ENERGY TRANSFER PARTNERS

Transwestern Pipeline Company

December 19, 2013

Mr. Glenn von Gonten
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Mr. Dave Cobrain
New Mexico Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6313

RECEIVED

DEC 20 2013

NMED
Hazardous Waste Bureau

RE: Investigation Report
Transwestern Compressor Station No. 9
Transwestern Pipeline Company, LLC
Roswell, Chavez County, New Mexico
NMOCD Case #GW-052/EPA ID NO. NMD986676955

Dear Messrs. von Gonten and Cobrain:

On March 13, 2013, the New Mexico Environment Department (NMED) issued a Stipulated Order (SO) to Transwestern Pipeline Company, LLC (Transwestern) that governs corrective action activities conducted within the Project Area at Transwestern's Compressor Station No. 9 (or Roswell Compressor Station). In addition, the SO indicates that the New Mexico Oil Conservation District (NMOCD) will continue to be the lead agency for the project with the NMED providing additional review.

In accordance with the terms of the Order, please find attached for your review and approval an *Investigation Report* documenting implementation of the investigation activities described in the March 2013 *Amended Investigation Work Plan and Groundwater Monitoring Plan* (IWP). The IWP was reviewed by the NMED and the NMOCD; approval for its implementation was received from the NMOCD on July 1, 2013.

If you have any questions or comments regarding this document, please do not hesitate to contact me at 210.870.2725 (office) or 281.740.0494 (cell).

Sincerely,

Richard A Spell
Waste, Water, & Remediation Manager
Transwestern Pipeline, LLC

Attachment: *Investigation Report*

Xc: Larry Campbell — Transwestern (electronic via email)
Laurie King — US EPA Region 6
Tim Gum — NMOCD Artesia District Office (w/o attachment)

INVESTIGATION REPORT
TRANSWESTERN COMPRESSOR STATION NO. 9
(ROSWELL COMPRESSOR STATION)
6381 NORTH MAIN STREET
ROSWELL, CHAVES COUNTY, NEW MEXICO
EPA ID NO. NMD986676955

PREPARED FOR:

TRANSWESTERN PIPELINE COMPANY, LLC
711 LOUISIANA, SUITE 900
HOUSTON, TX 77002

PREPARED BY:

EARTHCON CONSULTANTS, INC.
14405 WALTERS ROAD, SUITE 700
HOUSTON, TEXAS 77014
281.240.5200

EarthCon Project No. 02.20120037.00

December 19, 2013

Investigation Report
Transwestern Compressor Station No. 9
(Roswell Compressor Station)
6381 North Main Street
Roswell, Chaves County, New Mexico
EPA ID No. NMD986676955

Prepared For:

Transwestern Pipeline Company, LLC
711 Louisiana, Suite 900
Houston, TX 77002

December 19, 2013

EarthCon Project No. 02.20120037.00

EarthCon Consultants, Inc. is submitting to Transwestern Pipeline Company, LLC (Transwestern) this *Investigation Report* for the Roswell Compressor Station in Chaves County, New Mexico. This report has been prepared for the exclusive use of and reliance by Transwestern, and may not be relied upon by any other person or entity without the express written authorization of EarthCon.
Any reliance, use, or re-use of this document (or the opinions, findings, conclusions, or recommendations if any represented herein), by parties other than those expressly authorized by EarthCon is at the sole risk of those parties. This report was prepared by or performed under the direction of the EarthCon Professionals listed below and approved by Transwestern.

Signed:

Gabriela Floreslovo
Senior Project Engineer
EarthCon Consultants, Inc.

J.D. Haines, LPG (Indiana)
Principal Geologist
EarthCon Consultants, Inc.

Richard A Spell
Waste, Water, & Remediation Manager
Transwestern Pipeline, LLC

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EXECUTIVE SUMMARY

This document is an *Investigation Report* prepared by EarthCon Consultants, Inc. (EarthCon) on behalf of Transwestern Pipeline Company, LLC (Transwestern) for the Transwestern Compressor Station No. 9 (also known as the Roswell Compressor Station) property located at 6381 North Main Street in Roswell, New Mexico. On March 13, 2013, the New Mexico Environment Department (NMED) issued a Stipulated Order (SO) that governs activities conducted within the Project Area. Therefore, this *Investigation Report* was developed to comply with *Section IX – Reporting Requirements* of the SO.

