blks	LCS	LCSD	LCS RPD	MS	MSD	MS RPD	Field Dup.	Equip. Blanks	Trip Blanks	
			L			>.05	<20% / 0.99	20%		. ,						RPD			
1	75-69-4	Trichlorofluoromethane	V		NA	✓	√	V	\checkmark	V			V	V	V			V	
1		Trichlorotrifluoroethane													1				
1,	76-13-1	(Freon 113)	L													`	\		
1	108-05-4	Vinyl Acetate	\checkmark			\checkmark	✓,												/
1	75-01-4	vinyl chloride	V,	0.10		√	V ,	/	<i>i</i>					1	1				1
2	1330-20-7	xylenes(total)	V	0.30	V	V	V	V	V	V			V	W	V			V	

Comments:

Notes: Shaded rows are RCRA compounds.

Surrogate Recovery and Internal Standard Outliers (SW 846 Method 8260)

Sample	SMC 1	SMC 2	SMC 3	IS 1 area	IS 1 RT	IS 2 area	IS 2 RT	IS 3 area	IS 3 RT
	Met			·	Met	-			
	Cu	teria	·		C	riteria			

SMC 1: Bromofluorobenzene

IS 1: Fluorobenzene

Comments:

SMC 2: Dibromofluoromethane

IS 2: Chlorobenzene-d5

SMC 3: Toluene-d8

IS 3: 1,4-Dichlorobenzene-d4

Inorg	anic	Me	tals
morg	Jaiiic	1116	wis

Site/Project: CWL GWM AR/COC#: 6/0839	Laboratory Sample IDs:
Laboratory: GEL Laboratory Report #: 174728	
Methods: EPAGO20 (ICP-MS), EPA7470A (CVAAHg)	
	Batch #s: _ 582602, 582975

040#/		QC Element																			
CAS #/ Analyte	TAL	ICV	ccv	ICB	ССВ	Method Blanks	LCS	LCSD	,	LCSD RPD	MS	MSD	MSD RPD	Rep. RPD	ICS AB	Serial Dilu- tion	Field Dup. RPD	Equip. Blanks	Field Blanks		
7429-90-5 Al	,	-						NA		NA		NA	NA								
7440-39-3 Ba	\checkmark	\checkmark	\checkmark	\checkmark	✓ .	✓	V	1			_			/		V					
7440-41-7 Be	√.	\checkmark	√ ,	V	V	V	√ ,				\checkmark			/	1	V	1				
7440-43-9 Cd	\checkmark	V	V		V	V	V														
7440-70-2 Ca																				1	
7440-47-3 Cr	7	V	V	V	V		/		Т		V				V	V					
7440-48-4 Co	/	V.	7	V.			/				\checkmark					V				1	
7440-50-8 Cu		7.	7,	V	V		V.				V			/	/	/	· · · · · ·				
7439-89-6 Fe	1		V	V	V		7		\neg					V		/	/			/	
7439-95-4 Mg	<u> </u>								\neg											```	
7439-96-5 Mn	ļ								\neg								1				
7440-02-0 Ni	7	V	7	/		\checkmark					1			1		V	1			1	
7440-09-7 K	,		,	· · · · · · · · · · · · · · · · · · ·													1			1	
7440-22-4 Ag	/	1	V								1				V		1			1	
7440-23-5 Na									_												
7440-31-5 Sn	/	1	/				1				1			1	1	1		\			
7440-62-2 V	V	1		1	7	/			\neg		1					1					
7440-66-6 Zn	1		1	1					\neg	_	1	1			17			1			1
	-	 		 		-			_					1				1			
7439-92-1 Pb	1./	1./	17		1/		1		一		17				1/	1./					1
7782-49-2 Se	1	17	1		V	1	1				1				V			1			1
7440-38-2 As	1	1					1		_		1							Ì			
7440-36-0 Sb	1.7	tž	1	0.00/09	0.00080	45 /	1	11	-		1		 		1/			\	0.00545		
7440-28-0 TI	17	 `/-	1 1/	1.00/01.	10.0000	/	17	1	,	- ,	1 /	1		17		17					
7110 20 0 11	+	 	 	 	<u> </u>	 	 	T 1	-	₩	 	1 1	1 1/	1		1		1			
7439-97-6 Hg	1	17	1	1	1	1 1	1	1//	P	NA	1	NA	NA	1	NA	NA		1			
		1	1						\top				1					1			1
Cyanide CN																					
									\perp									\			
																		,			\
																		`			, ·
																L					

Notes: Shaded rows are RCRA metals. Solids-to-aqueous conversion: mg/kg = \mug/g: [(\mug/g) x (sample mass {g} / sample vol. {ml}) x (1000 ml / 1 liter)] / Dilution Factor = \mug/l

Comments:

Reviewed By: Kwin A Lambert Date: 11-09-06

Contract Verification Review (CVR)

Project Leader	Freshour	Project Name	CWL GWM	Case No.	98036_10.11.01
AR/COC No.	610839	Analytical Lab	GEL	SDG No.	174728

In the tables below, mark any information that is missing or incorrect and give an explanation.

1.0 Analysis Request and Chain of Custody Record and Log-In Information

Line		Comp	lete?		Reso	olved?
No.	Item	Yes	No	If no, explain	Yes	No
1.1	All items on COC complete - data entry clerk initialed and dated	X				
1.2	Container type(s) correct for analyses requested	X				
1.3	Sample volume adequate for # and types of analyses requested	X				
1.4	Preservative correct for analyses requested	X				
1.5	Custody records continuous and complete	X				
1.6	Lab sample number(s) provided and SNL sample number(s) cross referenced and correct	X				
1.7	Date samples received	X				
1.8	Condition upon receipt information provided	X				

2.0 Analytical Laboratory Report

Line		Comp	lete?		Reso	lved?
No.	Item	Yes	No	If no, explain	Yes	No
2.1	Data reviewed, signature	X				
2.2	Method reference number(s) complete and correct	X				
2.3	QC analysis and acceptance limits provided (MB, LCS, Replicate)	X				
2.4	Matrix spike/matrix spike duplicate data provided (if requested)	X				
2.5	Detection limits provided; PQL and MDL (or IDL), MDA and Lc	X				
2.6	QC batch numbers provided	X				
2.7	Dilution factors provided and all dilution levels reported	X				
2.8	Data reported in appropriate units and using correct significant figures	X				
2.9	Radiochemistry analysis uncertainty (2 sigma error) and tracer recovery (if applicable) reported	N/A				
2.10	Narrative provided	X				
2.11	TAT met	X				
2.12	Hold times met	X				
2.13	Contractual qualifiers provided	X				
2.14	All requested result and TIC (if requested) data provided	X				

Contract Verification Review (Continued)

3.0 Data Quality Evaluation

3.0 Data Quality Evaluation			
Item	Yes	No	If no, Sample ID No./Fraction(s) and Analysis
3.1 Are reporting units appropriate for the matrix and meet contract specified or project- specific requirements? Inorganics and metals reported as ppm (mg/liter or mg/kg)? Tritium reported in picocuries per liter with percent moisture for soil samples? Units consistent between QC samples and sample data	×		
3.2 Quantitation limit met for all samples	X		
3.3 Accuracy a) Laboratory control samples accuracy reported and met for all samples		Х	VOC LC5 recovery failed for Acrolein
 b) Surrogate data reported and met for all organic samples analyzed by a gas chromatography technique 	X		
c) Matrix spike recovery data reported and met	X		
3.4 Precision a) Replicate sample precision reported and met for all inorganic and radiochemistry samples	Х		
b) Matrix spike duplicate RPD data reported and met for all organic samples	X		
3.5 Blank data a) Method or reagent blank data reported and met for all samples		X	1,2,4-Trichlorobenzene, Carbon disulfide detected in VOC Method Blank
b) Sampling blank (e.g., field, trip, and equipment) data reported and met	Х		
3.6 Contractual qualifiers provided: "J"- estimated quantity; "B"-analyte found in method blank above the MDL for organic or above the PQL for inorganic; "U"- analyte undetected (results are below the MDL, IDL, or MDA (radiochemical)); "H"-analysis done beyond the holding time	×		
3.7 Narrative addresses planchet flaming for gross alpha/beta	N/A		
3.8 Narrative included, correct, and complete	×		
3.9 Second column confirmation data provided for methods 8330 (high explosives) and 8082 (pesticides/PCBs)	N/A		

ARCOC: 610839

Contract Verification Review (Continued)

4.0 Calibration and Validation Documentation

	Item	Yes	No	Comments
4.1 GC	/MS (8260, 8270, etc.)	·		
a)	12-hour tune check provided	X		
b)	Initial calibration provided	×		
c)	Continuing calibration provided	X		
d)	Internal standard performance data provided	Х	-	
e)	Instrument run logs provided	×		
4.2 GC	7/HPLC (8330 and 8010 and 8082)			
a)	Initial calibration provided	N/A		
b)	Continuing calibration provided	N/A		· · · · · · · · · · · · · · · · · · ·
c)	Instrument run logs provided	N/A		
4.3 In	organics (metals)			
•	Initial calibration provided	×		
b)	Continuing calibration provided	X		
c)	ICP interference check sample data provided	X		
d)	ICP serial dilution provided	X		
e)	Instrument run logs provided	X		
4.4 Ro	diochemistry			
a)	Instrument run logs provided	N/A		

Contract Verification Review (Concluded)

5.0 Problem Resolution

Summarize the findings in the table below. List only samples/fractions for which deficiencies have been noted.

Sample/Fraction No.	Analysis	Problems/Comments/Resolutions
·		
Were deficiencies unresolved? Based on the review, this data package is confirmate report or confirmance report or confirmance.	omplete. Yes No	and date correction request was submitted
		11/08/06 Closed by: Date:
	Date:	

Sample Findings Summary

Site: CWL Assessment GWM

AR/COC: 610838, 610840, 610841, 610842, 610843 Data Type: Organic & Inorganic

	Т													<u> </u>
	VOC	75-15-0 (carbon disulfide)	ICP-MS metals	7440-43-9 (cadmium)	7440-47-3 (chromium)	7440-66-6 (zinc)	7439-92-1 (lead)	7440-36-0 (antimony)						
		1000												
083047-001 CWL-MW5U		J,A,A2	\dashv		180			100					 	
083046-009 CWL-MW5U	-		\vdash		J,B2			J,B3					 	
083047-009 CWL-MW5U	+		-	1.00	J,B2	150	100	J,B3				<u> </u>	 	
083053-009 CWL-MW4	-		Н	J,B3		J,B2	J,B2				ļ	<u> </u>	 	
083054-009 CWL-MW4	+-		\vdash	J,B3		J,B2					<u> </u>		 	
	+-		-								ļ	<u> </u>	 	
	_		Н		<u> </u>						ļ	<u> </u>		
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											L			

Validated By: Kwin A Lambert

Kevin A. Lambert

Date: 11/09/06



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

CHENT ASSOCIATES

Memorandum

Date:

November 9, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation – SNL

Site: CWL Assessment GWM

AR/COC: 610838, 610840, 610841, 610842, and 610843

SDG: 174231 Laboratory: GEL

Project/Task: 98036.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA6020 (ICP-MS metals) and EPA7470A (CVAA mercury). Problems were identified with the data package that result in the qualification of data.

1. ICP-MS metals:

The following target analytes were detected (> DL) in one or more of the blanks (ICB, CCB, MB, EB). The associated sample results are qualified as noted below.

Samples 174231-005

Cr was a detect <5X the EB and should be qualified "J, B2."

and -006

Sb was a detect <5X the ICB/CCB and should be qualified "J, B3."

Sample 174231-011

Pb and Zn were detects <5X the EB and should be qualified "J, B2."

Cd was a detect <5X the ICB/CCB and should be qualified "J, B3."

Sample 174231-012

Zn was a detect <5X the EB and should be qualified "J, B2."

Cd was a detect <5X the ICB/CCB and should be qualified "J, B3."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section and as follows.

ICP-MS metals:

Cu and V were detected (\geq DL) in one or more of the blanks (ICB, CCB, MB, EB). The associated sample results were non-detects or detects >5X the blank concentrations; no data should be qualified as a result.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

ICP-MS metals and CVAA mercury:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

ICP Serial Dilution

The serial dilution met QC acceptance criteria.

ICP Interference Check Sample (ICS)

The ICS data met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

ICP-MS metals and CVAA mercury:

EBs and field duplicate pairs were submitted on the AR/COC(s). There are no "required" review criteria for field duplicate analyses comparability; no data should be qualified as a result. Also, it should be noted that the EB associated with SNL samples on ARCOC# 610838 were submitted in another SDG on ARCOC# 610837.

No other specific issues were identified which affect data quality.



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744

Jerfly Abrodiktes. Int.

Email: minteer@aol.com

Memorandum

Date:

November 9, 2006

To:

File

From:

Kevin Lambert

Subject:

Organic Data Review and Validation - SNL

Site: CWL Assessment GWM

AR/COC: 610838, 610840, 610841, 610842, and 610843

SDG: 174231 Laboratory: GEL

Project/Task: 98036.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

All samples were prepared and analyzed with accepted procedures using method EPA8260B (VOC). All compounds were successfully analyzed. Problems were identified with the data package that result in the qualification of data.

1. VOC:

The LCS recovery for carbon disulfide (144%) was > the upper QC acceptance limit (129%). Also, the MS and MSD recovery for carbon disulfide (147% and 134%) were > the upper QC acceptance limit (130%). The associated sample results that were non-detects should not be qualified and detects should be qualified "J, A, A2."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times

All samples were extracted and analyzed within the prescribed holding times and properly preserved.

Calibration

The initial calibration and continuing calibration data met QC acceptance criteria except as follows.

VOC:

The calibration response factor (RF) for acetonitrile (0.04), isobutyl alcohol (0.01), and trichloroethene (0.21) was < the specified minimum RF (0.05, 0.05, and 0.30, respectively). No data should be qualified based on professional judgment. The continuing calibration verification percent

difference (CCV %D) for bis(2-chloroisopropyl)ether (-23%), carbon disulfide (-24%), and trans-1,4-dichloro-2-butene (28%) was > 20% but $\le 40\%$ (see Volatile Organics Worksheet). The associated sample results were non-detects and as a result based on professional judgment no data should be qualified.

Blanks

No target analytes were detected in the blanks except as follows.

VOC:

Bromodichloromethane and dibromochloromethane were detected (\geq DL) in the equipment blank. The associated sample results were non-detects; no data should be qualified as a result.

Internal Standards (ISs)

Internal standards data met QC acceptance criteria.

Surrogates

The surrogate recoveries met QC acceptance criteria.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

The LCS/LCSD met QC acceptance criteria except noted above in the summary section and as follows.

VOC:

It should be noted that no LCSD was provided with the SDG. Laboratory precision was assessed using the MS/MSD. No data should be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD met OC acceptance criteria except noted above in the summary section and as follows.

VOC:

The MS recovery for bromomethane (131%) was > the upper QC acceptance limit (130%). The associated sample results were non-detects; no data should be qualified as a result.

Target Compound Identification/Confirmation

No target compound identification/confirmation analyses were required.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No trip blank (TB), equipment blank (EB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

VOC:

TBs, EBs, and field duplicate pairs were submitted on the AR/COC(s). There are no "required" review criteria for field duplicate analyses comparability; no data should be qualified as a result. Also, it should be noted that the EB associated with SNL samples on ARCOC# 610838 were submitted in another SDG on ARCOC# 610837.

No other specific issues were identified which affect data quality.

Data Validation Summary

Site/Project:	: CWL GWM	Project/Task #: 98036.10.11.01	# of Samples:	Matrix:	agueous	
	610838,610840,610841,		Laboratory Sample IDs:	174231-00	1 to-019	
	17-KAL GEL	,				
SDG#:	174231					

	-				Analy	rsis				
QC Element		Orga	anics		1915	Inorg	anics			
	VOC	SVOC	Pesticide/ PCB	HPLC (HE)	ICP/AESK	LGFAA/ AA	CVAA (Hg)	CN	RAD	Other
1. Holding Times/Preservation	✓				· 🗸		\			
2. Calibrations	/		·	-	J		✓			
3. Method Blanks	/				1		>			
4. MS/MSD	丁 「				✓		✓			
5. Laboratory Control Samples	ナ				✓		>			
6. Replicates	NA				✓		✓			
7. Surrogates	✓				NA		NA			
8. Internal Standards	√				NA					
9. TCL Compound Identification	/				NA					
10. ICP Interference Check Sample	NA						·			
11. ICP Serial Dilution	NA									
12. Carrier/Chemical Tracer Recoveries	NA				NA		1			
13. Other QC TB, EB, Flup	V				J		$\sqrt{}$			
= Fetimoted	R = Unusah	1.		NP	= Not Provi	dad				

J =	Estimated	K = Unusa	Die	NP	- Not Flovided	•		
U =	Not Detected	Check (√)	= Acceptable	Other:		11	- 11	
UJ =	Not Detected, Estimated	Shaded Cells	Not Applicable (also "NA")		Reviewed By:	Leven A	rambert Date:	11-09-06

Methods: <u>EPA8260B(Voc)</u>
Batch #s: <u>581875</u>

ıs	CAS#	Name	TCL	Min. RF	inter	rcept	Calib. RF	Calib. RSD/ R ² <20%/ 0.99	CC % 20	D	Meth Blks		LCS	LCSD	LCS RPD	MS	MSD	MS RPD	Field Dup. RPD	Equip. Blanks	Trip Blanks	Field BIK	
2	630-20-6	1,1,1,2-Tetrachloroethane	V		N	A		<i>V.</i>	ramunomia V	7	LIBERCE BUILDING		$\sqrt{}$	and the second			V	1		· /			the state of the s
		1,1,1-Trichlorogthane	1	0.10			V.	V.			1		1	\		1	1	1	1	1	1		
		1,1,2,2-Tetrachloroethane	V	11,,511			V	V.															
		1,1,2-Trichloroothane	17	0.10			V	V				1		1									
		1,1-Dichloroethane	V.	0.10			V.	$\overline{}$															
		1,1-Dichloroethenc	1	0.20				$\overline{\vee}$															
		1,1-Dichoropropene	-	1				***************************************															
		1,2,3-Trichlorobenzene	1	1	1									1			1						
	96-18-4	1.2.3-Trichloropropane	1	1	1		1	V.															
	120-82-1	1,2,4-Trichlorobenzene	V	-				1						1									
	95-63-6	1,2,4-Trimethylbeazene	-		1																		
		1,2-Dibromo-3-	7		1	1	/	\vee															
3	96-12-8	chloropropane	V	.i			V	V													L		
2	106-93-4	1,2-Dibromouthane (EDB)	7				✓	$\overline{}$															
3	95-50-1	1,2-Dichlorobenzene			T		,																
1	107-06-2	1,2-Dichloroethane		0.10			✓.	\															
1	78-87-5	1,2-Dichloropropane	1	0.01			\checkmark	$\overline{}$															
3	108-67-8	1,3,5-Trimethylhenzene																					
3	541-73-1	1,3-Dichlorobenzene																					
2	142-28-9	1,3-Dichloropropase		0.01																			
3	106-46-7	1,4-Dichlorobenzene																					
	107-04-0	1-Bromo-2-chloroethane		1																			
1	594-20-7	2,2-Dichloropropane		1																			
,		2-Butanone (MEK)	1/	0.01			✓	\							1								
1	78-93-3	(10xblk)	V	0.01			V	· · · · · · · · · · · · · · · · · · ·											<u> </u>	<u> </u>			
1	126-99-8	2-Chloro-1, 3-butadiene	V	:			✓	✓							<u> </u>								
	110-75-8	2-Chloroethyl vinyl ether													1								
	95-49-8	2-Chlorotoluene																					
	591-78-6	2-Hexanone (MBK)	✓	0.01				V													 		
	106-43-4	4-Chlorotoluene																		 			
3	99-87-6	4-Isopropyltoluene	1	<u></u>							ļ												
2	108-10-1	4-Methyl-2-pentanone (MIBK)	1	0.10	1	/	√	√															
1	67-64-1	acetone(1((xbll))	7	0.01		7	V	V.							1								
	75-05-8	Acetonitrile	7		1	VA	0.04	V							1								
	107-02-8	Acrolein	7	-	1	1	7.	V ,				•			1		T		T				
ī	107-13-1	Acrylonitrile	1	,	1	1	V.	1							1								
1	107-05-1	Allyl chloride	7	,		1/	V.	V		41.414		1	1,				1		1.//	1.//			
1	71-43-2	Benzene	V	,0.50	1	V	1	V	1	/	V		V			1	V	W	W	A	V	TW	

610838,610840,610841 AR/COC#: 610842,610843 Batch #s:

Page 2 of 3

Site/Project:	
Dittor roject.	

Laboratory:

Laboratory Report #: 174231

of Samples: ____

Matrix:

ıs	CAS#	Name	TCL	Min. RF	Inte	rcept		Calib. RSD/ R ² <20%/	СС %	D	Method Blks	LCS	LCSD	LCS RPD	MS	мѕ	D	MS RPD	Field Dup. RPD	Equip. Blanks	Trip Blank		Field Blk	
			L		_	,	>.05	0.99	20		<u> </u>			<u> </u>	<u></u>	٠,	,				ļ.,			
		Bromobenzene	⊢	ļ	\perp	√ <i>A</i>					<u></u>	V	 	ļ	I V	1 4		V	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V	 			4
		Bromochloromethane	 - 		—			/	\longrightarrow				 		1-1-		-			0.3275	+			
	,	Bromodichloromethane	1	0.20	-		-					₩	 	 	$+ \downarrow -$		-		\vdash		+			
		Bromoform	1	 	-		~ / _		1	/			├──			120	\vdash			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	+		$-\!$	
		Bromomethane		0.10	1		V	V/				₩	 	ļ	131		/-				+	\rightarrow		1
		bis(2-Chloroisopropyl)ether	14	 	1				-2	2	×		lah \	<u> </u>	\ <u>\</u>	100					+			H
		Carbon disulfide		0.10	1		L-V,		-2	4*		144(124)		1970	130)13	54				+	\rightarrow		
		Carbon tetrachloride		0.10	1				<u>`</u>			 Y -		 	<u>'</u>	<u> </u>					+-+			├ ┤──┦
		Chlorobenzene		0.50	1			-							 -	+-			├	 	+			
\rightarrow		Chloroethane		0.01	\vdash		V/					\vdash		-							+	\rightarrow		
		Chloroform		0.20	├ ─┤		V /	V/				₩		 					₩-					+
		Chloromethane	V	0.10	₩							₩-		ļ	 \-	-		_	 	 	+	-+		
1		cis-1,2-Dichloroethene	 		₩		<i> </i>	$-\sqrt{-1}$	<u> </u>			Н-	 	 	 	++		-			+			
1		cis-1,3-Dichloropropene		0.20	+-+			\				┼-┼	\vdash	 		+	-	+-		0.5565/0.5	*			
2		Dibromochloromethane		0.10	+-+		\ \frac{1}{2}			-		┼┼		├	 -	-	-			V.3963/0.5	,000	\rightarrow		
		Dibromomethane	V	 			V,		—	┼							-		 	<u> </u>	++	\rightarrow		
		Dichlorodifluoromethane	-	├	₩		- / - 	- 		-		$\vdash\vdash$		 	-		-	+		 	+	\rightarrow		
		Ethyl methacrylate	14	0.10	₩								 	 	 		-				+-+			-
		Ethylbenzene	<u> </u>	0.10	\vdash		_	V				\vdash	ļ		\vdash		- -				+	-+		
	0.00	Hexachlorobutadiene	₩	4	₩			-		-				 	 		\vdash			 	+			
1_		Iodomethane	V	4	++			<u> </u>		\vdash					+-+		-		├-		++	-+		
		Isobutyl alcohol	V	 	++		0.01	- 		-				 	 	-	₩				+	-		
1		Methyl methacrylate	₩	ļ	╁╁		<u> </u>	<u> </u>		-		┿	├──	 	╂┼-		\vdash		₩	 	+			
ļ	126-98-7	Methylacrylonitrile			 	/		V/-	-	\vdash		┼-		 	+	+	\vdash			 	+	-+		
		Methylene chloride (10xblk)	╨	0.01	 '	<u> </u>	<u> </u>	_		-			 	 	 		\vdash	-			++			
		Naphthalene	⊬	 	├	A			 	-		┢┿	├	₩	 	-	\vdash				+			
3		n-Butylbenzene	╁-	 	┼─	+						₩-	 	┼	 		-		 -		+-+	-		
3		n-Propylbenzene	⊢	+	+	+				-		┼-┼-		 	1	-	╁				+			
2		o-Xylene	\forall	₩	+	+	 	 		-		+-	 	 	+	-	╁┼			 	+-+	-+		-
ļ		Pentachloroethane	₩		+	┼	 		\vdash	-		+	 	 	1	-	++	_	- - - - - - - - - - 		+			
1		Propionitrile	⊬	 	┼	 	 		 	┼─		 - 		 	+				 		+	-		
3		sec-Butylbenzene	₩	0.30	+	 	 		_	-		 		 	 	+	+-+		 		+-+	-+		
2		Styrene	⊬	0.30	┼─	\vdash	<u> </u>		_	 		\vdash		 \-	+-+-	+	++		 	 	+	-+		
3_		tert-Butylbenzene	1.7	0.20	+-	-		/	\vdash			++-		1-1-	+	+	+-		1		+			
2		Tetrachloroethene	⊬	0.20	+-	+	 `					+	 	 	 	+	+-+	+	1	-	+	-+		
3	109-99-9	Tetrahydrofuran	╁	0.40	+-	+	17/	/	 			\vdash		1	+		+-		2.8.		+	-+	_	
2	108-88-3	toluene(10xblk) trans-1,2-Dichloroethene	∀		-	-	 	- '/	 			\vdash	\vdash	 	++	+	+	+	2.3		+	-+	-	
1	156-60-5			0.10	+	-	 `	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\downarrow	/ **	E	 	 	1	+	+	 	+	1		+	-+		
2	10061-02-6	trans-1,4-dichloro-2-Butene	₩	10.10	+-	 	- `/-		2	8		 -			1	+	 	1,	-/-	 	+			
3	110-57-6	Trichloroethene	+*	0.30	+	/	0.21	 	<u> </u>	0	 	1-1/-	 	 	1-1/-	+-,	/- -	\forall	1.7		 	-+	1/	I
1	79-01-6	1 richioroethene	$\mathbf{I}_{\mathbf{\Lambda}}$	10.50	$oldsymbol{L}^{oldsymbol{V}}$		Uidl	_ v			<u> </u>	I W	1		1 V	1 1		V	IIT	L V			Ψ	

* applies to -008 \$ -009

** applies to -001 \$ -002

* ** applies to -013, -014, -016, -017, -018

Volatile	Organ	nics
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610835,610840,610841

Page 3 of 3

• •		3	670 035, 670 070,670 071								6									
Site	Project:		_	AR/CC	OC #:	6108	42,6	1084	<u>′3</u> Ba	tch #s:										
Lab	ratory:		1	Labora	tory Repo	rt#: <u>/</u> 7	14231		# 0	of Samp	oles:				Маттіх	:				
ıs	CAS#	Name	TC	Min. RF	Intercept	Calib. RF	Calib. RSD/ R ²	CCV %D	Method Blks	LCS	LCSD	LCS	MS	MSD	MS	Field Dup. RPD	Equip. Blanks	Trip Blanks	Field BIK	
			L	KF		>.05	<20% / 0.99	20%	BIKS			RPD			KPU	RPD	Dianks	Dianks	10112	
ī	75-69-4	Trichlorofluoromethane			NA		✓	✓				l	\checkmark	V	V	√	✓	V		\
1	76-13-1	Trichlorotrifluoroethane (Freon 113)					,													
1	108-05-4	Vinyl Acetate	$\neg \checkmark$				V											- 1		
1	75-01-4	vinyl chloride		0.10		I	V						1/	1/	1	1/_				
2	1330-20-7	xylenes(total)		0.30		V	✓	V		IV			V			W	V	V	W	

Comments:

Notes: Shaded rows are RCRA compounds.

Surrogate Recovery and Internal Standard Outliers (SW 846 Method 8260)

Sample	SMC 1	SMC 2	SMC 3	IS 1 area	IS 1 RT	IS 2 area	IS 2 RT	IS 3 area	IS 3 RT
	Met				Met				
	Crite	ia			Crite	ria			

SMC 1: Bromofluorobenzene

IS 1: Fluorobenzene

Comments:

SMC 2: Dibromofluoromethane

ne IS 2: Chlorobenzene-d5

IS 3: 1,4-Dichlorobenzene-d4

SMC 3: Toluene-d8

Inorganic Metals 610838,610840,610841 AR/COC#: 6/0842, 6/0843 Laboratory Sample IDs: 174231-005 to -007, -011,-012,-015,-019 Site/Project: CWL GWM Laboratory Report #: 174231 Laboratory: 6EL Methods: EPAGO20 (ICP-MS), EPA7470A (CVAA HS) Batch #s: 581588, 582273 Matrix: aaneon

040#/											QC E	Eleme	nt					W		**	*	*
CAS #/ Analyte	TAL	ICV	ccv	ІСВ	ССВ	Method Blanks	LCS	LC	SD	LCSD RPD	MS	MSD	M: RI		Rep. RPD	ICS AB	Serial Dilu- tion	Field Dup. RPD	Equip. Blanks	Eg Field Z Blanks	L Dup RPD	15x
7429-90-5 Al								N	A	NA		NA	N	A								
7440-39-3 Ba	V	V	✓	V		✓	V									\	✓	1,9	V	V	2.0	
7440-41-7 Be	V	V.	✓	V,	/		\				V				>	√	V		V	V	V	
7440-43-9 Cd	$\sqrt{}$	V	1	/	0.00010	រា 🗸	V								V	V	V	\	V	✓	V	0,00053
7440-70-2 Ca																						
7440-47-3 Cr		V	V .	~	/	/	V				V				✓	V		4.0	0.002073	V	4.0	0.0104
7440-48-4 Co	7	V	1	~	~	V	~				1		T		\checkmark	/	V	$\overline{}$	V	/	6.0	
7440-50-8 Cu	7	1	1	1	~		V				V,					V	V	5.5	V	0.000,245		0.0012
7439-89-6 Fe	7	1		1	~			П			17		T			$\overline{}$	1	3.1	V	~	4.3	
7439-95-4 Mg	<u> </u>		-										\Box									
7439-96-5 Mn																						
7440-02-0 Ni	1	1	7		7						1					V		1.7	V		6.5	
7440-09-7 K																						
7440-22-4 Ag	7	V	7	7		/					V				V	\vee	V		V	V	V	
7440-23-5 Na				1							1		1									
7440-31-5 Sn		V	1	V	7	1/	/				1		1		V	V	V.	/	V	V	V	
7440-62-2 V	1	1	./	7	1	/	1				1				V		V		0.00388]	V	V	0.0194
7440-66-6 Zn	1	1	7		1	/	7				1					/	\checkmark	1.1.	0.002073	0.00385	18 1	0,0104/0.
	1										1											7
7439-92-1 Pb	V	V	V		7	/	7.				1					\checkmark	V	/	V	0.000527	V	0.0026
7782-49-2 Se	1	1	7		V	V	V				1					V	V		V	V	V.	
7440-38-2 As	V	7			1	✓					1				<i>\oldsymbol{\chi}</i> .	V,	V.	\checkmark	V	V		
7440-36-0 Sb	V	1	V .	0.001043	0.00175		V				V					J,	V.	<i>\infty</i> ,	V_{I}	V		0.00875
7440-28-0 TI	$\overline{}$	V	V			V	V		/		/			/			V		V	V		
	,	,						V		V		I V _	1	L								
7439-97-6 Hg	V	\vee	V	/	V	V	V	N	A	NA	V	NA	N	A	V	NA	NA		V	V	V	
Cyanide CN	-							-														
													_									ļ
													-						 			
	 			-				-			+	 	+						· · · · · · · · · · · · · · · · · · ·		 	

Notes: Shaded rows are RCRA metals. Solids-to-aqueous conversion: mg/kg = \mu g/g: [(\mu g/g) x (sample mass \{g\} / sample vol. \{ml\}) x (1000 ml/1 liter)]/Dilution Factor = \mu g/1

Comments: # applies to -005 \(\psi -006 \) ## applies to -01/\(\psi -012 \)

Reviewed By: Kwin A vamber Date: 11-09-06

Contract Verification Review (CVR)

Project Leader	Freshour	Project Name	CWL GWM	Case No.	8036_10.11.01
AR/COC No.	610838, 610840, 610841, 610842, 610843	Analytical Lab	GEL	SDG No.	174231
	0100 12, 0100 10				

In the tables below, mark any information that is missing or incorrect and give an explanation.

1.0 Analysis Request and Chain of Custody Record and Log-In Information

Line		Comp	lete?		Reso	lved?
No.	Item	Yes	No	If no, explain	Yes	No
1.1	All items on COC complete - data entry clerk initialed and dated	X				
1.2	Container type(s) correct for analyses requested	X				
1.3	Sample volume adequate for # and types of analyses requested	X				
1.4	Preservative correct for analyses requested	X				
1.5	Custody records continuous and complete	X				
1.6	Lab sample number(s) provided and SNL sample number(s) cross referenced	X				
	and correct					
1.7	Date samples received	X				
1.8	Condition upon receipt information provided	X				

2.0 Analytical Laboratory Report

Line		Comp	lete?		Reso	olved?
No.	Item	Yes	No	If no, explain	Yes	No
2.1	Data reviewed, signature	Х				
2.2	Method reference number(s) complete and correct	Х				
2.3	QC analysis and acceptance limits provided (MB, LC5, Replicate)	Х		·		
2.4	Matrix spike/matrix spike duplicate data provided (if requested)	X				
2.5	Detection limits provided; PQL and MDL (or IDL), MDA and Lc	Х				
2.6	QC batch numbers provided	Х				
2.7	Dilution factors provided and all dilution levels reported	Х				
2.8	Data reported in appropriate units and using correct significant figures	Х				
2.9	Radiochemistry analysis uncertainty (2 sigma error) and tracer recovery (if applicable) reported	N/A				
2.10	Narrative provided	Х				
2.11	TAT met	Х				
2.12	Hold times met	X				
2.13	Contractual qualifiers provided	X				
2.14	All requested result and TIC (if requested) data provided	X				

ARCOC: 610838, 610840., 610841, 610842, 610843

Contract Verification Review (Continued)

3.0 Data Quality Evaluation

Item	Yes	No	If no, Sample ID No./Fraction(s) and Analysis
3.1 Are reporting units appropriate for the matrix and meet contract specified or project-specific requirements? Inorganics and metals reported as ppm (mg/liter or mg/Kg)? Tritium reported in picocuries per liter with percent moisture for soil samples? Units consistent between QC samples and sample data	X		
3.2 Quantitation limit met for all samples	Х		
3.3 Accuracy a) Laboratory control samples accuracy reported and met for all samples		Х	VOC LC5 failed for Carbon Disulfide (QC1201213604)
 b) Surrogate data reported and met for all organic samples analyzed by a gas chromatography technique 	×		
c) Matrix spike recovery data reported and met		X	VOC M5 recovery failed for Carbon Disulfide and Bromomethane (QC1201213602)
3.4 Precision a) Replicate sample precision reported and met for all inorganic and radiochemistry samples	×		
b) Matrix spike duplicate RPD data reported and met for all organic samples	Х		
3.5 Blank data a) Method or reagent blank data reported and met for all samples	Х		
b) Sampling blank (e.g., field, trip, and equipment) data reported and met		X	Bromodichloromethane, Dibromochloromethane detected in EB2 (083051-001)
3.6 Contractual qualifiers provided: "J"- estimated quantity: "B"-analyte found in method blank above the MDL for organic or above the PQL for inorganic; "U"- analyte undetected (results are below the MDL, IDL, or MDA (radiochemical)); "H"-analysis done beyond the holding time	×		
3.7 Narrative addresses planchet flaming for gross alpha/beta	N/A		
3.8 Narrative included, correct, and complete	Х		
3.9 Second column confirmation data provided for methods 8330 (high explosives) and 8082 (pesticides/PCBs)	N/A		

Contract Verification Review (Continued)

4.0 Calibration and Validation Documentation

4.0 Calibration and Validation Documentation			
Item	Yes	No	Comments
4.1 GC/MS (8260, 8270, etc.)			
a) 12-hour tune check provided	×		
b) Initial calibration provided	X		
c) Continuing calibration provided	X	 	
d) Internal standard performance data provided	X		
,			
e) Instrument run logs provided	X		
, and an			
4.2 GC/HPLC (8330 and 8010 and 8082)			
a) Initial calibration provided	N/A		
s, zima caibi anon provides		1	
b) Continuing calibration provided	N/A		
by commany can be an one of			
c) Instrument run logs provided	N/A	-	
c) Than unless rain logs provided			
4.3 Inorganics (metals)			
a) Initial calibration provided	×		
a) Thirtai canbi ation provided			·
b) Continuing calibration provided	×		
	ļ		
c) ICP interference check sample data provided	X		
d) ICP serial dilution provided	×	1	
·			
e) Instrument run logs provided	Х		
4.4 Radiochemistry			
a) Instrument run logs provided	N/A		

Contract Verification Review (Concluded)

5.0 Problem Resolution

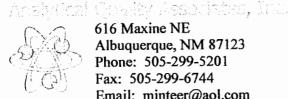
Summarize the findings in the table below. List only samples/fractions for which deficiencies have been noted.

Sample/Fraction No.	Analysis	Problems/Comments/Resolutions
,		
'ere deficiencies unresolved? Ye	s (No)	
ased on the review, this data package is a		
no, provide: nonconformance report or	correction request number _	and date correction request was submitted
viewed by:	Date:	11/07/06 Closed by:Date:

Site: CWL Assessment GV			AR/CO	C: 6108	33, 6108	334			Data T	ype: C	rganic	& Inorg	ganic	<u></u> <u></u> <u></u> <u></u>		
	VOC	67-64-1 (Acetone)	ICP-MS metals	7440-36-0 (Antimony)	7440-47-3 (Chromium)	7440-28-0 (Thallium)	7440-66-6 (Zinc)									
083035-001 CWL-MW2BL		5 UJ,B1														
083036-001 CWL-TB1	+	J J				·			-			 	-		-	
083037-001 CWL-BW4A	-	5 UJ	\vdash			 			-				 		-	_
083038-001 CWL-FB1	\dashv	J										<u> </u>				
083035-009 CWL-MW2BL				J,B,B3		J,B3	J,B		Г		<u> </u>					
083037-009 CWL-BW4A					J,B		J,B									
	-		_			ļ			_		<u> </u>		ļ	 		
						<u> </u>			<u> </u>		ļ	<u> </u>				
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	\dashv									-						
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Validated By: Kevin A. Lambert

Date: 10/26/06



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

October 26, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation - SNL

Site: CWL Assessment GWM AR/COC: 610833 and 610834

SDG: 173404 Laboratory: GEL

Project/Task: 98026.01.07

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA6020 (ICP-MS metals) and EPA7470A (CVAA mercury). Problems were identified with the data package that result in the qualification of data.

1. ICP-MS metals:

The following target analytes were detected (≥ DL) in one or more of the blanks (ICB, CCB, MB). The associated sample results are qualified as noted below.

Sample 173404-003

Zn was a detect <5X the MB and should be qualified "J, B."

Sb was a detect <5X the ICB/CCB/MB and should be qualified "J, B,

B3."

TI was a detect <5X the ICB/CCB and should be qualified "J, B3."

Sample 173404-007

Cr and Zn were detects <5X the MB and should be qualified "J, B."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section and as follows.

ICP-MS metals:

Fe was detected (\geq DL) in one or more of the blanks (ICB, CCB, MB). The associated sample results were detects >5X the blank concentration; no data should be qualified as a result.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

ICP-MS metals:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

ICP Serial Dilution

The serial dilution met QC acceptance criteria.

ICP Interference Check Sample (ICS)

The ICS data met QC acceptance criteria.

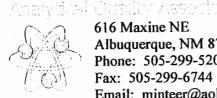
Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s).

No other specific issues were identified which affect data quality.



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

October 26, 2006

To:

File

From:

Kevin Lambert

Subject:

Organic Data Review and Validation - SNL

Site: CWL Assessment GWM AR/COC: 610833 and 610834

SDG: 173404 Laboratory: GEL

Project/Task: 98026.01.07

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

All samples were prepared and analyzed with accepted procedures using method EPA8260B (VOC). All compounds were successfully analyzed. Problems were identified with the data package that result in the qualification of data.