This *Investigation Report* documents implementation of the investigation activities described in the March 2013 *Amended Investigation Work Plan and Groundwater Monitoring Plan (IWP)*. The *IWP* was reviewed by New Mexico Environment Department (NMED) and the New Mexico Oil Conservation Division (NMOCD); approval for its implementation was received from the NMOCD July 1, 2013.

The purpose of the additional investigations proposed in the *IWP* were to delineate the northern extent of the 1,1-Dichloroethene (1,1-DCE) groundwater plume identified in the Project Area, via installation and sampling of four new monitoring wells; plug and abandon (P&A) several monitoring wells that were no longer exhibiting detectable concentrations of the constituents-of-concern (COCs), as well as multiphase extraction (MPE) wells outside of the current groundwater plume. Permits for the proposed well installations and P&A activities were obtained from the State of New Mexico's Office of the State Engineer (OSE) prior to implementation.

Field activities were implemented between August 6 and August 16, 2013. Samples from subsurface soil near the water table and groundwater samples were collected from the new soil boring/monitoring wells installed and analyzed for volatile organic compounds by EPA Method 8260. Analytical results for the soil samples confirmed the absence of a residual soil source in the area investigated, and analytical results for the groundwater samples indicate that 1,1-DCE was delineated in the northern portion of the project area.

1.0 INTRODUCTION

This document is an *Investigation Report* prepared by EarthCon Consultants, Inc. (EarthCon) on behalf of Transwestern Pipeline Company, LLC (Transwestern) for the Roswell Compressor Station, Station No. 9, located at 6381 North Main Street in Roswell, New Mexico (see **Figure 1-1**, Site Location Map). For the purposes of this *Investigation Report*, the term "Facility" will be used to denote the entire compressor station and "Project Area" will be used to refer to the northeastern corner of the compressor station and the adjacent land leased from the State of New Mexico Trust.

On March 13, 2013, the New Mexico Environment Department (NMED) issued a Stipulated Order (SO) that governs activities conducted within the Project Area. This *Investigation Report* documents implementation of the investigation activities described in the March 2013 *Amended Investigation Work Plan and Groundwater Monitoring Plan (IWP)*. This *Investigation Report* was developed to comply with the IWP *Section IX – Reporting Requirements* of the SO. The *IWP* was submitted for review to the NMED and NMOCD; approval for its implementation was received from the NMOCD July 1, 2013; NMED reviewed the document and responded on July 3, 2013 indicating that they would not provide comments. The purpose of the additional investigations proposed in the *IWP* were to delineate the northern extent of the groundwater plume identified in the Project Area, via installation and sampling of four new monitoring wells; plug and abandon (P&A) several monitoring wells that were no longer exhibiting detectable concentrations of the constituents-of-concern (COCs), as well as multiphase extraction (MPE) wells outside of the current groundwater plume. The Project Team for Transwestern implementing the activities described in the *IWP* consists of EarthCon in the capacity of project management and reporting, with Cypress Engineering Services, Inc. (CES) conducting field services.

This *Investigation Report* is divided into six major sections. **Section 1** (this section) contains introductory information; **Section 2** contains background information for the project; **Section 3** contains a description of the investigation activities conducted within the Project Area; **Section 4** describes the findings of the field investigation and data evaluation process; **Section 5** provides a summary of findings and conclusions; and **Section 6** contains references cited in the text of this report. Tables, figures, and appendices follow the text of the report.

2.0 BACKGROUND

2.1 Site Description

The Facility is an active natural gas compression station located approximately 8 miles north of the city center of Roswell, New Mexico along the eastern side of U.S. Highway 285. The Facility is situated on approximately 77 acres of land in Sections 21 and 28 (T9S R24E), Chaves County, New Mexico (see **Figure 1-1**). The Facility is privately owned by Transwestern, while the remainder of Sections 21 and Section 28 are State Trust Land (Glenn, 1993). The Facility is specifically located in the SW¼ of the SW¼ of Section 21 (less West ±47.98 feet) and in the NW¼ of the NW¼ of Section 28 (less West ±47.98 feet) of Township 9S and Range 24E.

Site access is via U.S. Highway 285, and the entire Facility is secured by a chain-link fence with locked gates.