1. **VOC**:

The continuing calibration verification percent difference (CCV %D) for acetone (-24%) was > 20% but < 40%. The associated sample results that were non-detects should not be qualified based on professional judgment and detects should be qualified "J."

Also, acetone was detected (> DL) in one or more of the blanks. The associated sample results that were non-detects should not be qualified and detects <10X the blank concentrations and < the RL should be qualified "U" at the RL (5 ug/L) with the appropriate descriptive flag. However, it should be noted that the associated sample results have already been qualified due to a calibration problem and, thus will be qualified "UJ."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times

All samples were extracted and analyzed within the prescribed holding times and properly preserved.

Calibration

The initial calibration and continuing calibration data met QC acceptance criteria except as noted above in the summary section and as follows.

VOC:

The calibration response factor (RF) for isobutyl alcohol (0.02) and trichloroethene (0.27) was < the specified minimum RF (0.05 and 0.30, respectively). No data should be qualified based on professional judgment. The CCV %D for seven target analytes were > 20% but \leq 40% (see Data Validation Worksheet). The associated sample results were non-detects and as a result based on professional judgment no data should be qualified.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section and as follows.

VOC:

1,2,4-Trichlorobenzene was detected (≥ DL) in the method blank. The associated sample results were non-detects; no data should be qualified as a result.

Internal Standards (ISs)

Internal standards data met QC acceptance criteria.

Surrogates

The surrogate recoveries met QC acceptance criteria.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

VOC:

It should be noted that no LCSD was provided with the SDG. Laboratory precision was assessed using the MS/MSD. No data should be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD met QC acceptance criteria.

Target Compound Identification/Confirmation

No target compound identification/confirmation analyses were required.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No trip blank (TB), equipment blank (EB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

VOC:

TBs, and a FB were submitted on the AR/COC(s).

Data Validation Summary

Site/Project: <u>CWL Assess GWM</u> Project/Task #: <u>98026, 01, 07</u>	# of Samples: Matrix: agueous
AR/COC#: 610833, 610834	Laboratory Sample IDs: 173404-001,-002,-004,-005,-006
Laboratory: GEL	
SDG#: / 73404	

					Analy	/sis				
QC Element		Orga	anics			Inorg	anics			
	VOC	SVOC	Pesticide/ PCB	HPLC (HE)	ICP/AES	A GFAA/	CVAA (Hg)	CN	RAD	Other
1. Holding Times/Preservation	1				✓		✓			
2. Calibrations	ゴ				J	\	✓			
3. Method Blanks	~			. ,	T		. 🗸			
4. MS/MSD	✓				/		✓			
5. Laboratory Control Samples	1				√		. 🗸 .			
6. Replicates		·			V		✓			
7. Surrogates	✓				:					
8. Internal Standards	√									
9. TCL Compound Identification	/									
10. ICP Interference Check Sample			:		√					
11. ICP Serial Dilution					√					
12. Carrier/Chemical Tracer Recoveries					·					
13. Other QC TBIFB	UJ				NA		NA			
= Estimated	R = Unusal	nle		NP	= Not Provi	ided				

, -	Estimated	R - Uliusable	NP - Not Provided
U =	Not Detected	Check $()$ = Acceptable	Other:
UJ =	Not Detected, Estimated	Shaded Cells = Not Applicable (also "NA")	Reviewed By: Lowin A Lambert Date: 10-26-06

Volatile Organics (SW 846 Method 8260)

Page 1 of 3

Site/Project: CWL ASSESS GWM) AR/COC#: 610833, 610834	# of Samples: 5 Matrix: agricous
Laboratory: <u>GEL</u> Laboratory Report #: <u>173404</u>	Laboratory Sample IDs: 173404-001,-002,-004,-005,-006
Methods: <u>EPA8260B(VOC)</u>	Batch #s: 578304

ıs	CAS#	Name	TCL	Min. RF	intercep		Calib. RSD/ R ² <20%/	CC %[Method Blks	LCS	LCSD	LCS RPD	MS	MSD	MS RPD	Fie Du RF	ıp. 🕆	Trip* Equip.K Blanks	た Trip Blanks	ſ	eld 31k	10x 131K
			L			>.05	0.99	20%	%										-002	-006	1	003	
		1,1,1,2-Tetrachloroethane	V		NA	V	V,	✓		\checkmark	V				V	I V	IN	A	\checkmark	/		V	
		1.1,1-Trichloroethane		0.10		✓	✓					1			1					1			
3	79-34-5	1,1,2,2-Tetrachloroethane		0.30		\\ \/_	V.																
2	79-00-5	1,1,2-Trichloroethane		0.10		V.						1											
1	75-34-3	1,1-Dichloroethane		0.10		/	V ,					\											
1		1,1-Dichloroethene	✓	0.20		\	✓																
1	563-58-6	1,1-Dichoropropene				NA	NA																
	87-61-6	1,2,3-Trichlorobenzene KM				NA	NA			1													
3		1,2,3-Trichloropropane	V			/	V	V		V													
3		1,2,4-Trichlorobenzene	V			/	/	28	,	0.450 J													
3	95-63-6	1,2,4-Trimethylbenzene	L			NA	NA		<u> </u>														
3		1,2-Dibromo-3-	1	1		/	1	1									1						
	96-12-8	chloropropane	Ľ,	<u> </u>			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				\sqcup						\perp						
2	106-93-4	1,2-Dibromoethane (EDB)	1	1			V				$\bot \bot$						\perp	_					
3		1,2-Dichlorobenzene	↓			NA	NA				$\bot\bot$	1				$oxed{oxed}$	\sqcup	_					
1		1,2-Dichloroethane		0.10		V/	V/				Ш.					11	\perp	_					
1	78-87-5	1,2-Dichloropropane	1	0.01		 	/										$\perp \perp$						
3		1,3,5-Trimethylbenzene	╄	ļ		NA	NA				oxdot						\perp						
3	541-73-1	1,3-Dichlorobenzene	1_	<u> </u>				-									11	_					
2_	142-28-9	1,3-Dichloropropane	$oldsymbol{\perp}$	0.01							Ц_			<u> </u>			11						
3	106-46-7	1,4-Dichlorobenzene	1	↓							—		1			\bot	\perp						
	107-04-0	1-Bromo-2-chloroethane	↓_			1-1/-	 						<u> </u>				11	_				\longrightarrow	
1_	594-20-7	2,2-Dichloropropane	_	<u> </u>		V	V						11				\perp						
1	78-93-3	2-Butanone (MEK) (10xblk)	V	0.01		✓	✓																
1		2-Chloro-1, 3-butadiene	V			/	V																
1		2-Chloroethyl vinyl ether				NA	NA																
3	95-49-8	2-Chlorotoluene		,	V/	NA	NA																
2		2-Hexanone (MBK)	✓	0.01	✓	/	✓																
3		4-Chlorotoluene	┸		NA	NA	NA																
3	99-87-6	4-Isopropyltoluene	L		NA	NA	NA																
2	108-10-1	4-Methyl-2-pentanone (MIBK)	V	0.10		V,	17.		/ _	24									\bigvee			/	, .
1	67-64-1	acetone(10xblk)	V	0.01	NA	17	\ X	-2	4				1						1.485		2.	76J	14.8/27
1	75-05-8	Acetonitrile	1	, , , , , , , , ,		1	V.	-2											V		\	7	/
1	107-02-8	Acrolein	V			V.	V	V	/				1			Π							
1	107-13-1	Acrylonitrile	V.			V	√ ,																
1	107-05-1	Allyl chloride	V				V		/					./				_		/			
Ī	71-43-2	Benzene	1	0.50	TV	1		V	/	V	V			A	IV	TV	1	7	V	V	V	/	

* applies - 001

** applies -004

Reviewed By: Kwin A Lambert Date: 10-26-06

Site/Project:	AR/COC#: 6/0833	3,610834	Batch #s:	
Laboratory:	Laboratory Report #:	173404	# of Samples:	Matrix:

IS	CAS#	Name	TCL	Min. RF	Inter	rcept		Calib. RSD/ R ² <20%/		D.	Method Blks	LCS	LCSD	LCS RPD	мѕ	MSD	MS RPD	Field Dup. RPD	Trip Equip. Blanks	H Trip Blan		Fie I Blk		
							>.05	0.99)%						ļ,.							\bot	
		Bromobenzene	┖		\ N	A	NA	NA	<u></u>			V			V	1	<u> </u>	NA		V	_			
		Bromochloromethane	L,				NA	NA	1				!		<u> </u>								4	
	,	Bromodichloromethane	Ľ	0.20			✓		1				1			 - - - - - - - - - 	<u> </u>							
3	75-25-2	Bromoform	✓			/	/	/					1				<u> </u>							
1		Bromomethane		0.10	V	/	√	/	<u> </u>				1				<u> </u>						\bot	
	108-60-1	bis(2-Chloroisopropyl)ether	✓	1					V														\perp	
	75-15-0	Carbon disulfide		0.10	\mathcal{N}	A		✓	12	1													\bot	
1	56-23-5	Carbon tetrachloride		0.10			\checkmark	✓,																
2	108-90-7	Chlorobenzene		0.50				V																
ī	75-00-3	Chloroethane		0.01			V	V.		/														
	67-66-3	Chloroform		0.20			1	√ ,	V															
1	74-87-3	Chloromethane	V	0.10			V	✓,	- 3	3 /														
1	156-59-2	cis-1,2-Dichloroethene	1		.,44		\	V,	V	7														
1		cis-1,3-Dichloropropene	マ	0.20	T.	71	/	-																
2		Dibromochloromethane	ⅳ	0.10	1			V.		,														
1	74-95-3	Dibromomethane	V			/		V.	V	/													\Box	
1		Dichlorodifluoromethane	17		V		V	V,	- 3	0														
2		Ethyl methacrylate	V	1	,	7	V.		1	/														
$\frac{1}{2}$	100-41-4	Ethylbenzene		0.10	7	,A	V	V		1									-				\top	
3		Hexachlorobutadiene					NA	NA				П											\top	
ī	74-88-4	Iodomethane	V	1		1.		/															\top	
-		Isobutyl alcohol	ⅳ	1	1	7	0.02																	
h		Methyl methacrylate	V		V	/		V.						1									\neg	
H	126-98-7	Methylacrylonitrile	V		N	A		V						1									\neg	
1	75-09-2	Methylene chloride (10xblk)			1	7	7	/						11										
13	91-20-3	Naphthalene		1		IA	NA	NA						\sqcap									\top	
13		n-Butylbenzene	1				1	1						1									\neg	
13		n-Propylbenzene	\vdash	1				1,																
2		o-Xylene		,	\top		1	1/	1					<u> </u>										
F	76-01-7	Pentachloroethane	∀	1	-	 	1	-				\vdash		1									_	
-		Propionitrile	カ	+-	1	,	1	7	1-1												_		十	
1-	135-98-8	sec-Butylbenzene	۲÷	+	+	/, 	NA	NA	1 1						11						\neg	$\neg +$	\dashv	
1	100-42-5	Styrene	┰	0.30	1 7	/	1	1	1-1			\vdash		 	\vdash			1		 	_	_	_	
3	98-06-6	tert-Butylbenzene	Ť	10.50	L	A	NA	NA	+		 				 - - - 	1	1-1-				-+	-		
2	127-18-4	Tetrachloroethene	17	0.20	 '	/	17/	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	+-+			$\vdash\vdash$			11		 			 		-	\dashv	-+
3	109-99-9	Tetrahydrofuran	╀	10.20	 X	(A	NA	NA	++					 	+	1		-	 				一	
3		toluene(10xblk)	+	0.40	 '	1	1-17	'''	+-+			1		 	\vdash	 -							-+	+
2	108-88-3	trans-1,2-Dichloroethene	╁	10.40	1	/-	 		++		 			 	H	 -				 -	-+		+	
1	156-60-5			0.10	1	/	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V.	+-+			++-		 	+	 - - 	 	- -	 	-	-	-		
2		trans-1,3-Dichloropropene	╁			7A	1	- '/-	+	/		 , 		 	-	 - - 						-	+	
3	110-57-6	trans-1,4-dichloro-2-Butene					<u> </u>	- \	+-1		$- \forall -$	₩-		 		1		1	- 	1		1	4	
1	79-01-6	Trichloroethene	14	0.30	1	/A	0.27	V	W		Ι Υ	1			¥.¥	L V	V	Υ	V	J V				and the second section

		Project:							3,610 17340			ch #s: f Samp				· · · · ·	Matrix	:					<u>-</u>
	s	CAS#	Name	T C	Min.	Inte	ercept	Calib. RF	Calib. RSD/ R ²	CCV %D	Method Biks	LCS	LCSD	LCS RPD	MS	MSD	MS RPD	Field Dup. RPD	Trip Equip.k Blanks	Trip	Fiel Blk	d	
				L	KF			>.05	<20% / 0.99	20%	DIKS			ערא			ĶPD	RPD	DIATIKS	DIAIIKS	1312		
ī		75-69-4	Trichlorofluoromethane	V		1	VA	V	V	-31					✓	V	V	NA		V	V		
1		76-13-1	Trichlorotrifluoroethane (Freon 113)						,	/													
1		108-05-4	Vinyl Acetate	V	<u> </u>			V	<i></i> ,														/
1		75-01-4	vinyl chloride	V	0.10		/	/	√,						/		1/	1/		1/	1/		7
2	:]	1330-20-7	xylenes(total)	1	0.30		V	V	V	V	V	J V		\	W/	LV	W_	$\perp V_{-}$	I V	¥	₩		$\overline{}$

Comments:

Notes: Shaded rows are RCRA compounds.

Surrogate Recovery and Internal Standard Outliers (SW 846 Method 8260)

Sample	SMC 1	SMC 2	SMC 3	IS 1 area	IS 1 RT	IS 2 area	IS 2 RT	IS 3 area	IS 3 RT
	Met				Met				
	Cui	tena			Crite	ria			
				.*					

SMC 1: Bromofluorobenzene

IS 1: Fluorobenzene
IS 2: Chlorobenzene-d5

Comments:

SMC 2: Dibromofluoromethane SMC 3: Toluene-d8

IS 3: 1,4-Dichlorobenzene-d4

Inorganic Metals

Site/Project:	CWL ASSESS GWM	AR/COC#: <u>6/0833, 6/0834</u>	Laboratory	Sample IDs:	173404-003,-007
Laboratory:		Laboratory Report #: 173404			,
		EPA7470A(CVAAHg)			
# of Camples	. 2 Matr	iv: Garage	Batch #s:	576378	577648 577595

Analyte TAL ICV CCV ICB CCB Method Blanks CCB Method Blanks LCS LCSD MS MSD Rep. Re			QC Element 5X															0.40.44																						
7440-39-5 Ba			ı	SHI	-Field		Equip. Blanks		Dup.		Dilu-		ICS AB		Rep. RPD	\perp	RPD		MSD	1	MS		RPI	1				LCS				ССВ		IСВ	ccv	-	icv	L	TA	
7440-41-7 Be						\top		\perp		1				\perp		\perp	NA		NA	L		4	N		A	N										Π			,	429-90-5 AI
7440-43-9 Cd				\perp						Ш	/		/		✓		1				/							✓							/		~		abla	440-39-3 Ba
7440-70-2 Ca 7440-70-2 Ca 7440-70-3 Cr 7440-73-3 Cr 7440-48-4 Co 7440-8-4 Co 7440-8-4 Co 7440-8-5 Cu 7440-8-6 Cu 7											/	\perp	_/		/			\perp				\perp						V		V	·	V .		7	✓		/	,		440-41-7 Be
7440-47-3 Cr				\perp							✓	\perp	V					\perp			/							✓	Ι	\checkmark									$\overline{}$	
7440-47-3 Cr				\perp					7					I				T		Γ							\top		Ι				Т			Τ	-			
7440-48-4 Co					0.0074	C					\checkmark	\top	_		/	T		Т		Γ	/							7	1	001485	0.			/	V	T	~		\vee	
7440-50-8 Cu				I				T		T	✓	\perp	-	I	V	\perp			\perp	L								\checkmark	Τ	/		1,		/		Т	/		7	
7439-89-6 Fc				T				\perp			V			\perp	\	I		T			√			П									\neg	/	V .	Т	/	$\neg \uparrow$	7	
7439-95-4 Mg 7439-96-5 Mn 7440-02-0 Ni 7440-09-7 K 7440-23-5 Na 7440-23-5 Na 7440-23-5 Sn 7440-31-5 Sn 7440-66-2 N 7440-66-6 Zn 7440-66					0.057	7			1.	Т	$\overline{}$		$\overline{}$	T		Т		T					7	Π				$\overline{}$	Τ	0/145	0.	/		/	$\overline{\mathcal{L}}$	1	/		7	
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7440-02-0 Ni				T		\top		1	1	Т		T		T		Т		Т		Т			\neg	1			Т		Τ		Γ		\top			\top		$\neg \uparrow$	\vdash	
7440-9-7 K 7440-22-4 Ag 7440-23-5 Na 7440-31-5 Sn 7440-62-2 V 7440-66-6 Zn 7440-66-6 Zn 7440-38-2 As 7440-38-2 As 7440-36-0 Sb 7440-36-0 Sb 7440-36-0 Hg 7439-97-6 Hg 7439-97-6 Hg 7439-97-6 Hg 7439-97-6 Hg 7430-97-6 Hg 7430-97-6 Hg 7440-36-0 Na 7440-36-				\top				Т	1	Т	V	T	V	T	/	\top		T		Т	$\overline{}$			Т	T		\top	<u> </u>	Т			7	\neg		/	_		\neg	1	
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7439-92-1 Pb				T	0.017	1	\	7		7	V	T	\checkmark	\top	7	T				Τ	/		\neg		1		十	~		00345	0.		\top	7	J	十			1.7	
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7440-38-2 As				T		\top		Т		T	V	\top	V	\top		T		Т		Т	V				\top		十	$\overline{}$	T	V	Τ	V.	十	7		\top		-		
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Notes: Shaded rows are RCRA metals. Solids-to-aqueous conversion: mg/kg = \mu g/g: [(\mu g/g) x (sample mass {g} / sample vol. {ml}) x (1000 ml / 1 liter)] / Dilution Factor = \mu g/l

Comments:

Reviewed By: Kevin A Sambert Date: 10-26-06

Contract Verification Review (CVR)

Project Leader	Freshour	Project Name	CWL GWM	Case No.	98026_01.07
AR/COC No.	610833, 610834	Analytical Lab	GEL	SDG No.	173404

In the tables below, mark any information that is missing or incorrect and give an explanation.

1.0 Analysis Request and Chain of Custody Record and Log-In Information

Line		Comp	lete?		Reso	lved?
No.	Item	Yes	No	If no, explain	Yes	No
1.1	All items on COC complete - data entry clerk initialed and dated	X				
1.2	Container type(s) correct for analyses requested	X				
1.3	Sample volume adequate for # and types of analyses requested	X				
1.4	Preservative correct for analyses requested	X				
1.5	Custody records continuous and complete	X				
1.6	Lab sample number(s) provided and SNL sample number(s) cross referenced and correct	×				
1.7	Date samples received	X				
1.8	Condition upon receipt information provided	X				

2.0 Analytical Laboratory Report

Line		Comp	lete?		Res	olved?
No.	Item	Yes	No	If no, explain	Yes	No
2,1	Data reviewed, signature	X				
2.2	Method reference number(s) complete and correct	X				
2.3	QC analysis and acceptance limits provided (MB, LCS, Replicate)	X				
2.4	Matrix spike/matrix spike duplicate data provided (if requested)	X				
2.5	Detection limits provided; PQL and MDL (or IDL), MDA and Lc	X				
2.6	QC batch numbers provided	X				
2.7	Dilution factors provided and all dilution levels reported	X				
2.8	Data reported in appropriate units and using correct significant figures	X				
2.9	Radiochemistry analysis uncertainty (2 sigma error) and tracer recovery (if applicable) reported	N/A				
2.10	Narrative provided	X				
2.11	TAT met	X				
2.12	Hold times met	X				
2.13	Contractual qualifiers provided	X				
2.14	All requested result and TIC (if requested) data provided	X				

ARCOC: 610833, 610834

Contract Verification Review (Continued)

3.0 Data Quality Evaluation

3.0 Data Quality Evaluation			
Item	Yes	No	If no, Sample ID No./Fraction(s) and Analysis
3.1 Are reporting units appropriate for the matrix and meet contract specified or project-specific requirements? Inorganics and metals reported as ppm (mg/liter or mg/kg)? Tritium reported in picocuries per liter with percent moisture for soil samples? Units consistent between QC samples and sample data	×		
3.2 Quantitation limit met for all samples	X		
3.3 Accuracy a) Laboratory control samples accuracy reported and met for all samples	×		
 Surrogate data reported and met for all organic samples analyzed by a gas chromatography technique 	X		
c) Matrix spike recovery data reported and met	Х		
3.4 Precision a) Replicate sample precision reported and met for all inorganic and radiochemistry samples	X		
b) Matrix spike duplicate RPD data reported and met for all organic samples	X		
3.5 Blank data a) Method or reagent blank data reported and met for all samples		х	1,2,4-Trichlorobenzene detected in VOC Method Blank; Zinc & Antimony detected in Metals Method Blank in Sample No. 083035-009; Chromium, Iron, Zinc detected in Metals Blank in Sample No. 083037-009
b) Sampling blank (e.g., field, trip, and equipment) data reported and met		X	Acetone detected in TB-1 (083036-001) and in FB-1 (083038-001)
3.6 Contractual qualifiers provided: "J"- estimated quantity; "B"-analyte found in method blank above the MDL for organic or above the PQL for inorganic; "U"- analyte undetected (results are below the MDL, IDL, or MDA (radiochemical)); "H"-analysis done beyond the holding time	×		
3.7 Narrative addresses planchet flaming for gross alpha/beta	N/A		
3.8 Narrative included, correct, and complete	Х		
3.9 Second column confirmation data provided for methods 8330 (high explosives) and 8082 (pesticides/PCBs)	N/A		

Contract Verification Review (Continued)

4.0 Calibration and Validation Documentation

	Item	Yes	No	Comments
4.1 GC/MS (8260	, 8270, etc.)			
a) 12-hour tu	ne check provided	×		
b) Initial cali	bration provided	×		
c) Continuing	calibration provided	×		
d) Internal a	tandard performance data provided	×		
d) Internals	randara per formance data provided			
e) Instrumer	it run logs provided	×		
,	.			
4.2 GC/HPLC (833	O and 8010 and 8082)			
a) Initial cali	bration provided	N/A		
b) Continuing	calibration provided	N/A		
- T	A min bas manidad	N1/4		
c) Instrumer	nt run logs provided	N/A		
4.3 Inorganics (m	etals)			
	bration provided	×		
h) Combination	alibation provided	X		
b) Continuing	calibration provided	^		
c) ICP interf	erence check sample data provided	×	4	
d) ICP serial	dilution provided	×		
	nt run logs provided	×		
4.4 Radiochemistr				
a) Instrumer	nt run logs provided	N/A		

ARCOC: 610833, 610834

Contract Verification Review (Concluded)

5.0 Problem Resolution

Summarize the findings in the table below. List only samples/fractions for which deficiencies have been noted.

Sample/Fraction No.	Analysis	Problems/Comments/Resolutions
	·	•
Were deficiencies unresolved?	es No	
Based on the review, this data package is	complete.(Yes) No	
If no, provide: nonconformance report or	correction request number _	and date correction request was submitted
<i>i</i> .1\		0/24/06Closed by:Date:
Keviewed by:	Дате:	Uate:

	ICP-MS metals	7440-47-3 (Chromium)	7440-31-5 (Tin)	7440-62-2 (Vanadium)	7440-66-6 (Zinc)	CVVA Hg	7439-97-6 (Mercury)											
83040-009 CWL-BW3	#			J,B	J,B		UJ,B3										F	
83042-009 CWL-MW6U	\dashv		J,B3	J,B	J,B		UJ,B3		Н			-	-			 	H	
83044-009 CWL-EB1					J,B	+-	UJ,B3		H	-		<u> </u>	 	-		<u> </u>	H	
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616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Carrier Secondates, and

Memorandum

Date:

October 26, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation - SNL

Site: CWL Assessment GWM

AR/COC: 610835, 610836, and 610837

SDG: 173646 Laboratory: GEL

Project/Task: 98026.01.07

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA6020 (ICP-MS metals) and EPA7470A (CVAA mercury). Problems were identified with the data package that result in the qualification of data.

1. ICP-MS metals:

The following target analytes were detected (≥ DL) in one or more of the blanks (ICB, CCB, MB). The associated sample results are qualified as noted below.

Sample 173646-003

V and Zn were detects <5X the MB and should be qualified "J, B."

Sample 173646-008

V and Zn were detects <5X the MB and should be qualified "J, B."

Sn was a detect <5X the ICB/CCB and should be qualified "J, B3."

Sample 173646-009

Cr, V, and Zn were detects <5X the MB and should be qualified "J, B."

The following target analytes were detected (≥ DL) in one or more of the blanks (ICB, CCB) at negative concentration with absolute value > the DL but < the RL. The associated sample result is qualified as noted below.

Sample 173646-009

Sn was non-detect and should be qualified "UJ, B3."

2. CVAA mercury:

The target analyte was detected (\geq DL) in one or more of the blanks (ICB, CCB) at negative concentration with absolute value > the DL but < the RL. The associated sample result is qualified as noted below.

Samples 173646-003, -008, and -009

Hg was non-detect and should be qualified "UJ, B3."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

ICP-MS metals:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria.

Replicate

The replicate met QC acceptance criteria.

ICP Serial Dilution

The serial dilution met QC acceptance criteria.

ICP Interference Check Sample (ICS)

The ICS data met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

ICP-MS metals and CVAA mercury:

An EB was submitted on the AR/COC(s). However, it should be noted that the EB submitted on ARCOC# 610837 is associated with SNL samples in another SDG.

No other specific issues were identified which affect data quality.



616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744

Email: minteer@aol.com

Memorandum

Date:

October 26, 2006

To:

File

From:

Kevin Lambert

Subject:

Organic Data Review and Validation - SNL

Site: CWL Assessment GWM

AR/COC: 610835, 610836, and 610837

SDG: 173646 Laboratory: GEL

Project/Task: 98026.01.07

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

All samples were prepared and analyzed with accepted procedures using method EPA8260B (VOC). All compounds were successfully analyzed. No problems were identified with the data package that result in the qualification of data.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times

All samples were extracted and analyzed within the prescribed holding times and properly preserved.

Calibration

The initial calibration and continuing calibration data met QC acceptance criteria except as noted above in the summary section and as follows.

VOC:

The calibration response factor (RF) for acetonitrile, (0.04), isobutyl alcohol (0.01) and trichloroethene (0.21) was < the specified minimum RF (0.05, 0.05, and 0.30, respectively). No data should be qualified based on professional judgment. The continuing calibration verification percent difference (CCV %D) for seven target analytes were > 20% but \leq 40% (see Data Validation Worksheet). The associated sample results were non-detects and as a result based on professional judgment no data should be qualified.

Blanks

No target analytes were detected in the blanks.

Internal Standards (ISs)

Internal standards data met QC acceptance criteria.

Surrogates

The surrogate recoveries met QC acceptance criteria.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

VOC:

It should be noted that no LCSD was provided with the SDG. Laboratory precision was assessed using the MS/MSD. No data should be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD met QC acceptance criteria except as follow.

VOC:

The MS and MSD recovery for carbon disulfide (135% and 132%) were > the upper QC acceptance Limit (130%). The associated sample results were non-detects; no data should be qualified as a result.

Target Compound Identification/Confirmation

No target compound identification/confirmation analyses were required.

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No trip blank (TB), equipment blank (EB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

VOC:

TBs, and an EB were submitted on the AR/COC(s). However, it should be noted that the EB submitted on ARCOC# 610837 is associated with SNL samples in another SDG.

No other specific issues were identified which affect data quality.

Data Validation Summary

Site/Project: CWL ASSESS GWM Project/Task #: 98026, 01. 07	# of Samples: 9 Matrix: agueous
AR/COC#: 6/0335, 6/0836, 6/0837	Laboratory Sample IDs: 173646 -001 to -009
Laboratory: GEL	
SDG#: /73646	

					Analy	sis				
QC Element		Orga	anics		ws.	Inorg	anics			
	voc	svoc	Pesticide/ PCB	HPLC (HE)	ICP/AES X	₩GFAA/ AA	CVAA (Hg)	CN	RAD	Other
1. Holding Times/Preservation	✓				✓		/			
2. Calibrations	✓			•	UJJ		UJ			
3. Method Blanks	1				J		/			
4. MS/MSD	/				1		/			
5. Laboratory Control Samples	√				✓		/			
6. Replicates					~	\	/			
7. Surrogates	/									
8. Internal Standards	/									
9. TCL Compound Identification										
10. ICP Interference Check Sample					√					
11. ICP Serial Dilution					1	1				
12. Carrier/Chemical Tracer Recoveries										
13. Other QC 1B					NA	NAKA	NA			

	Recoveries			\			l\				
13.	Other QC 1B	/				NA	NAKA	NA			
=	Estimated	R = Unusab	le	NP	-	= Not Provi	ded			and the second s	
J =	Not Detected	Check $()$ =	Acceptable	Other:					2 1 A		
J J =	Not Detected, Estimated	Shaded Cells =	Not Applicable (also "NA")			Reviewed	1 By: <u>Ken</u>	in A Ze	amber 1	ate: /0 -	26-06
				•							

Inorganic Metals Site/Project: CWL Assess GWM ARCOC#: 6/0835, 6/0836, 6/0837 Laboratory Sample IDs: 173646-003,-008-009* Laboratory: GEL Laboratory Report #: 173646 Methods: EPA6020 (ICP-MS), EPA7470A (CVAAHS) Batch #s: 579601, 579263 # of Samples: 3 Matrix: agreeous

		QC Element SXDL																			
CAS#/											WC L	_161116						1 2 1	5x04	<u>-</u>	
Analyte	TAL	ICV	ccv	ICB	ССВ	Method Blanks	LCS	LC	SD	LCSD RPD	MS	MSD	MSD RPD	Rep. RPD	ICS AB	Serial Dilu- tion	Field Dup. RPD	Equip. 7 Blanks	Hanks	12	
7429-90-5 Al								N	A	NA		NA	NA				NA				
7440-39-3 Ba	/	V	V		\	✓	✓				V		1	/							a.
7440-41-7 Be	V	V	V	V	V .	/	✓				1				V						440
7440-43-9 Cd	✓	/	V		V	V	✓				V			V							
7440-70-2 Ca																					and the same of th
7440-47-3 Cr	V	V	/	✓	V	0.001275	√				1			V	V	V		0.006			
7440-48-4 Co	V,	$\overline{}$	V	V	V	✓ /	/				1					~					
7440-50-8 Cu	~	7	V	V	/	✓	✓							/	7	V	ļ				l l
7439-89-6 Fe	V	7	V	V	V						1			V		1					
7439-95-4 Mg																					
7439-96-5 Mn														1							
7440-02-0 Ni	V	1	/	V	V	V								1	V	V					1
7440-09-7 K																					
7440-22-4 Ag	~	1	V	1	1/	V	V				V			/	V	/					
7440-23-5 Na																			0.005		
7440-31-5 Sn	V	V	/	V /	0.00102	0.00-V	$\overline{}$				1			1	/	V		0.005		KAL	
7440-62-2 V			/	V		0.00947)	V				V			V				0.474	0.474	KH	
7440-66-6 Zn	V	V	~	V		0.003725	✓	\Box			V			V	V	<i>✓</i>		0.019	0.019	KAL	
7439-92-1 Pb	7	V	~	7	V						1			7	1	V		 			
7782-49-2 Se	V	✓	/		V		· 🗸				1			V	1	V					
7440-38-2 As	V	1	~	V	V	V	V				1			V	V	V					1
7440-36-0 Sb	V	1	V	/		· V					1			1	1	V					
7440-28-0 TI	\checkmark	V	~	/	V	~	\checkmark			/	V	V	W	V	V	1					1
7439-97-6 Hg	7	V	V	1	0.00007.		V	N	A	NA	V	NA	NA	V	NA	NA	1		0.0003		
Cyanide CN-							····:::.				 			ļ				<u> </u>			
KAL																					
											+	 						 	-	ļ	-
																		<u> </u>			

Notes: Shaded rows are RCRA metals. Solids-to-aqueous conversion: mg/kg = \mu g/g: [(\mu g/g) x (sample mass \{g\} / sample vol. \{ml\}) x (1000 ml/I liter)]/Dilution Factor = \mu g/I

Comments: \(\psi \) applies to 5NL Samples in another 5DG

Reviewed By: Kevin A Lambert Date: 10-26-06

Volatile Organics (SW 846 Method 8260)

Page 1 of 3

Site/Project: CWL Assess GWM AR/COC #: 6/0835, 6/0836, 6/0837	# of Samples: 6 Matrix: aqueous
Laboratory: GEL Laboratory Report #: 173646	Laboratory Sample IDs: 173646-001, -002, -004, -005, -006, -007
Methods: EPA8260B(Voc)	Batch #s: 579/68

ıs	CAS#	Name	TCL	Min. RF	intercep		Calib. RSD/ R ² <20%/	CCV %D	Method Biks	LCS	LCSE	LCS RPD	MS	MSD	MS RPD	Field Dup. RPD	Trip* Equip. Blanks	** Trip Blanks	**XX Trip BIK	
						>.05	0.99	20%		1							-002	-005	-007	
	630-20-6	1,1,1,2-Tetrachloroethane	V,		NA	V	V.	V		V			V	V	V		V	V	V	
	71-55-6	1,1,1-Trichloroethane	V	0.10			V/	V		1.1	1		1_1_							
3	79-34-5	1.1.2,2-Tetrachloroethane	✓	0.30			V ,	21,										and the same		
2	79-00-5	1,1,2-Trichloroethane	V	0.10		\	V.				Π									
1	75-34-3	1,1-Dichloroethane	~	0.10				V			T									
1	75-35-4	1,1-Dichloroethene	V	0.20			/	V												
1	563-58-6	1,1-Dichoropropene				NA	NA	NA												
3	87-61-6	1,2,3-Trichlorobenzene				NA	NA	NA										Ì		
3	96-18-4	1,2,3-Trichloropropane	V				V	V.										1		
3	120-82-1	1,2,4-Trichlorobenzene	V			V	/													
3	95-63-6	1,2,4-Trimethylbenzene				NA	NA	NA												
3	96-12-8	1.2-Dibromo-3- chloropropane	/				/											The second second		
2	106-93-4	1,2-Dibromoethane (EDB)	7				V			\top	1									
3	95-50-1	1,2-Dichlorobenzene	7			1	/			++	1	1		 						
1	107-06-2	1,2-Dichloroethane	1	0.10		1	V			11			1	1				 		
1	78-87-5	1,2-Dichloropropane	abla	0.01		I	7	V				1	1-1-							
3	108-67-8	1,3,5-Trimethylbenzene	\top			NA	NA	NA				1								
3	541-73-1	1,3-Dichlorobenzene	T				١	1				1								
2	142-28-9	1,3-Dichloropropane	1	0.01																
3	106-46-7	1,4-Dichlorobenzene	Τ									1								
	107-04-0	I-Bromo-2-chloroethane	Τ									1								
1	594-20-7	2,2-Dichloropropane	1			V	V	V				11								
i	78-93-3	2-Butanone (MEK) (10xblk)	~	0.01	۲	V	V	1												
1	126-99-8	2-Chloro-1, 3-butadiene	V				V					11								
1	110-75-8	2-Chloroethyl vinyl ether	Т			NA	NA	NA				11								
	95-49-8	2-Chlorotoluene	Т			NA	NA	NA		TT										
2	591-78-6	2-Hexanone (MBK)	V	0.01		V	V													
3	106-43-4	4-Chlorotoluene				NA	NA	NA		11					1.					
3	99-87-6	4-Isopropyltoluene	I			NA	NA	NA										1.		
2	108-10-1	4-Methyl-2-pentanone (MIBK)	V	0.10	V	/	V													
1	67-64-1	acetone(10xblk)	V	0.01		1	1					1		1						
	75-05-8	Acetonitrile	V		NA	0.04	1													1
1	107-02-8	Acrolein	V			1	1			$\top \top$		1		TT						1
1	107-13-1	Acrylonitrile	V			1	V.	V												
1	107-05-1	Allyl chloride	V				✓	-28	/	11/		T	17	1.1/	11/		1	1/	1	1
1	71-43-2	Benzene	14	0.50	V	1			T V	14			VV	TV	V		1 7	1 1/	V	

* applies -001; ** applies -004; ** applies -006

Reviewed By: Lown A Lambert Date: 10-26-06

Site/Project:	AR/COC #: 610835,61	10836, 610837	Batch #s:	
Laboratory:	Laboratory Report #:/	73646	# of Samples:	Matrix:

ıs	CAS#	Name	TC	Min. RF	Inte	rcept	Calib. RF	Calib. RSD/ R ²	CCV %D	Method Blks	LCS	LCSD	LCS RPD	MS	MSD	MS RPD	Field Dup.	Trip Equip. Blanks	Trip Blanks	Trip		
			Ľ				>.05	<20%/ 0.99	20%						ļ		RPD			,,,,		
		Bromobenzene	_	ļ	^	/A	NA	NA	NA		✓	1			\ <u>\</u>	V		<u>-</u> -	<u> </u>	<u> </u>	_	
		Bromochloromethane	Ļ.,		<u> </u>		NA	NA	NA			1				<u> </u>					4	
		Bromodichloromethane	V,	0.20			/				lacksquare	<u> </u>			$\perp \perp$					<u> </u>	_#	
		Bromoform	V,	<u> </u>								1			$\sqcup \bot$		1				_	
_		Bromomethane	+	0.10					21													
		bis(2-Chloroisopropyl)ether	1					V-147	-N7F-	21				LV.	I V	V						
	75-15-0	Carbon disulfide		0.10			√ K	LVA	C V KAC					135(130)/32	V						
		Carbon tetrachloride		0.10			/	√	-23						V	/						1
2	108-90-7	Chlorobenzene	V	0.50			✓	√							_1							1
1	75-00-3	Chloroethane		0.01			\checkmark	V														
	67-66-3	Chloroform		0.20			✓	✓ .														
1	74-87-3	Chloromethane	✓	0.10			$\overline{}$	$\sqrt{}$														
1	156-59-2	cis-1,2-Dichloroethene					NA	NA	NA													1
l	10061-01-5	cis-1,3-Dichloropropene	$\overline{\mathcal{A}}$	0.20				V														
2	124-48-1	Dibromochloromethane	マ	0.10			V.	V.													\top	
1	74-95-3	Dibromomethane	V				7,	V.				1									\neg	
1	75-71-8	Dichlorodifluoromethane	V					V.	1													1
2	97-63-2	Ethyl methacrylate	V				V	V	-24												\neg	
2	100-41-4	Ethylbenzene	V	0.10			V	V				1									\neg	
3	87-68-3	Hexachlorobutadiene					NA	NA	NA												\neg	
1	74-88-4	Iodomethane	マ				$\overline{}$	$\overline{}$														
	78-83-1	Isobutyl alcohol	V				0.01		1				1								\top	
1		Methyl methacrylate	~			/	V						1								\neg	
	126-98-7	Methylacrylonitrile	7			7	V.	V.													\neg	
1	75-09-2	Methylene chloride (10xblk)	1	0.01	,	\mathcal{I}		$\overline{}$	V													
3		Naphthalene	Г			(A	NA	N4	NA										1			
3	104-51-8	n-Butylbenzene	Г		l i				1													
3		n-Propylbenzene																	1		\top	
2	95-47-6	o-Xylene					V	V	V								1					
	76-01-7	Pentachloroethane	7				V.	7 7	V				1								\neg	1
		Propionitrile	1				V	-/-												1	\neg	
		sec-Butylbenzene			\Box		NA	NA	NA						 	1-1-	1		 	1	-	
		Styrene	17	0.30	\vdash		-'y -	1	1				-		1	1				 	-	
		tert-Butylbenzene	1	1	\vdash		NA	NA	NA										 - - - - - - - - - 		-	
	127-18-4	Tetrachloroethene	7	0.20	\vdash		-'y- -	-13/1 -	7							1-1-				1	-	
	109-99-9	Tetrahydrofuran	Ϊ́		1		NA	N,A	NA					 	1	1 1-	 				+	
		toluene(10xblk)	1	0.40	1-1		- // /	14.77	1				1	 	 	 - - - - - - - - - 			 	1	-	-
		trans-1,2-Dichloroethene	Ż	0.70	-		V						-		-	1-1-			 		+	
-		trans-1,3-Dichloropropene	<u> </u>	0.10			-y- -	/ /					1		1-1-	+ +				 	+	
		trans-1,4-dichloro-2-Butene	1	0.10	-+			- V -			 , 			\vdash	 	1-1-				 	-+	
	79-01-6	Trichloroethene	\'	0.30	1.1/		0.21		- \/ -	₩	\forall			1	1	+-\/-		₩	─ //	 \/	-+	

S	ite/l	Project:			AR/CO	OC #: <u>6/</u>	0835	61083	36,610	837 Bat	ch #s:										
L	abo	ratory:				atory Repo					f Samp					Matrix	:				
	IS	CAS#	Name	TC	Min.	Intercep	Calib. RF	Calib. RSD/ R ²	CCV %D	Method Blks	LCS	LCSD	LCS	MS	MSD	MS RPD	Field Dup. RPD			Trip	
				L	RF		>.05	<20%/ 0.99	20%	Blks			RPU			RPD	RPD	Blanks	Blanks	BIK	
ſ	1	75-69-4	Trichlorofluoromethane	1		NA		V	-22	V	V				\ \			/	V	/	1
	1	76-13-1	Trichlorotrifluoroethane (Freon 113)				NA	NA	NA												/
	1	108-05-4	Vinyl Acetate	7			 ✓	V	V									1			1
ı	1	75-01-4	vinyl chloride	7	0.10	1/	1	V		/	11/			/	/				11		,
H	_	1220 20 7	1	7	0.30	117	7	1 7	1 . 1 /	1 1/	1 377		1		1 17/			1 \ 1 /	1		

Comments:

Notes: Shaded rows are RCRA compounds.