The Project Area encompasses a portion of the northwest corner of the Facility, and extends off-site to the northeast and east of the Facility to a 40-acre easement leased from the New Mexico State Land Office (SLO) State Trust Land for remediation and monitoring purposes (see **Figure 1-2**). A majority of the off-site wells are located within a fenced perimeter. The following is pertinent information regarding the Facility (DBS&A, 1997):

Facility name	Transwestern Compressor Station No. 9 (aka Roswell Compressor Station)
Facility address	Transwestern Pipeline Company, LLC 6381 North Main Street P.O. Box 1717 Roswell, New Mexico 88202-1717
Telephone number	(575) 625-8022
EPA I.D. number	NMD986676955
County and state	Chaves County, New Mexico
Facility legal description	SW1/4 of the SW1/4 of Section 21, T9S R24E, NW1/4 of the NW1/4 of Section 28, T9S R24E
Latitude/Longitude of former Pits	Pit 1: N33°30'54" / W104°30'55" Pit 2: N33°30'55" / W104°30'55"
Facility elevation	Approximately 3610 feet above sea level

The Facility is located along the Transwestern natural gas pipeline that extends from Texas to the Arizona/California border. The compressor station services two 30-inch Mainlines and two 24-inch Lateral pipelines. The primary function of the compressor station is to boost the pressure of the natural gas stream by means of compressors powered by natural gas-fueled internal combustion engines. Additionally, the Facility conducts gas transmission line maintenance operations that generate waste hydrocarbons, including condensate, pigging and other wastes, which were historically discharged to the former Pits (DBS&A, 1994). Wastes generated by current pipeline maintenance activities are temporarily stored on aboveground storage tanks at the Facility for off-site recycling or final disposal, based on BTU content.

The Facility also includes a building that houses the district offices for Transwestern's New Mexico operations, along with an engine room, ancillary equipment, pig launcher and pigging waste handling facilities, and other ancillary buildings, including a warehouse and a repair shop (see building outlines in **Figure 1-2**).

Office buildings and other structures are mainly located in the western and central portions of the property. Remediation system equipment, recovery wells, and monitoring wells are located either on the northeast portion of the Facility and within its fence, or offsite within a fenced area on land leased from the New Mexico State Land Office.

2.2 Surface Conditions

The Facility is located approximately 7 miles west of the Pecos River within the Pecos Valley drainage basin. The entire area west of the Pecos River is generally referred to as the West Pecos Slope (Kelley, 1971), which rises westward from elevations of about 3,300 feet mean sea level (MSL) at the Pecos River to over 10,000 feet MSL in the Capitan Mountains some 50 miles to the west. Local topography is generally of low relief.

The mean annual precipitation as measured at the Roswell Municipal Airport for a 23-year period was 9.82 inches (DBS&A, 1997). The majority of the precipitation occurs in July and August during frequent summer thunderstorms (DBS&A, 1997). Tributary surface streams drain west to east toward the Pecos River; however, the drainage near the Project Area are commonly dry, and only flow on an intermittent basis. The depths of the remaining impacts to soil and groundwater and the lack of consistent surface water indicate that the release from the former Pits is unlikely to have impacted surface water.

2.3 Subsurface Conditions

The Facility lies within the northernmost portion of the Roswell hydrologic basin. The basin is structurally controlled by eastward-dipping carbonate and evaporates sequences of Permian age which were uplifted during the Tertiary period during the development of the Sacramento and Guadalupe Mountains along the western margin of the basin (Kelley, 1971). Eastward flowing tributaries originating in the western highlands have deposited Quaternary alluvium over the Permian age rocks west of the Pecos River.

Because the average dip of the Permian rocks is greater than the slope of the land surface, progressively younger units are encountered eastward toward the Pecos River. Several prominent northeast trending ridges and hills interrupt the gently sloping plains near the Facility. These structures are narrow fault zones referred to as the Border Hills, Six-Mile Hill, and the Y-O faulted anticlines.