Surrogate Recovery and Internal Standard Outliers (SW 846 Method 8260)

Sample	SMC 1	SMC 2	SMC 3	IS 1 area	IS 1 RT	IS 2 area	IS 2 RT	IS 3 area	IS 3 RT
	Met				Met				
	Crite	na		· .	Criter	ia			

SMC 1: Bromofluorobenzene

IS 1: Fluorobenzene

Comments:

SMC 2: Dibromofluoromethane

IS 2: Chlorobenzene-d5

SMC 3: Toluene-d8

IS 3: 1,4-Dichlorobenzene-d4

Contract Verification Review (CVR)

Project Leader	Freshour	Project Name	CWL GWM	Case No.	98026_01.07
AR/COC No.	610835, 610836, 610837	Analytical Lab	GEL	SDG No.	173646

In the tables below, mark any information that is missing or incorrect and give an explanation.

1.0 Analysis Request and Chain of Custody Record and Log-In Information

Line		Comp	lete?		Reso	lved?
No.	Item	Yes	No	If no, explain	Yes	No
1.1	All items on COC complete - data entry clerk initialed and dated	X				
1.2	Container type(s) correct for analyses requested	X				
1.3	Sample volume adequate for # and types of analyses requested	X				
1.4	Preservative correct for analyses requested	X				
1.5	Custody records continuous and complete	X				
1.6	Lab sample number(s) provided and SNL sample number(s) cross referenced and correct	×				
1.7	Date samples received	X				
1.8	Condition upon receipt information provided	X				

2.0 Analytical Laboratory Report

Line		Comp	lete?		Res	olved?
No.	Item	Yes	No	If no, explain	Yes	No
2.1	Data reviewed, signature	X				
2.2	Method reference number(s) complete and correct	X				
2.3	QC analysis and acceptance limits provided (MB, LCS, Replicate)	X				
2.4	Matrix spike/matrix spike duplicate data provided (if requested)	X				
2.5	Detection limits provided; PQL and MDL (or IDL), MDA and Lc	X				
2.6	QC batch numbers provided	X				
2.7	Dilution factors provided and all dilution levels reported	X				
2.8	Data reported in appropriate units and using correct significant figures	X				
2.9	Radiochemistry analysis uncertainty (2 sigma error) and tracer recovery (if applicable) reported	N/A				
2.10	Narrative provided	Х				
2.11	TAT met	Х				
2.12	Hold times met	Х				
2.13	Contractual qualifiers provided	X				
2.14	All requested result and TIC (if requested) data provided	X				

Contract Verification Review (Continued)

3.0 Data Quality Evaluation

3.0 Data Quality Evaluation			
Item	Yes	Ņο	If no, Sample ID No./Fraction(s) and Analysis
3.1 Are reporting units appropriate for the matrix and meet contract specified or project-specific requirements? Inorganics and metals reported as ppm (mg/liter or mg/Kg)? Tritium reported in picocuries per liter with percent moisture for soil samples? Units consistent between QC samples and sample data	×		
3.2 Quantitation limit met for all samples	Х		
3.3 Accuracy a) Laboratory control samples accuracy reported and met for all samples	X		
 b) Surrogate data reported and met for all organic samples analyzed by a gas chromatography technique 	X		
c) Matrix spike recovery data reported and met		Х	VOC MS recovery for Carbon disulfide failed high
3.4 Precision a) Replicate sample precision reported and met for all inorganic and radiochemistry samples	X		
b) Matrix spike duplicate RPD data reported and met for all organic samples	X		
3.5 Blank data a) Method or reagent blank data reported and met for all samples		х	Chromium, Vanadium, Zinc detected in Metals Method Blank
b) Sampling blank (e.g., field, trip, and equipment) data reported and met		×	Dibromochloromethane detected in EB 1 (083044-001)
3.6 Contractual qualifiers provided: "J"- estimated quantity; "B"-analyte found in method blank above the MDL for organic or above the PQL for inorganic; "U"- analyte undetected (results are below the MDL, IDL, or MDA (radiochemical)); "H"-analysis done beyond the holding time	×		
3.7 Narrative addresses planchet flaming for gross alpha/beta	N/A		
3.8 Narrative included, correct, and complete	X		
3.9 Second column confirmation data provided for methods 8330 (high explosives) and 8082 (pesticides/PCBs)	N/A		

ARCOC: 610835, 610836, 610837

Contract Verification Review (Continued)

4.0 Calibration and Validation Documentation

4.0 Calibration and Validation Documentation	1 -, -		
Item *	Yes	No	Comments
4.1 GC/MS (8260, 8270, etc.)			
a) 12-hour tune check provided	×		
b) Initial calibration provided	X		
c) Continuing calibration provided	X		
d) Internal standard performance data provided	×		
e) Instrument run logs provided	×		
4.3. CC// IDI C (8.320 4 8040 4 8082)			
4.2 GC/HPLC (8330 and 8010 and 8082)			
a) Initial calibration provided	N/A		
	1		
b) Continuing calibration provided	N/A		·
c) Instrument run logs provided	N/A		
-,			
127			
4.3 Inorganics (metals)			
a) Initial calibration provided	X		
	 		
b) Continuing calibration provided	X		
c) ICP interference check sample data provided	X		
c) To me telence check sumple dura provided	1 ^		
d) ICP serial dilution provided	X		
	A		
e) Instrument run logs provided	X		
4.4 Radiochemistry			
a) Instrument run logs provided	N/A		
=/ =:io:: difforir 1 dif 10g0 pi orrado	14/71		

Contract Verification Review (Concluded)

5.0 Problem Resolution

Summarize the findings in the table below. List only samples/fractions for which deficiencies have been noted.

Sample/Fraction No.	Analysis	Problems/Comments/Resolutions
·		
·		
leficiencies unresolved? Ye	25 No	
on the review, this data package is	complete. (Yes No	
rovide: nonconformance report or	correction request number _	and date correction request was submitted
\		10/25/06

Perchlorate Screening Quarterly Monitoring Report

Third Quarter of Calendar Year 2006 (July, August, and September 2006)

Sandia National Laboratories, New Mexico

Environmental Restoration Project, Department 6146

December 2006

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under Contract DE-AC04-94AL85000.

Perchlorate Screening Quarterly Monitoring Report Third Quarter of Calendar Year 2006 (July, August, and September 2006)

Executive Summary

Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories (SNL/NM), effective on April 29, 2004, stipulates that a select group of Sandia groundwater monitoring wells be sampled for perchlorate (NMED April 2004). This report summarizes the perchlorate screening monitoring completed during the third quarter of Calendar Year 2006 (CY2006) in response to the requirements of the Order.

During the third quarter of CY2006, groundwater samples were collected from seven wells currently in the perchlorate-screening monitoring-well network. The following groundwater monitoring wells were sampled between September 13 and September 25, 2006:

- CYN-MW1D,
- CYN-MW6,
- CYN-MW7,
- CYN-MW8,

- MRN-2,
- MRN-3D, and
- SWTA3-MW4

All samples were submitted to General Engineering Laboratories (GEL) for perchlorate analysis using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999). No perchlorate was detected above the screening level [or the Method Detection Limit (MDL)] of 4 micrograms per liter (μ g/L) in six of the seven monitoring wells and all four quality control samples.

The environmental sample from CYN-MW6 detected perchlorate at a concentration of 7.52 μ g/L. This concentration was verified by subsequent analysis of the sample with a EPA Method 6850M (EPA April 2005), which provided a result of 6.96 μ g/L. These two analytical results are in good agreement, indicating that these results are not field-collection or laboratory artifacts. As discussed in the previous quarterly reports, the source for the perchlorate in the groundwater at CYN-MW6 is unknown.

Four consecutive quarters of sampling have been completed for wells CYN-MW1D, MRN-2, and MRN-3D with no detectable concentrations of perchlorate above the screening level/MDL. Three consecutive quarters of sampling have been completed for wells CYN-MW6, CYN-MW7, CYN-MW8, and SWTA3-MW4 and there were no detectable concentrations of perchlorate above the screening level/MDL, except for samples collected from CYN-MW6.

The Order requires wells in the perchlorate-screening monitoring-well network to be sampled at least four quarters (NMED April 2004). Because monitoring wells CYN-MW1D, MRN-2, and MRN-3D have four consecutive quarters of analytical results with no detectable concentrations of perchlorate, DOE and Sandia are no longer required to continue sampling for perchlorate at these wells and they will be removed from the perchlorate-screening monitoring-well network. Data from CYN-MW1D, MRN-2, and MRN-3D will not be presented or discussed in future quarterly perchlorate screening reports. Sandia will continue to perform consecutive quarterly sampling at monitoring wells CYN-MW6, CYN-MW7, CYN-MW8, and SWTA3-MW4 for one more sampling event. These four wells will be sampled during the fourth quarter of CY2006. Per the requirements of Section VI.K.1.b of the Order (NMED April 2004), the sampling schedule at CYN-MW6 beyond the fourth quarter of CY2006 will be negotiated with the NMED.

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Appendices

Appendix A—Analytical Laboratory Certificates of Analysis for the Perchlorate Data Appendix B—Data Validation Sample Findings Summary Sheets for the Perchlorate Data

Perchlorate Screening Quarterly Monitoring Report Third Quarter of Calendar Year 2006 (July, August, and September 2006)

1.0 Introduction

Section IV.B of the Compliance Order on Consent (the Order), between the New Mexico Environment Department (NMED), the U.S. Department of Energy (DOE), and Sandia Corporation (Sandia) for Sandia National Laboratories (SNL/NM), effective on April 29, 2004, stipulates that a select group of Sandia groundwater monitoring wells be sampled for perchlorate [New Mexico Environment Department (NMED) April 2004]. This report summarizes the perchlorate screening monitoring completed during the third quarter of Calendar Year 2006 (CY2006) in response to the requirements of the Order. The outline of this report is based on the required elements of a "Periodic Monitoring Report" described in Section X.D. of the Order (NMED April 2004).

In November 2005 DOE/Sandia submitted a letter report on the status of perchlorate screening in groundwater at Sandia monitoring wells (SNL/NM November 2005). The purpose of that letter report was to summarize previous correspondence and sampling results, and to outline proposed future work to comply with NMED requirements for perchlorate screening in groundwater. Quarterly reports will be submitted for wells actively in the perchlorate-screening monitoring-well network. Based on NMED guidance (NMED January 2006), DOE and Sandia will submit each quarterly report within 90 days following the quarter that the data represent. This quarterly report is the fourth to be submitted since the November 2005 letter report; the previous quarterly reports were submitted in February 2006 (SNL/NM February 2006), June 2006 (SNL/NM June 2006), and September 2006 (SNL/NM September 2006). Quarterly reporting will continue throughout the period of perchlorate screening as required by the Order.

2.0 Scope of Activities

This report provides perchlorate screening results from the third quarter of CY2006 (July, August, and September 2006) from the wells currently active in the perchlorate screening program as shown on Figure 1 and listed in Table 1. Per the requirements of Table XI-1 of the Order, a well will be removed from the perchlorate network after four quarters unless perchlorate is detected above the screening level/Method Detection Limit (MDL) of 4 micrograms per liter (µg/L). Data from four wells identified in the Order (CYN-MW5, MWL-BW1, MWL-MW1, and NWTA3-MW2) have satisfied screening requirements, therefore, the wells have been removed from the perchlorate screening program. Data for these four wells were provided in the November 2005 letter report (SNL/NM November 2005) and the September 2006 quarterly report (SNL/NM September 2006), and are not discussed in this current report or subsequent quarterly reports.

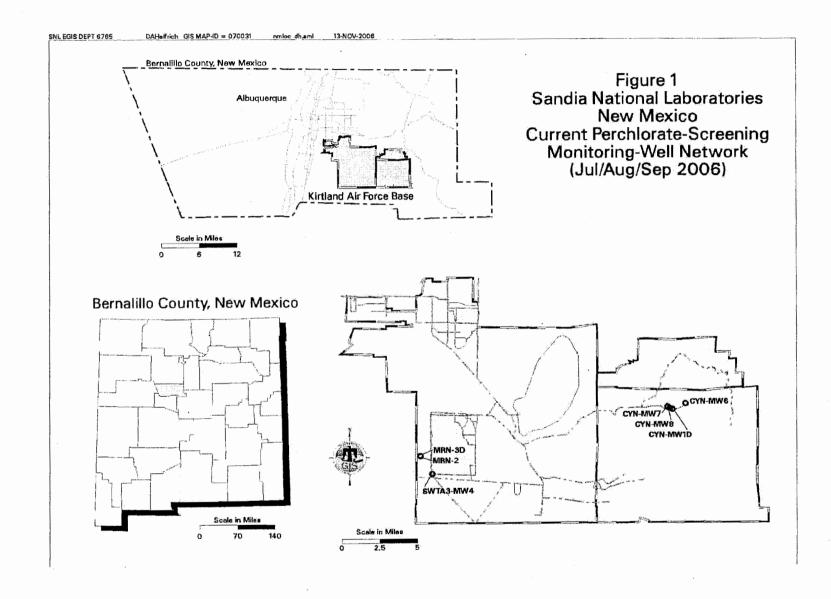


Table 1
Current Perchlorate-Screening Monitoring-Well Network
Third Quarter of CY2006 (July, August, and September)

Well	Date Sampled	Number of Consecutive Sampling Events ^a	Remaining Number of Sampling Events ^b	Sampling Method
CYN-MW1D	19-SEP-06	4	0	Bennett [™] Pump
CYN-MW6	20-SEP-06	3	1	Bennett [™] Pump
CYN-MW7	13-SEP-06	3	1	Bennett [™] Pump
CYN-MW8	14-SEP-06	3	1	Bennett ^{IM} Pump
MRN-2	21-SEP-06	4	0	Bennett ^{IM} Pump
MRN-3D	25-SEP-06	4	0	Bennett [™] Pump
SWTA3-MW4	22-SEP-06	3	1	Bennett [™] Pump

Notes:

a Includes this sampling event.

Sandia performed groundwater sampling at seven monitoring wells during September 13 through September 25, 2006. Three of these wells (CYN-MW1D, MRN-2, and MRN-3D) were identified in the Order (NMED April 2004), and the other wells were installed since the Order was finalized and are required to be sampled for perchlorate as a "new" well. Groundwater sampling activities were conducted in conformance with procedures outlined in the following investigation-specific sampling and analysis plans (SAPs):

- "Groundwater Protection Program, Mini-SAP for Fourth Quarter Fiscal Year 2006" (SNL/NM August 2006a).
- "Canyons Groundwater Monitoring, Mini-SAP for Fourth Quarter Fiscal Year 2006" (SNL/NM August 2006b).

As described in the SAPs, groundwater sampling was performed in conformance with current Sandia Environmental Restoration (ER) Project field operating procedures (FOPs). A portable BennettTM groundwater sampling system was used to collect groundwater samples from all wells. Wells were purged a minimum of one saturated screen volume before sampling.

 $^{^{\}rm b}$ Per the requirements of Table XI-1 of the Order (NMED April 2004) a well will be removed from the perchlorate-screening monitoring-well network after four quarters unless perchlorate is detected above the screening level/MDL of 4 $\mu g/L$. If perchlorate is detected above the screening level/MDL in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED.

Field water-quality measurements for turbidity, potential of hydrogen (pH), temperature, specific conductance (SC), oxidation-reduction potential (ORP), and dissolved oxygen (DO) were obtained from the well prior to collecting groundwater samples. Purging continued until four stable measurements for turbidity, pH, temperature, and SC were obtained. Groundwater stability was considered acceptable when measurements were within 10 percent nephelometric turbidity units for turbidity, 0.1 pH units, 1.0 degree Celsius, and SC within 5 percent. Field Measurement Logs documenting details of well purging and water quality measurements were submitted to the Sandia Customer-Funded Records Center.

For field quality assurance and quality control (QA/QC) purposes, two equipment blank samples were collected and analyzed for perchlorate during the third quarter CY2006 sampling event. The sampling pump and tubing bundle were decontaminated prior to installation into monitoring wells according to procedures described in FOP 94-26, "General Equipment Decontamination" (SNL/NM February 1997). Equipment blank samples were collected to verify the effectiveness of the decontamination procedure. One equipment blank was collected prior to sampling CYN-MW6 and the other was collected prior to sampling SWTA3-MW4.

Other field QA/QC samples included two duplicate samples collected at monitoring wells CYN-MW8 and MRN-3D. Duplicate samples are analyzed in order to estimate the overall reproducibility of the sampling and analytical process. In order to reduce variability caused by time and/or sampling mechanics, the duplicate samples were collected immediately after the original environmental samples.

Groundwater samples were submitted to General Engineering Laboratories (GEL) for chemical analysis for perchlorate analysis using U.S. Environmental Protection Agency (EPA) Method 314.0 (EPA November 1999). The sample identification, Analysis Request/Chain-of-Custody (AR/COC) form numbers, and the sample shipment dates are provided in Table 2. Analytical reports from GEL, including certificates of analyses, analytical methods, method detection limits (MDLs), practical quantitation limits (PQLs), dates of analyses, results of QC analyses, and data validation findings, have been submitted to the Sandia Customer-Funded Records Center.

Table 2
Sample Details for Third Quarter of CY2006 Perchlorate Sampling

Well	Sample Identification	AR/COC Number	Date Shipped		
CYN-MW1D	CYN-MW1D 081624-020		19-SEP-06		
CYN-MW6	081626-020 081626-R20	610652	20-SEP-06		
CYN-MW7	CYN-MW7 081619-020		13-SEP-06		
CYN-MW8	081620-020 081621-020	610647	14-SEP-06		
MRN-2	081627-020	610653	25-SEP-06		
MRN-3D	081629-020 081630-020	610655	25-SEP-06		
SWTA3-MW4 081631-020		610656	22-SEP-06		

Notes:

AR/COC = Analysis request/chain of custody.

3.0 Regulatory Criteria

The Order (NMED April 2004) requires that the DOE and Sandia evaluate the nature and extent of perchlorate contamination based on a screening level/MDL of 4 μ g/L. In a given monitoring well, four consecutive NDs using this screening level/MDL are considered by the NMED to be evidence of the absence of perchlorate, such that additional monitoring for perchlorate in that well is not required. If perchlorate is detected above the screening level/MDL in a specific well, monitoring will continue at that well at a frequency negotiated with the NMED.

4.0 Monitoring Results

Table 3 summarizes current and historical perchlorate results for all wells currently in the perchlorate-screening monitoring-well network. The analytical laboratory certificates of analysis for the third quarter CY2006 perchlorate data are included as Appendix A. Consistent with historical analytical results, perchlorate was not detected above the screening level/MDL in the third quarter of CY2006 in six of the seven monitoring wells. CYN-MW6 is the only well with detectable concentrations of perchlorate.

As described above, perchlorate was initially analyzed using Method 314.0 (EPA November 1999). Until 2005, this was the only approved analytical method for perchlorate analysis. Method 314.0 has been shown to be reliable at detection limits of 4.0 $\mu g/L$ and greater; however, studies have indicated that Method 314.0 is susceptible to matrix interference which may result in false positives. For this reason, Sandia uses Method 6850M (EPA April 2005) to confirm perchlorate detections, which are described as "Verification/Re-analysis" samples in Table 3. Method 6850M is a technically sound and reliable method, which is extremely selective using an analyte-specific mass spectrometry dual detection and sample matrix interferences are minimal. The MDL for Method 6850M ranges from 0.5 to 1.0 $\mu g/L$. The detected perchlorate concentrations in CYN-MW6 were verified by both analytical methods. The two analytical results from this sampling event are in good agreement (within 20%), ranging from 6.96 to 7.52 $\mu g/L$ (Table 3).

Due to the verified detection of perchlorate in the samples from CYN-MW6 during the first quarter CY2006 sampling event, Sandia submitted the "Notification of Release, Perchlorate at Well CYN-MW6, May 2006" (SNL/NM May 2006) to the NMED. DOE and Sandia were required to notify the NMED of the discovery of a previously unknown release under Section V of the Order (NMED April 2004). The concentrations of perchlorate found in CYN-MW6 in September 2006 are consistent with previously reported concentrations as shown in Figure 2 (SNL/NM May 2006, June 2006, and September 2006).

Table 4 summarizes field water quality measurements collected immediately before the analytical sample was collected. Field water quality measurements include turbidity, pH, temperature, SC, ORP, and DO. Groundwater temperature, SC, ORP, DO, and pH were measured using with an YSITM Model 620 Water Quality Meter. Turbidity was measured with a HACHTM Model 2100P turbidity meter.

Field QC samples for this sampling event consisted of two equipment blank samples and two duplicate samples. One equipment blank was collected prior to sampling CYN-MW6 and the other was collected prior to sampling SWTA3-MW4. The field QC samples were submitted for analysis along with the groundwater samples in accordance with QC procedures specified in the applicable SAPs (SNL/NM August 2006a and 2006b). No perchlorate was detected in either equipment blank above the screening level/MDL (Table 3).

Duplicate samples were collected immediately after the original environmental sample from CYN-MW8 and SWTA3-MW4. Perchlorate was not detected in CYN-MW8 or SWTA3-MW4; therefore, relative percent differences (RPD) could not be calculated for these duplicate set (Table 5). Although the concentrations between two different analytical methods for the same sample does not constitute a true duplicate sample, the RPD was calculated for the two perchlorate results from CYN-MW6 (Table 5). For CYN-MW6, the detected perchlorate concentrations are consistent with the generally-accepted quality-control criterion for duplicate sample data (RPD values < 20%).

Table 3
Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of Third Quarter CY2006.

Well ID	Sample Date	ARCOC No.	Sample No.	Perchlorate Result ^a (µg/L)	MDL ^b (µg/L)	PQL° (μg/L)	MCL ^d (μg/L)	Laboratory Qualifier ^e	Validation Qualifier ^f	Analytical Method ^g	Comments ^h
CYN-MW1D	23-Sep-04	607808	065731-016	ND	4.0	12	NE	U	-	EPA 314.0	
	22-Nov-04	608043	066418-020	ND	4.0	12	NE	U		EPA 314.0	
	09-Mar-05	608281	067433-020	ND	4.0	12	NE	U		EPA 314.0	
	06-Dec-05	609270	073545-020	ND	4.0	12	NE	U		EPA 314.0	
	27-Mar-06	609576	075982-020	ND	4.0	12	NE	U		EPA 314.0	
	27-War-00	609576	075983-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	21-Jun-06	609927	078684-020	ND	4.0	12	NE	U		EPA 314.0	•
	19-Sep-06	610650	081624-020	ND	4.0	12	NE	U		EPA 314.0	
CYN-MW6			075985-020	6.92	4.0	12	NE	J		EPA 314.0	
	00 14 00	Mar-06 609578	075986-020	7.44	4.0	12	NE	J		EPA 314.0	Duplicate sample
	23-Mar-06	609578	075985-R20	6.39	0.50	2.0	NE	Hh	HT, J		Verification/Re-analysis
			075986-R20	6.48	0.50	2.0	NE	Hh	HT, J		Verification/Re-analysis
			078687-020	6.63	4.0	12	NE	J	'	EPA 314.0	
		000000	078688-020	6.45	4.0	12	NE	J		EPA 314.0	Duplicate sample
	22-Jun-06	609929	078687-021	6.99	1.0	4.0	NE			EPA 6850M	
			078688-021	6.92	1.0	4.0	NE			EPA 6850M	Verification/Duplicate Sample
	00.0 00	610652	081626-020	7.52	4.0	12	NE	J		EPA 314.0	
	20-Sep-06		081626-R20	6.96	1.0	4.0	NE		P2	EPA 6850M	Verification/Re-analysis
CYN-MW7	20-Mar-06	609579	075987-020	ND	4.0	12	NE	U		EPA 314.0	
	13-Jun-06	609923	078676-020	ND	4.0	12	NE	U		EPA 314.0	
	13-Sep-06	610646	081619-020	ND	4.0	12	NE	U		EPA 314.0	
CYN-MW8	21-Mar-06	609580	075988-020	ND	4.0	12	NE	U		EPA 314.0	
	14-Jun-06	609924	078678-020	ND	4.0	12	NE	U		EPA 314.0	
	44.0 00	C40C47	081620-020	ND	4.0	12	NE	U		EPA 314.0	
	14-Sep-06	610647	081621-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
MRN-2	21-Jul-04	607602	065250-024	ND	4.0	12	NE	Ū		EPA 314.0	,
j	10-Nov-04	608008	066265-020	ND	4.0	12	NE	U		EPA 314.0	
	09-Dec-05	609272	073547-020	ND	4.0	12	NE	U		EPA 314.0	
	07 M 00		075754-020	ND	4.0	12	NE	U		EPA 314.0	
	07-Mar-06	609513	075755-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	06-Jun-06	609919	078671-020	ND	4.0	12	NE	U		EPA 314.0	
l	21-Sep-06	610653	081627-020	ND	4.0	12	NE	U		EPA 314.0	

Table 3
Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of Third Quarter CY2006.

Well ID	Sample Date	ARCOC No.	Sample No.	Perchlorate Result ^a (µg/L)	MDL ^b (µg/L)	PQL° (μg/L)	MCL ^d (µg/L)	Laboratory Qualifier ^e	Validation Qualifier	Analytical Method ^g	Comments ^h
MRN-3D	28-Jun-04	607603	065252-024	ND	4.0	12	NE	U		EPA 314.0	
	11-Nov-04	608009	066263-020	ND	4.0	12	NE	U		EPA 314.0	·
			066264-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	12-Dec-05	609274	073549-020	ND	4.0	12	NE	U		EPA 314.0	
	08-Mar-06	609514	075757-020	ND	4.0	12	NE	U		EPA 314.0	
	08-Jun-06	609920	078672-020	ND	4.0	12	NE	U		EPA 314.0	
	25-Sep-06	610655	081629-020	ND	4.0	12	NE	U		EPA 314.0	
			081630-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
SWTA3- MW4	01-Mar-06	609509	075746-020	ND	4.0	12	NE	U		EPA 314.0	
	12-Jun-06	609922	078674-020	ND	4.0	12	NE	U		EPA 314.0	
			078675-020	ND	4.0	12	NE	U		EPA 314.0	Duplicate sample
	22-Sep-06	610656	081631-020	ND	4.0	12	NE	U		EPA 314.0	
Field Quality	Control San	iples –Septe	mber 2006								
CYN-EB1	19-Sep-06	610651	081625-020	ND	4.0	12	NE	U		EPA 314.0	EB prior to sampling CYN-MW6
GWPP-EB1	21-Sep-06	610654	081628-020	ND	4.0	12	NE	U		EPA 314.0	EB prior to sampling SWTA3-MW4

Notes-

aResult

Values in **bold** exceed the screening level/MDL.

ND = not detected (at method detection limit).

 μ g/L = micrograms per liter.

^bMDL

Method detection limit. The minimum concentration that can be measured and reported with 99% confidence that the analyte is greater than zero, analyte is matrix specific.

Practical quantitation limit. The lowest concentration of analytes in a sample that can be reliably determined within specified limits of precision and accuracy by that indicated method under routine laboratory operating conditions.

^dMCL

Maximum contaminant level. Established by the U.S. Environmental Protection Agency Primary Water Regulations (40 CFR 141.11(b)), and subsequent amendments or the New Mexico Environmental Improvement Board in Title 20, Chapter 7, Part 1 of the New Mexico Administrative Code (20MAC 7.1).

NE = not established.

^eLab Qualifier

U = Analyte is absent or below the method detection limit.

H = Analytical holding time was exceeded.

h = Prep holding time was exceeded.

J = Amount detected is below the practical quantitation limit.

Table 3 (concluded) Summary of Perchlorate Screening Analytical Results for the Current Monitoring-Well Network, as of Third Quarter CY2006.

Validation Qualifier

If cell is blank, then all quality control samples meet acceptance criteria with respect to submitted samples and no qualifier was assigned.

HT = The holding time was exceeded for the associated sample analysis.

J = The associated value is an estimated quantity.

P2 = Insufficient quality control data to determine laboratory precision.

^gAnalytical Method

EPA 314.0: U.S. Environmental Protection Agency, November 1999, "Perchlorate in Drinking Water Using Ion Chromatography," EPA 815/R-00-014.

EPA 6850M: U.S. Environmental Protection Agency, April 2005, "Perchlorate in Water, Soils, and Solids Using High Performance Liquid

Chromatography/Electrospray Ionization/Mass Spectrometry (HPLC/ESI/MS)," draft, Method 6850.

^hComments

EB = Equipment blank sample.

Figure 2
Perchlorate Results for CYN-MW6

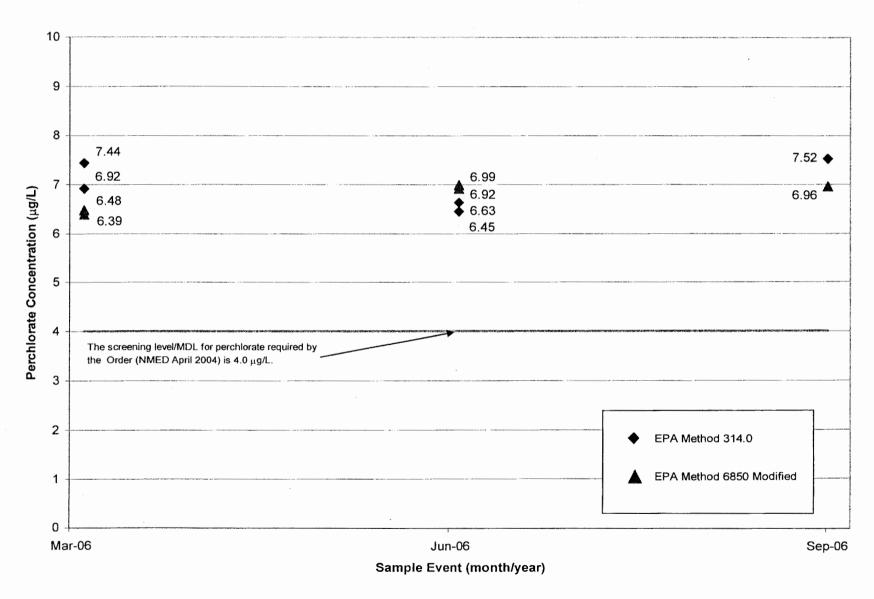


Table 4 Perchlorate Screening Groundwater Monitoring Field Water Quality Measurements^a, Third Quarter of CY2006

Well ID	Sample Date	Temperature (°C)	Specific Conductivity (µmho/cm)	Oxidation Reduction Potential (mV)	pΗ	Turbidity (NTU)	Dissolved Oxygen (% Sat)	Dissolved Oxygen (mg/L)
CYN-MW1D	19-Sep-06	20.05	422	-78.5	8.46	22.0	7.0	0.63
CYN-MW6	20-Sep-06	16.65	1061	313.2	7.02	1.14	24.8	2.42
CYN-MW7	13-Sep-06	19.92	561	60.9	7.36	3.39	23.6	2.14
CYN-MW8	14-Sep-06	18.60	731	148.5	7.37	1.02	19.7	2.03
MRN-2	21-Sep-06	18.39	420	326.6	7.57	0.65	70.8	6.63
MRN-3D	25-Sep-06	20.81	450	303.9	7.44	0.46	2.5	0.23
SWTA3-MW4	22-Sep-06	18.74	426	322.9	7.65	1.33	71.5	6.65

Notes:

^aField measurements made immediately before the groundwater sample was collected.

°C % Sat = degrees Celsius. = percent saturation.

μmho/cm

= micromhos per centimeter.

mg/L

= milligrams per liter.

mΫ

= millivolts.

NTU

= nephelometric turbidity units.

= potential of hydrogen (negative logarithm of the hydrogen ion concentration). pН

Table 5
Duplicate Sample Results for Third Quarter of CY2006 Perchlorate Sampling

Well ID / Parameter	Environmental Sample (R1)	Duplicate Sample (R2)	RPD
	(μί		
CYN-MW6			
Perchlorate, in this case: R1 = EPA Method 314.0 R2 = EPA Method 6850M	7.52	6.96	8
CYN-MW8			
Perchlorate (EPA Method 314.0)	· ND	ND	NC
SWTA3-MW4			
Perchlorate (EPA Method 314.0)	ND	ND	NC

Notes:

RPD = Relative percent difference is calculated with the following equation and rounded to nearest whole number:

$$RPD = \frac{|R_1 - R_2|}{[(R_1 + R_2)/2]} \times 100$$

where R₁ = analysis result, and

R₂ = duplicate analysis result.

NC = Not calculated for non-detected values.

ND = Not detected above the method detection limit.

μg/L = micrograms per liter.

The analytical data were reviewed and qualified in accordance with AOP 00-03, "Data Validation Procedure for Chemical and Radiochemical Data." (SNL/NM December 2003). No problems were identified with the analytical data that resulted in the qualification of the data as unusable. The data are acceptable and reported QC measures are adequate. The data validation sample findings summary sheets for the perchlorate data are included as Appendix B. No variances or nonconformances in field activities or field conditions from requirements in the Groundwater Protection Program mini-SAP or the Canyons Groundwater Monitoring mini-SAP (SNL/NM August 2006a and 2006b) were identified during the Third Quarter CY2006 sampling activities.

5.0 Summary and Conclusions

Based on the analytical data presented in Table 3 and in previous reports, the following statements can be made:

- Since June 2004 (the start of sampling required by the Order), perchlorate has only been detected above the screening level/MDL in one of the wells (CYN-MW6) in the perchlorate-screening monitoring-well network.
- The perchlorate detected in CYN-MW6 was verified by two analytical methods (EPA Method 314.0 and EPA Method 6850M). The two analytical results are in good agreement (7.52 and 6.96 μg/L), with calculated RPD of 8 (Table 5). These results are consistent with data presented in the previous quarterly reports (Figure 2) (SNL/NM June 2006, SNL/NM September 2006).
- Four consecutive quarters of sampling have been completed for wells CYN-MW1D, MRN-2, and MRN-3D. Perchlorate has not been detected above the screening level/MDL for the four sampling events at these wells. Per the requirements of Table XI-1 of the Order (NMED April 2004) these wells will be removed from the perchlorate-screening monitoring-well network, and data will not be presented or discussed in future quarterly perchlorate sampling reports.
- Three consecutive quarters of sampling have been completed for CYN-MW6, CYN-MW7, CYN-MW8, and SWTA3-MW4. Perchlorate has not been detected above the screening level/MDL for the samples collected from CYN-MW7, CYN-MW8, and SWTA3-MW4.

As discussed in the previous quarterly reports (SNL/NM June 2006, SNL/NM September 2006), the source for the perchlorate in the groundwater at CYN-MW6 is unknown. Soil sampling completed in 2001 at Solid Waste Management Unit (SWMU) 65—Lurance Canyon Explosives Test Site, or SWMU 94—Lurance Canyon Burn Site did not reveal detectable concentrations of perchlorate in site soils (NMED January 2001; Skelly and Griffith January 2003; and SNL/NM June 2006).

Sandia will continue to perform consecutive quarterly groundwater sampling at SWTA3-MW4, CYN-MW6, CYN-MW-7, and CYN-MW8 during the fourth quarter of CY2006 (October, November, or December).

Per the requirements of Section VI.K.1.b of the Order (NMED April 2004), any sampling schedule at CYN-MW6 beyond the fourth quarter of CY2006 will be negotiated with the NMED. In addition, if these detectable concentrations continue to be found in CYN-MW6, then the Order requires DOE and Sandia to determine the nature and extent of perchlorate contamination and complete a Corrective Measures Evaluation for perchlorate-impacted groundwater in the vicinity of CYN-MW6.

6.0 References

New Mexico Environment Department (NMED) January 2001. New Mexico Environment Department. Perchlorate Study Analytical Data (Soil), transmitted from Pinnacle Laboratories, Albuquerque, NM to Julie Wanslow and Will Moats, NMED HWB. Two data packages submitted January 29, 2001.

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Appendix A

Analytical Laboratory Certificates of Analysis for the Perchlorate Data

Internal Lab			,	ANAT	YSIS REQU	IESI A	AND	CHA	N OF CU	SIOD	Y	Pa	ge <u>1 of 1</u>
Batch No. N	4				SMO Use							AR/COC	610652
Dept. No./Mail Stop:	B146/1087		Date Samp	les Stupp	ed 9-70-1	06	Project	/Task No.	8026.01.06			Waste Characterization	
Project/Task Manager:	Dwight Stockham		Carrier/Wa				SMO A	uthorizatio	n: 04	lun 5	BALLO	-Send preliminary/copy repo	ort to:
Project Name:	CYN GWM		Lab Contac	t:	Edle Kent/803-556-8	171		ct#: PO2					
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081626-005	CYN-MW6		164		09/20/06 0934	GW	AG	4x1 L	4C	G	SA	TPH Diesel (8015)	201
081626-006	CYN-MW6		164		09/20/06 0936	GW	G	3x40 m	HCL	G	SA	TPH Gasoline (8015)	002
081626-018	CYN-MW6		164		09/20/06 0938	GW	₽	250 ml	H2\$O4	G	SA	NPN (353.1)	203
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Received by			Org.	Date	Time		6. Rec	elved by			Org.	Date	Time

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Certificate of Analysis

Company: Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm, 4276

1515 Bubank SB

Albuquerque, New Mexico 87123

Contact: Project

Ms. Pamela M. Puissant Level C Data Package GW

Report Date: October 26, 2006

l of 2

Time Batch Method

Client Sample ID:

081626-R20

Page

Sample ID:

173772001

Project: Client ID:

SNLSGW SNLS002

AnalystDate

Matrix: Collect Date:

Ground Water 20-SBP-06 09:39

Receive Date: Collector:

21-SBP-06 Client

RL

4.00

Client Desc.: CYN-MW6

DF

Time

0904

Qualifier LC-MS/MS Perchlorate Federal

EPA 6850 Modified Perchlorate by LC-MS/MS

Perchlorate

Result

1.00

DL

ag/L

20 MAP 10/17/06 1149 579549

The following Prep Methods were performed

Method Description

Analyst MAP

Date

10/17/06

Units

Prep Batch

579547

SW846 6850 Modified BPA 6850 Perchlorate Extraction in Liquid

The following Analytical Methods were performed

Description

Analyst Comments

SW846 6850 Modified

Notes:

Method

The Qualiflers in this report are defined as follows:

Recovery or %RPD not within acceptance limits and/or spike amount not compatible with the sample or the duplicate RPD's are not applicable where the concentration falls below the effective PQL.

Indicates analyte is a surrogate compound.

 \mathbf{B} The analyte was found in the blank above the effective MDL.

Analytical holding time was exceeded H

Estimated value, the analyte concentration fell above the effective MDL and below the effective PQL

The response between the confirmation column and the primary column is >40%D

The analyte was analyzed for but not detected below this concentration. For Organic and Inorganic analytes the result is less than the effective MDL. For radiochemical analytes the result is less than the Decision Lovel

Presumptive evidence that the analyte is not present. Please see narrative for further infromation.

The percent difference is greater than 70%.

- The 2:1 depletion requirement was not met for this sample
- Prep holding time exceeded

The above sample is reported on an "as received" basis.

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Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276 Address:

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact: Project:

Ms. Pamela M. Puissant Level C Data Package GW

Report Date: October 26, 2006

Page 2 of 2

Client Sample ID: Sample ID:

081626-R20

Project: Client ID:

SNLSGW SNLS002

Parameter

173772001 Qualifier Result

RL

Units

AnalystDate

Time Batch Method

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Edith Kent.

Hexberton maiere 10/26/06

Reviewed by

And the second second

Internal Lab	,		F	NAL	YSIS REQU	ES I A	MD (CHAIN	I OF CO	SIOD	Y ,		² age 1 of 1	_
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Project/Task Manager:	Dwight Stockham		Carrier/Way	till No.	6891	7-11	SMO A	uthorizatio	n:_ <i>QV t</i>	un_	gna	-Send preliminary/copy re	port to:	
Project Name:	CYN GWM		Lab Contac	t:	Edie Kenl/803-556-81	71 .	Contrac	#: PQ 21	671 -					
Record Center Code:	ER/1333/DAT		Lab Destina	tion:	GEL		١,					Released by COC No.:		_
Logbook Ref. No.;	ER 058		SMO Contact	/Phone:	Pam Puissant/505-84	4-3185						✓ Validation Required		
Service Order No.	CF#003-07		Send Report	to SMO:	Lorraine Herrera/505-	844-3199						Bill To:Sandia National Labs (Acc	counts Payable	2)
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081624-018	CYN-MW1D		384		09/19/06 0943	GW	Р	250 ml	H2SO4	G	SA	NPN (353.1)		Ø1
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Sample	Carolyn Daniel			CYD	SNL/6031/284-9986/	221-9153			ļ					Lab Use
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Certificate of Analysis

Sandia National Laboratories Company:

Address: MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Ms. Pamela M. Puissant Contact: Project: Level C Data Package

Client Sample ID: Sample ID: Matrix:

Collect Date:

081624-020 172242003 Ground Water 19-SEP-06 09:44

Receive Date: Collector:

20-SEP-06 Client

Project: Client ID:

SNLS00401 SNLS002

Report Date: October 16, 2006

Client Desc.: CYN-MWID

Qualifier Result RLUnits Time Batch Method Parameter \mathbf{DL} DF AnalystDate

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC

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The following Analytical Methods were performed

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Building	Room	1		Referen	ce LOV(availal	ble at SI	MO)		*	Albuquerque, NM 87185	-0154	1723319
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Sample NoFraction	Sample Location Detail	Depth (ft)	No.	Collected	Matrix	Type	Volume	ative	Method	Туре	Requested		ID ID
081626-005	CYN-MW6	164		09/20/06 0934	GW	AG	4x1 L	4C	G	SA	TPH Diesel (8015)		101
081626-006	CYN-MW6	164		09/20/06 0936	GW	G	3x40 ml	HCL	G	SA	TPH Gasoline (8015)		002
081626-018	CYN-MW6	164		09/20/06 0938	GW	P	250 ml	H2SO4	G	SA	NPN (353.1)		203
081626-020	CYN-MW6	164		09/20/06 0939	GW	Р	250 ml	4C	G	SA	Perchiorate (314.0)		004
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Certificate of Analysis

Company: Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Contact:

Albuquerque, New Mexico 87123

Ms. Pamela M. Puissant

Project:

Level C Data Package GW

Client Sample ID: Sample ID:

Matrix:

Collect Date: Receive Date:

Qualifier

Collector:

081626-020 172331004

AQUEOUS 20-SEP-06 09:39

21-SEP-06

Client

Project: Client ID: SNLSGW SNLS002

Client Desc.: CYN-MW6

DF

AnalystDate

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

0.00752

Result

0.004

DL

RL

0.012

mg/L

Units

1 MAR110/02/06 1746 572325 1

Time Batch Method

Report Date: October 11, 2006

The following Analytical Methods were performed

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Description

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Analyst Comments

EPA 314.0 DOE-AL

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Project/Task Manager:	Dwight Stockham		Camer/Wa		422		SMO A	uthorizati	m: 94 2	and a	and a	-Send preliminary/copy	report to:	1
Project Name:	CYN GWM		Lab Contac	at:	Edie Kent/803-556-8		Contra	ct#: PO 2	1671		-	, .,,		
Record Center Code:	ER/1333/DAT		Lab Destina	ation:	GEL							Released by COC No.:	:	
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Service Order No.	CF#003-08 7				Lorraine Herrera/505	844-3199	1	,				Bill To:Sendia National Labs (Accounts Payal	ole)
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Building	Room				Referen	ice LOV(avalla	ble at S	MO) ノタ	1636		Albuquerque, NM 8718	5-0154	
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roject Name:	CYNGWM		Lab Contac	t	Edie Kent/803-556-81	171	Contrac	#: PO 2	1671]	topon to.	
ecord Center Code:	ER/1333/DAT		Lab Destina	ation:	GEL		1			-		Released by COC No.		
ogbook Ref. No.:	ER 058		SMO Contact	/Phone:	Pam Puissant/505-84	4-3185	9	P. S	BOTTE	ORPE	TR.	☑ Validation Required	*	
ervice Order No.	CF#003-09/7		Send Report	to SMQ:	Lorraine Herrera/505-	844-3199	1 ~		- •			Bill To:Sandia National Labs (Accounts Pava	ble)
ocation	Tech Area							***			2/	P.O. Box 5800 MS 015		,,
uilding	Room		1		Referen	ce LOV(availa	hle at S	MO) /7	1770)%	Albuquerque, NM 8718		
- ucurg	ER Sample ID	or	Pump	ER Site		Sample		ntainer	Preserv-	Collection	Sample	Parameter & Me		Lab Sample
sample NoFraction			Depth (ft)	No.	Collected	Matrix	Type	Volume	ative	Method	Type	Requested		ID.
081620-018	CYN-MW8		364		09/14/06 1010	GW	P	250 ml	H2SO4	G	SA	NPN (353.1)		601
081620-020	CYN-MW8	•	364		09/14/06 1012	GW	Р	250 mi	4C	G	SA	Perchlorate (314.0)		003
081621-018	CYN-MW8		364		09/14/06 1010	GW	P	250 ml	H2SO4	G		 	1 (20)	æ2
							 			<u> </u>		NPN (353.1) Perchlorate (314.0)		
081621-020	CYN-MW8		364		09/14/06 1012	GW	P	250 ml	4C	G	DU	Perchlorate (314.0)	10 x	DV4
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MMA	☐Yes ☑No	Ref.			Sample Tracking		Smo U	\$e	Special Instr			vents	Abnorma	
ample Disposal	Return to Client		isposal by la		Date Entered (mm/dd	377			4	Yes		-	Condition	is on
urnaround Tim	e 7 Day	15 Dar	y <u>년</u> 3		Entered by:				Level D Pack		✓ Yes	□ No	Receipt	
etum Samples By:		<u> </u>		Negotia	TAT bat	QC inits.			*Send report	to:				
	Name	Si	gnature	Init	Company/Orga	nization/Ph	none/Cel	lular	Tim Jackson	Org.6146/	MS 1087/50	<u>05-284-2547</u>		
iample														Lab Use
'eam	Tim Jackson	Til	1/4-	79	Gram/6146/284-2547	/250-5197			1					
lembers	Alfred Santillanes	11/1	Stille	in	Weston/8146/844-51	30/228-071	10		1					
		77						······································	1					
	1111	4-			,				*Piease list a	s separate	report.			
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	ONA Zh		Org/a'Y	Date4		300	5.Relin	quished b	y		Org.	Date	Time	
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. Received by			Ora.	Date	Time		6 Per	sheed by			Om	Data	Time	

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Certificate of Analysis

Company;

Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Contact:

Albuquerque, New Mexico 87123

Project:

Ms. Pamela M. Puissant Level C Data Package GW

Client Sample ID: Sample ID:

081619-020 171636002

Ground Water

Matrix: Collect Date:

13-SEP-06 10:10

Receive Date:

14-SEP-06

Collector:

Qualifier

Project: Client ID:

SNLSGW SNLS002

AnalystDate

Report Date: October 4, 2006

Client

Client Desc.: CYN-MW7

Parameter Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

Perchlorate

EPA 314.0 DOE-AL

ND

Result

0.004 0.012

RL

DL

mg/L

Units

1 MAR1 09/20/06 1446 569662 1

Time Batch Method

The following Analytical Methods were performed

Method

Description

Analyst Comments

1

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Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Ms. Pamela M. Puissant Contact;

Project: Level C Data Package GW

Client Sample ID:

Sample ID:

Matrix:

Collect Date:

Receive Date:

171770004 Ground Water 14-SEP-06 10:12

081621-020

15-SEP-06

Client

Report Date: October 5, 2006

Project: Client ID:

SNLSGW SNLS002

Client Desc.: CYN-MW8

Collector: Parameter Qualifier Result \mathbf{p} L RLUnits DF AnalystDate Time Batch Method

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

ND

0.004 0.012 mg/L

1 MAR109/21/06 1721 569662 1

The following Analytical Methods were performed

Analyst Comments Method Description

EPA 314.0 DOE-AL

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276 Address:

1515 Eubank SE

Albuquerque, New Mexico 87123

Ms. Pamela M. Puissant Contact: Project: Level C Data Package GW

Client Sample ID:

Sample ID: Matrix:

Collect Date: Receive Date:

15-SEP-06

Client

081620-020

171770003

Ground Water

14-SEP-06 10:12

Report Date: October 5, 2006

SNLSGW Project: Client ID: SNLS002

Client Desc.: CYN-MW8

Collector: Qualifier Result RL Units DF Parameter \mathbf{DL} AnalystDate Time Batch Method

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

Perchlorate

ND

0.004

0.012

mg/L

1 MAR109/20/06 1724 569662 1

The following Analytical Methods were performed

Analyst Comments Method Description

EPA 314.0 DOE-AL

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Certificate of Analysis

Company: Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact:

Ms. Pamela M. Puissant

Project:

Level C Data Package GW

Client Sample ID: , Sample ID: Matrix: Collect Date:

081627-020

172584001 Ground Water

21-SEP-06 09:57

Receive Date: Collector:

26-SEP-06

RL

0.012

Project: Client ID:

SNLSGW SNLS002

AnalystDate

Result

Client

·Client Desc.: MRN-2

DF

Parameter Qualifier Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

Perchlorate

ND

0.004

DL

mg/L

Analyst Comments

Units

1 MAR110/02/06 1831 572325 1

Time Batch Method

Report Date: October 11, 2006

The following Analytical Methods were performed

Method Description

EPA 314.0 DOE-AL

19

	Internal Lab			NAL	YSIS REQU	EST.	AND	CHAI	N OF CU	STOD'	Y		Page 1 of 1	
	Batch No.	4			SMO Use ,							AR/COC	610	653
	Dept. No./Mail Stop:	10331/1042	Date Sample	es Shippe	d: 9/25/06	1	Project/	Task No. 9	6750.01.01.05	.1		Waste Characterization		
	Project/Task Manager:	Franz Lauffer	Carrier/Way	bill No.	6917			thorization		F 5	was !	-Send preliminary/copy i		
	Project Name:	GWPP	Lab Contact	t: -	Edie Keni/803-656-81			# PO 216	71				oportio.	
	1	NA	Lab Destina	-	GEL	···	9.0					Released by COC No.:		
		NA	SMO Contect	-	Pam Puissant/505-84	4-9185		SUE	BOTTE.	OPV et	L	Validation Required		
	Service Order No.	CF 084-07	Send Report		Lorraine Herrera /505		Δ.					Bill To:Sandia National Labs (A		
	Location	Tech Area	осла кероп	io diio.	LOTTBINE I RATE D 1000	F041-313	7					} ·		
		Room			Defere			able at	was 12	258	341%	P.O. Box 5800 MS 0154		
	Building			ED Cital								Albuquerque, NM 87185		
	Sample NoFraction	ER Sample ID or Sample Location Deta	eil Depth (ft)	ER Site	Date/Time(hr) Collected	Sample Matrix	Type	.Volume	Preserv- '	Collection Method		Parameter & Me		Lab Sample
	Sample NoFraccion		in Depui (it)	_	Collected	MEGUIX	type	*ACHTILIN	auve .	Megliod	Туре	Requested	<u> </u>	ID.
t	081627-020	MRN-2	442	MA	092106/0957 .	GW	Р	250 ml	4C	G	. SA	Perchlorate (314.0)		001
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	RMMA	Yes No	Ref. No.	<u> </u>	Sample Tracking	.1	Smo L		Special Instruct	ione/OC B	le au tramar	-L	Abnormal	
	Sample Disposal		Disposal by I	ah .	Date Entered(mm/do	thad -	OIAIO C	30	EDD 🖸	Yes [Conditions	on
	Turnaround Tin			30 Day	Entered by:	11 <u>77;</u>			Level D Packag		✓ Ye	s 🔲 Na	Receipt	
			D Day		ited TAT	QC inits			*Send report to:		٦ 16	> 1,110	- receipt	
	Return Samples By		<u></u>	init				- N. d - n	· ·			W.4 R.F.179	1	
	D	Name	Signature	120	Company/Orga			Sans:	Tun Jackson/O	KG. 0 140/A	108/1/2			1 == 11==
	Sample	Robert Lynch	Mynen		Weston/6146/844-4	013/250-	090		ł					Lab Use
	Team	Alfred Santillanes	144971	Mr. M	vvestorv6146/844-5				1				1	
	Members	Willam J Gibson 1/2	wan schi	10/12	Weston/6146/284-5	232/239-	7367		j				1	
			g i v	,	·								1	
		41							'Please list as	separate r	eport.		}	•
	1.Relinquished by		mitos by	Date		030	4,Reli	nquished b	у		Org.	Date	Time	
	1. Received by	1 2. Kmg 40	NO OrgAYG	Date	125/06 Time //	30	4. Rec	cived by			Org.	Date	Time	2 ,
	2.Relinquished by	Pla 9 Son G	our Orginit	% Date		240	5.Reli	nquished b	у		Org.	Date	Time	9
	2. Received by Cot	Saure	Org. G-C	_Date	Time -	GYN	5. Rec	ceived by			Ørg.	Date	Time	9
	3.Relinquished by		Org.	Date	9/26/06 Time		6.Reli	nguished b	у		Org.	Date	Time	
	3. Received by		Org.	Date	Time		6. Rei	ceived by			Org.	Date	Time	B

Internal Lab	A			ANAL	YSIS REQU	ESI A	ND	CHAI	N OF CL	JSTOD	Υ		Page_1 of 1	<u></u>
Batch No. //	4				SMO Use				-			AR/COC .	610)651
Dept. No./Mail Stop:	6146/1087		Date Sarap	es Shipp	ed: 9-19-10	6	Project	Task No.	98026.01.06	1		Waste Characterization		
Project/Task Manager:	Dwight Stockham		Carrier/Way	JOHNO.	18917						gna	-Send preliminary/copy re		
Project Name:	CYN GWM	······	Lab Contac	t	Edie Kent/803-556-81	171	Contra	d#: P02	n:_ <i>940</i> 1671		700		•	
Record Center Code:	ER/1333/DAT		Lab Destina	tion:	GEL			· • • • • •	0पाज			Released by COC No.:		
Logbook Ref. No.:	ER 058		SMO Contact	VPhone:	Pam Puissant/505-84	4-3185	1 7	0000	eace		7	☑ Validation Required		_
Service Order No.	CF#003-07		Send Report	to SMO:	Lorraine Herrera/505	844-3199	1					Bill To:Sandia National Labs (Ac	counts Payab	le)
Location	Tech Area	***************************************								1	41/	P.O. Box 5800 MS 0154		
Building	Room	· ·	İ		Referen	ce LOV(availa	ble at S	MO) / 7	1224	2.7.	Albuquerque, NM 87185-0		
	ER Sample ID	OT .	Pump	ER Site	Date/Time(hr)	Sample		ntainer	Preserv-	Collection		Parameter & Meth		Lab Sample
Sample NoFraction	Sample Location	Detail	Depth (ft)	No.	Collected	Matrix	Туре	Volume	ative	Method	Туре	Requested	/	ID ID
081625-005	CYN-EB1		NA	VIA	09/19/06 1040	DİW	AG	4x1 L	4C	G	EB	TPH Diesel (8015)		005
081625-006	CYN-EB1		NA	ì	09/19/06 1041	DIW	G	3x40 m	HCL	G	EB ·	TPH Gasoline (8015)		006
081625-018	CYN-EB1		NA		09/19/06 1042	DIW	Р	250 ml	H2SO4	G	EB	NPN (353.1)		102
081625-020	CYN-EB1		NA	4	09/19/06 1043	DIW	Р	250 ml	4¢	G	_ EB	Perchlorate (314.0)	,	<i>c</i> 0 4
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						·								
RMMA .	Yes No	Ref.			Sample Tracking		Sho L	se	Special Instr			· ·	Abnormal	
Sample Disposal	Return to Client	₹ D	isposal by k		Date Entered(mm/dd	γγ)			EDD 🗹	Yes 🗌			Condition	son
Furnaround Tim	e 7 Day	15 Da	y (3	0 Day	Entered by:				Level D Pack	age	☑ Yes	: □ No	Receipt	
Return Samples By:				Negotia	ted TAT	QC Inits			*Send report	to:		•		
	Name	Si	gnature	init	Company/Orga	nization/Pt	one/Ce	llular	Tim Jackson	/Org.6146/I	MS 1087/50)5- 284-25 47		
Sample	Carolyn Daniel	0	2011	CU	SNL/6031/2849986/2	21-9153			1					Lab Use
Team	Robert Lynch	11/2	me	81	Weston/6146/844-40	13/250-709	10	-	1.					
Members	Alfred Santillanes	11017	Stiller	do	Weston/6146/844-51				1					
		11	2017-2						·			,		
									*Piease list a	s separate	report.			
1.Relinquished by	1	Ų.	Org. 603	Date !		0	_	quished b	у		Org.	Date	Time	
1. Received by	18 Te la	SMI	Org-6/4/6	. Date	1/9/06 Time //			elved by			Org.	Date	Time	
21 TOTAL IQUIDITION		140				70		quished b	y .		Org.	Date	Time	
2. Received by	yaran Holder		Org.	Date	11 00 000	15		eived by		1 .	Org.	Date	Time	
3.Relinquished by	<u>/</u>		Org.	Date	Time			quished b	<u>y</u>		Org.	Date	Time	
Received by			Ord.	Date	Time		IS Rec	eived by			Ora	Oote	arriT	

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Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276 Address:

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact: Ms. Pamela M. Puissant Project:

Level C Data Package

Client Sample ID: Sample ID:

U·

Matrix:

081625-020 172242004 Ground Water

Collect Date: Receive Date: Collector:

19-SEP-06 10:43 20-SEP-06

Result

Client

Project: Client ID:

SNLS00401 SNLS002

AnalystDate

Client Desc.: CYN-EB1

DF

Qualifier Parameter Ion Chromatography Federal

EPA 314.0 Perchlorate by IC

Perchiorate

ND

0.004

DL

0.012

Units

mg/L

RL

1 MAR1 10/02/06 1630 572322 1

Time Batch Method

Report Date: October 16, 2006

The following Analytical Methods were performed

Description **Analyst Comments** Method

EPA 314.0

	Internal Lab		<i>F</i>	ANAL	YSIS REQU	EST	AND	CHA	IN OF CU	STOD	Y	•	Page 1 of 1	
	Batch No. N/	A			SMO Jose /							AR/COC	6106	355
	DepL No./Mail Stop.	10331/1042	Date Sample	s Shippe	ed: 9/25/0	6	Project/	Task No. 9	96750.01.01.05	0		Waste Characterization	1	
	Project/Task Manager	Franz Lauffer	Carrier/Way	bill No.	69177	2	SMO A	uthorizatio	n:	home 5	NUI	-Send preliminary/copy r	eport to:	
	Project Name:	GWPP	Lab Contact	:]	Edie Kent/803-556-81	171	Contrac	1 # PO 21	671					
	Record Center Code.	NA	Lab Destina	tion:	GEL		574	ne e	othe al	Cont.		Released by COC No.:		
	Logbook Ref. No.:	NA	SMO Contact	Phone:	Pam Puissant/505-84	4-3185]	D a	MUG OR	VGIL		☑ Validation Required		
	Service Order No.	CF 084-07	Send Report t	a SMO:	Lorraine Herrera /505	844-319	9					Billi To:Sandia National Labs (A	ccounts Payable)	
	Location	Tech Area	_						177	OF	3/63/	P.O. Box 5800 MS 0154		
	Building	Room	<u> </u>		Referer					258	24 18	Albuquerque, NM 87185		
		ER Sample ID or	1	ER Site	Date/Time(hr)	Sample		ntainer	Preserv-	Collection	Sample	Parameter & Me		Lab Sample
	Sample NoFraction	Sample Location Detail	Depth (ft)	No.	Collected	Matrix	Туре	Volume	ative	Method	Туре	Requested		ID
	081629-020	MRN-3D	683	NA	9/25/2006 0938	GW	P	250 ml	4C	G	SA	Perchlorate (314.0)		003
	081630-020	MRN-3D	683	4	9/25/2006 0938	GW	Р	250 ml	. 4C	G	מם	Perchlorate (314.0)	ild q	004
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	RMMA		. No.		Sample Tracking		Smo U	se	Special Instruct			its	Abnormal	
	Sample Disposal		Disposal by la		Date Entered(mm/dd	<i>l</i> <u>yy)</u>			EDD 🖸	Yes		s 🗌 No	Conditions of	on
	Turnaround Tin		Day <u>년</u> 3		Entered by:				Level D Package		☑ Yes	s ∟ No	Receipt	
-	Return Samples By:				ted TAT	QC inits			"Send report to:				1	
			Signature	Init	Company/Organ Weston/6146/844-40			ellular	Tim Jackson/OI	KG, 6146/N	IS. 1087/ 2	<u>84-2547</u>		Lab Use
	Sample	Robert Lynch	JICO J						•					Lab Use
	Team	3.43	14150	ce a	Mreston/6146/844-51	30/228-0	7/10		1				1	
	Members	Carolyn Daniel	4 7	-	SNL/6146/284-9986			 		VDD 4 100				
				 					Last Well For GV *Please list as s					
	1.Relinguished by	VISCULA	Org. 6/4	Date 1	1566 Time 10	10	4.Relin	quished b		eparate re	Org.	· Date	. Time	9
	1. Received by	2 4 9 Gue Six		Date/		70	-	eived by	· .		Org.	Date	Time	
		3612 60	Org.		C/A Time			quished b	У	************	Org.	Date	Time	
	2. Received by	Ofenia	Org. G-&)		TOBine 1			eived by			Org.	Date	Time	•
	3.Relinquished by		Org.	Date	9/26/06Time		6.Relia	quished b	у		Org.	Date	Time	2
	3. Received by		Org.	Date	Est Time		6, Rec	eived by			Org.	Date	Time	е

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Certificate of Analysis

Company: Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact:

Ms. Pamela M. Puissant

Project:

Level C Data Package GW

Client Sample ID: Sample ID:

Matrix: Collect Date: 081629-020 172584003 Ground Water

25-SEP-06 09:38 26-SEP-06

Receive Date: Collector:

Client

Project:

Client ID:

SNLSGW SNLS002

AnalystDate

Client Desc.: MRN-3D

DF

Parameter Qualifier

Ion Chromatography Federal

Perchlorate

EPA 314.0 Perchlorate by IC, contingent

ND

Result

0.004

DL

RL

0.012

mg/L

Units

1 MAR110/02/06 1901 572325

Time Batch Method

Report Date: October 11, 2006

The following Analytical Methods were performed

Method

1

Description

Analyst Comments

EPA 314.0 DOE-AL

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact:

Project

Ms. Pamela M. Puissant

Level C Data Package GW

Client Sample ID: Sample ID:

Matrix: Collect Date:

Receive Date: Collector:

Client

26-SEP-06

081630-020

172584004

Ground Water

25-SEP-06 09:38

Project:

Client ID:

Client Desc.: MRN-3D

SNLSGW SNLS002

Parameter Qualifler Result DL RLUnits DF AnalystDate Time Batch Method

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

Perchlorate

ND

0,004 0.012 mg/L

I MARI 10/02/06 1917 572325 1

Report Date: October 11, 2006

The following Analytical Methods were performed

Analyst Comments Method Description

EPA 314.0 DOE-AL

Internal Lab	()		F	ANAL'	YSIS REQL	JEST.	AND	CHA	N OF CU	STOD	Y.		Page 1 of 1	-
Batch No.	V/A				SMO Use							AR/COC	610	656
Dept. No./Mail Stop:	10331/1042		Date Sample	es Shippe	d: 9/25/06	,	Project/	Task No. 9	96750.01.01.05	- 1		Waste Characterizatio	n	
Project/Task Manager:	Franz Lauffer		Carrier/Way	rbill No.	6917	7	SMO A	uthorizatio	n:	len	aua_	-Send preliminary/copy	report to:	
Project Name:	GWPP		Lab Contact	t: <u> </u>	die Kent/803-556-8		Contrac	t#PO 21	671			<u> </u>	•	
Record Center Code:	NA.		Lab Destina	tion:	GEL			con Los		and Assess		Released by COC No.:		
Logbook Ref. No.:	NA		SMO Contact	/Phone: I	Pam Pulssant/505-8	44-3185	}	760	Boll B	MARK.		✓ Validation Required •		
Service Order No.	CF 084-07		Send Report	to SMO: I	Lorraine Herrera /50	5-844-319	19					Bill To:Sandia National Labs (Accounts Payable)	
Location	Tech Area					-					01/0/	P.O. Box 5800 MS 015	4	• •
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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company: Sandia National Laboratories

MS-0756, Org. 7578, Bldg. 823/Rm. 4276 Address:

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact: Ms. Pamela M. Puissant Project: Lével C Data Package GW

Client Sample ID: Sample ID: Matrix:

Ground Water Collect Date: 22-SEP-06 09:09

Receive Date:

26-SEP-06

081631-020

172584005

Client

Project: Client ID:

Client Desc.: SWTA3-MW4

SNLSGW

SNLS002

Collector: Parameter Qualifier Result RLDLUnits DF AnalystDate Time Batch Method

0.012

Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

ND

0,004

mg/L

1 MAR1 10/02/06 1932 572325 1

Report Date: October 11, 2006

The following Analytical Methods were performed

Analyst Comments Method Description

EPA 314.0 DOE-AL

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Project/Task Manager:	Franz Lauffer		Carrier/Way	bill No.	69714		SMO A	uthorizatio	п: <i>еНэИ</i>	en T	Me?	-Send prefiminary/or	opy report to:	
Project Name:	GWPP		Lab Contac	l;	Edie Kent/803-556-81	171	Contrac	t#PO 21	671					·
Record Center Code:	NA		Lab Destina	tion:	GEL.		_ ا	me ac	THE ONE	and .		Released by COC		
Logbook Ref. No.:	NA		SMO Contact	Phone:	Pam Pulssant/605-84	4-3185	7	80 VS	ALE EN	TOR.		✓ Validation Require	d	
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Location	Tech Area					*			. ,	7256	113/	P.D. Box 5800 MS	0154	
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3. Received by			Org.	Date	7 Time		j6, Rec	eived by			Org.	Date	Tin	ue

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company:

Sandia National Laboratories

Address:

MS-0756, Org. 7578, Bldg. 823/Rm. 4276

1515 Eubank SE

Albuquerque, New Mexico 87123

Contact: Project:

Ms. Pamela M. Puissant Level C Data Package GW

Client Sample ID: Sample ID:

Matrix: Collect Date: 081628-020 172584002 Ground Water 21-SEP-06 10:43

Receive Date: Collector:

Project: Client ID:

SNLSGW SNLS002

AnalystDate

26-SEP-06

Client

Client Desc.: GWPP-EB1

DF

Qualifier Ion Chromatography Federal

EPA 314.0 Perchlorate by IC, contingent

Perchlorate

ND

Result

0.004

DL

RL

0.012

mg/L

Units

1 MAR1 10/02/06 1846 572325 1

Time Batch Method

Report Date: October 11, 2006

The following Analytical Methods were performed

Method

Description

Analyst Comments

EPA 314.0 DOE-AL

Appendix B

Data Validation Sample Findings Summary Sheets for the Perchlorate Data

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

DATE:

October 27, 2006

TO:

File

FROM:

David Schwent

SUBJECT:

Inorganic Data Review and Validation - SNL

Site: Canyons Assess GWM

AR/COC: 610646 SDG: 171636 Laboratory: GEL

Project/Task: 98026.01.06

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate) and EPA353.1 (nitrate/nitrite). No problems were identified with the data package that result in the qualification of data.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

Nitrate/nitrite Analysis: No target analytes were detected in the blanks, except for the following. Nitrate/nitrite was detected in the initial calibration blank (ICB), continuing calibration blank (CCB) and method blank (MB). However, the associated result of Sample 171636-001 was a detect >5X the highest calibration blank concentration and >5X the MB concentration and should not be qualified.

Perchlorate Analysis: No target analytes were detected in the blanks.

Site: Canyons Assess GWM						VCOC						In	organ	ic	
			Met	hod/C	CASI	lumbe	er (An	alysis	/Anal	yte)				·	
	Perchlorate (EPA314.0):	Nitrate/nitrite (EPA353.1):													
Sample ID															
	All	All										ļ			
	Acceptance criteria met.	Acceptance criteria met.													
	No sample data will be	No sample data will be													
	qualified.	qualified.										ļ			
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Validated By:

Mr. David Schwent

Date: 10/27/06

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

DATE:

October 27, 2006

TO:

File

FROM:

David Schwent

SUBJECT:

Inorganic Data Review and Validation - SNL

Site: Canyons Assess GWM

AR/COC: 610647 SDG: 171770 Laboratory: GEL

Project/Task: 98026.01.06

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. This validation was performed according to SNL/NM ER Project AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate) and EPA353.1 (nitrate/nitrite). No problems were identified with the data package that result in the qualification of data.

Data are acceptable. QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

All Analyses: All samples were analyzed within the prescribed holding times and properly preserved.

Calibration

All Analyses: All initial and continuing calibration QC acceptance criteria were met.

Blanks

All Analyses: No target analytes were detected in the blanks.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

<u>All Analyses</u>: All LCS QC acceptance criteria were met. No LCSD analyses were performed. No sample data will be qualified as a result.

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

All Analyses: All LCS QC acceptance criteria were met. No LCSD analyses were performed. No sample data will be qualified as a result.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

<u>All Analyses</u>: All MS (PS) QC acceptance criteria were met. No MSD (PSD) analyses were performed. The replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result.

Replicates

All Analyses: All replicate QC acceptance criteria were met.

ICP Serial Dilution

All Analyses: No serial dilution was required for these methods.

ICP Interference Check Sample (ICS)

All Analyses: No ICS was required for these methods.

Detection Limits/Dilutions

<u>Nitrate/nitrite Analysis</u>: All detection limits were properly reported. Sample 171636-001 was diluted 5X due to matrix interference.

<u>Perchlorate Analysis</u>: All detection limits were properly reported. No samples required dilution.

Other QC

All Analyses: No field duplicates (FDs), field blanks (FBs) or equipment blanks were submitted on the ARCOC.

No other specific issues were identified which affect data quality.

Site: Canyons Assess GWM AR/COC: 610647 Inorganic Method/CAS Number (Analysis/Analyte) Nitrate/nitrite (EPA353.1): Perchlorate (EPA314.0): Sample ID Αll ΑII Acceptance Acceptance criteria met. criteria met. No sample No sample data will be data will be qualified. qualified.

Validated By:

Mr. David Schwent

Date: 10/27/06

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

October 27, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation - SNL

Site: Canyons Assessment GWM AR/COC: 610650 and 610651

SDG: 172242 Laboratory: GEL

Project/Task: 98026.01.06

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA353.1 (nitrate/nitrite) and EPA314.0 (perchlorate). Problems were identified with the data package that result in the qualification of data.

1. Nitrate/Nitrate:

The target analyte was detected $(\ge DL)$ in one or more of the blanks (ICB, CCB) at negative concentration with absolute value > the DL but < the RL. The associated sample result is qualified as noted below.

Sample 172242-002

Nitrate/Nitrite was non-detect and should be qualified "UJ, B3."

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as noted above in the summary section.

Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All Analyses: All MS (PS) QC acceptance criteria were met. No MSD (PSD) analyses were performed. The replicate analyses were used as measures of laboratory precision. No sample data will be qualified as a result. It should be noted that the PS analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

Replicates

<u>All Analyses</u>: All replicate QC acceptance criteria were met. It should be noted that the replicate analysis for perchlorate was performed on a QC sample of similar matrix from another SNL SDG. No sample data will be qualified as a result.

ICP Serial Dilution

All Analyses: No serial dilution was required for these methods.

ICP Interference Check Sample (ICS)

All Analyses: No ICS was required for these methods.

Detection Limits/Dilutions

<u>Nitrate/nitrite Analysis</u>: All detection limits were properly reported. Samples 171770-001 and -002 were diluted 5X due matrix interference.

<u>Perchlorate Analysis</u>: All detection limits were properly reported. No samples required dilution.

Other QC

All Analyses:

No field blanks (FBs) or equipment blanks (EBs) were submitted on the ARCOC. All field duplicates (FD) relate percent differences (RPDs) were <20%. There are no QC acceptance criteria currently in place for the evaluation of FDs.

No other specific issues were identified which affect data quality.

Site: Canyons Assessment GWM Data Type: Organic & Inorganic AR/COC: 610650, 610651 N599 (Nitrate/Nitrite) 081625-018 CYN-EB1 UJ,B3 GRO, DRO, and perchlorate analyses met QC acceptance criteria. No data will be qualified.

Validated By:

Kevin A Lambert

Kevin A. Lambert

Date: 10/27/06

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

October 27, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation - SNL

Site: Canyons Assessment GWM

AR/COC: 610652 SDG: 172331 Laboratory: GEL

Project/Task: 98026.01.06

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA353.1 (nitrate/nitrite) and EPA314.0 (perchlorate). No problems were identified with the data package that result in the qualification of data.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks except as follows.

Nitrate/Nitrate:

The target analyte was detected $(\ge DL)$ in one or more of the blanks (ICB, CCB) at negative concentration with absolute value > the DL but < the RL. The associated nitrate/nitrite result was a detect >5X the DL; no data should be qualified as a result.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

All Analyses:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria except follows.

Nitrate/Nitrite:

It should be noted that the MS analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

Replicate

The replicate met QC acceptance criteria except follows.

Nitrate/Nitrite:

It should be noted that the replicate analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

ICP Serial Dilution

Not Applicable

ICP Interference Check Sample (ICS)

Not Applicable

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

All Analyses:

EBs were submitted on the AR/COC(s). However, it should be noted that the EBs submitted on ARCOC# 610651 are associated with SNL samples in another SDG.

No other specific issues were identified which affect data quality.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

All Analyses:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria except follows.

Nitrate/Nitrite:

It should be noted that the MS analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

Replicate

The replicate met QC acceptance criteria except follows.

Nitrate/Nitrite:

It should be noted that the replicate analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

ICP Serial Dilution

Not Applicable

ICP Interference Check Sample (ICS)

Not Applicable

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

All Analyses:

It should be noted that the EBs were submitted in another SDG on ARCOC# 610651.

No other specific issues were identified which affect data quality.

Site: Canyons Assessment G	WM .	AR/COC:	610652			Data Ty				ganic							
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Validated By:

Kevin A Lambert

Kevin A. Lambert

Date: 10/27/06

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

November 9, 2006

To:

File

From:

Kevin Lambert

Subject:

LC/MS/MS Inorganic Data Review and Validation – SNL

Site: Canyons Assessment GWM

AR/COC: 610652 (perchlorate reanalysis)

SDG: 173772 Laboratory: GEL

Project/Task: 98036.10.11.01

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using DOE NNSA Service Center Model Data Validation Procedure (MDVP) Rev. 4.1

Summary

The sample was prepared and analyzed with accepted procedures using method EPA6850 Mod (perchlorate by LC/MS/MS). Problems were identified with the data package that result in the qualification of data.

1. Perchlorate by LC/MS/MS:

The MS/MSD was not assessed due to high dilution and high concentration in the parent sample. The LCS percent recovery met QC acceptance criteria. However, no measure of precision was provided for the target analyte. Therefore, the sample result should be flagged "P2" to indicate insufficient QC data to determine laboratory precision.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The sample was analyzed within the prescribed holding times and properly preserved.

Calibration

All initial and continuing calibration data met QC acceptance criteria.

Reporting Limit Verification

The CRI recoveries met QC acceptance criteria. It should be noted that the CRI spiked concentration was at the MDL, not 2X the MDL as stated in the MDVP. No sample data should be qualified as a result.

Blanks

No target analytes were detected in the blanks.

Internal Standards

All internal standards (IS) met QC acceptance criteria.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

The MS/MSD analyses met QC acceptance criteria except as noted above in the summary section.

Laboratory Control Sample (LCS)

All LCS recoveries met QC acceptance criteria.

Detection Limits/Dilutions

All detection limits were properly reported. The sample was diluted 20X to bring over range concentrations within the calibration range.

Perchlorate Chlorine Ratios

The sample ratios met QC acceptance criteria.

Interference Check Standard (ICS)

The ICS met QC acceptance criteria.

Other QC

No equipment blank (EB), field blank (FB) or field duplicate pair was submitted on the AR/COC(s).

No other specific issues were identified which affect data quality.

Site: Canyons Assessment GWM				AR/COC: 610652 (perchlorate reanalysis)										Data Type: Inorganic							
	LC/MS/MS	14797-73-0 (Perchlorate)																			
081626-R20 CYN-MW6-RE		P2																			
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Validated By:

Kurn A Lambut

Kevin A. Lambert

Date: 11/09/06

Analytical Quality Associates, Inc.

616 Maxine NE

Albuquerque, NM 87123 Phone: 505-299-5201 Fax: 505-299-6744 Email: minteer@aol.com

Memorandum

Date:

October 27, 2006

To:

File

From:

Kevin Lambert

Subject:

Inorganic Data Review and Validation – SNL

Site: GWPP

AR/COC: 610653, 610654, 610655, and 610656

SDG: 172584 Laboratory: GEL

Project/Task: 96750.01.01.05

See the attached Data Validation Worksheets for supporting documentation on the data review and validation. Data are evaluated using SNL/NM SMO AOP 00-03 Rev 1.

Summary

The samples were prepared and analyzed with accepted procedures using methods EPA314.0 (perchlorate). No problems were identified with the data package that result in the qualification of data.

Data are acceptable and reported QC measures appear to be adequate. The following sections discuss the data review and validation.

Holding Times/Preservation

The samples were analyzed within the prescribed holding times and properly preserved.

Calibration

The initial and continuing calibration data met QC acceptance criteria.

Blanks

No target analytes were detected in the blanks.

Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD)

The LCS/LCSD met QC acceptance criteria except as follows.

Perchlorate:

It should be noted that no LCSD was provided with the SDG. No data should be qualified as a result. Laboratory precision was assessed using the replicate.

Matrix Spike (MS)

The MS met QC acceptance criteria except follows.

Perchlorate:

It should be noted that the MS analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

Replicate

The replicate met QC acceptance criteria except follows.

Perchlorate:

It should be noted that the replicate analyses was run on a SNL sample of similar matrix from another SDG. No data should be qualified as a result.

ICP Serial Dilution

Not Applicable

ICP Interference Check Sample (ICS)

Not Applicable

Detection Limits/Dilutions

All detection limits were properly reported. No dilutions were required.

Other QC

No equipment blank (EB), trip blank (TB), field blank (FB), or field duplicate pair was submitted on the AR/COC(s) except as follows.

Perchlorate:

An EB and field duplicate pair was submitted on the AR/COC(s). There are no "required" review criteria for field duplicate analyses comparability; no data should be qualified as a result.

No other specific issues were identified which affect data quality.

Sample Findings Summary

Site: GWPP	AR/COC:	610653, 6	10654, 6		Data Type: Inorganic									
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	Perchlorate analysis met QC acceptance criteria. No data will be qualified.													
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Validated By: Kevin A. Lambert

Date: 10/27/06