The stratigraphic units of importance with regard to water resources are, in ascending order, the San Andres Formation (Permian), the Artesia Group (Permian), and the undifferentiated Quaternary valley fill alluvium. Figure 3-1 of the *IWP* in **Appendix A** shows the generalized stratigraphy in the vicinity of the Facility. Groundwater is produced from both a shallow water-table aquifer (alluvium) and a deeper artesian aquifer that includes the two bedrock units (Welder, 1983). The deep bedrock aquifer is commonly known as the Roswell artesian aquifer. According to the Office of the State Engineer (OSE), approximately 400,000 acre-feet of water are pumped annually from the two aquifers of the Roswell hydrologic basin (DBS&A, 1992). The two aquifers are separated by a semi-confining layer, but are connected where the carbonate aquifer rises structurally to meet the shallow aquifer. Both aquifers are recharged along surface exposures on the slopes to the west and are believed to discharge to the Pecos River at the eastern margin of the basin.

The Quaternary valley fill in the Roswell area was deposited by shifting streams flowing from the west toward the Pecos River. The valley fill consists of poorly to moderately consolidated deposits of gravel, sand, and clay which mantle the underlying Permian rocks. The thickness of alluvial sediments varies considerably from one locality to another because of the irregular bedrock erosional surface upon which the alluvium was deposited. In some areas the alluvial fill is moderately well cemented (DBS&A, 1997).

The thickness of the shallow alluvial aquifer is shown on Figure 3-5 of the *IWP* in **Appendix A** for the northern portion of the Roswell Basin. Lyford (1973) developed the thickness (isopach) map after examination of drill cuttings from 225 wells penetrating the valley fill. Lyford's map indicates

that the alluvium near the Facility is generally less than 50 feet thick. In other areas, however, the thickness can exceed 250 feet thick where the alluvium fills depressions in the underlying bedrock surface. OSE well records from 1992 indicate that the alluvium near the Facility is approximately 70 feet thick (DBS&A, 1992).

The alluvial sediments underlying the Facility, as observed in borings drilled during several investigations, consist predominantly of interbedded cobbles, gravel, sand, silt, and clay to depths of approximately 70 feet bgs (DBS&A, 1997). The finer-grained zones form lenticular beds which appear to be discontinuous across the Facility. Some of the alluvial deposits are firmly cemented in some places. These lithologic descriptions are consistent with Lyford's descriptions of the valley fill (DBS&A, 1997). Generalized hydrogeologic cross sections of the sediments underlying the former Pits are depicted on Figure 3-2 of the *IWP* in **Appendix A**; Cross Section A - A' is constructed along an east-west line and Cross Section B - B' is constructed along a north-south line (see Figures 3-3 and 3-4 of the *IWP*, respectively, in **Appendix A**).

The hydrogeology underlying the Facility is as follows:

- From ground surface to depths of approximately 30 to 35 feet bgs, brown gravelly sands and clays are present. Perched water has occasionally been encountered within the bottom few feet of this interval (DBS&A, 1997).
- At depths of approximately 35 to 60 feet bgs, light brown to reddish-colored interbedded silts, sands, and clays are encountered. The fine-grained clay lenses serve as perching layers for the downward moving fluids and likely represent interfingering deposits of limited lateral extent (DBS&A, 1997).
- At depths of approximately 60 to 70 feet bgs, saturated silty sands and sands are present. This zone is referred to as the uppermost aquifer (DBS&A, 1997).
- At approximately 70 feet bgs, red plastic clay is present. This unit probably represents the transition from the Quaternary alluvium to the Permian-age bedrock of the Artesia Group (DBS&A, 1997).
- At approximately 92 feet bgs, the upper boundary of the San Andres Formation is indicated by OSE well records for wells near the Facility (DBS&A, 1997); however the top of a water-bearing zone on the Project Area has been encountered at depths of 122 to 152 feet bgs and appears to be within the Artesia Group.

- Based on MW-23D, drilled to a depth of 194 feet bgs, the water-bearing limestone unit of the San Andres Formation is not encountered until 175 feet bgs on the Project Area.

The principal water-bearing zones of sands and gravels are separated by less permeable lenses of silt and clay. According to Welder (1983), one to five water-bearing zones exist within the valley fill, and in many areas the alluvium is hydraulically connected to the upper bedrock units of the Artesia Group. The perimeter of the shallow alluvial aquifer is generally bounded by a margin of less permeable alluvium. Shallow groundwater conditions in the alluvium at the Project Area are shown on the groundwater surface elevation map of the Uppermost Aquifer, as measured on November 3, 2013 (see **Figure 4-1**).

Poor water quality is encountered in the shallow alluvial aquifer from slightly south of the Facility northward and is due to the presence of gypsum beds of the Fourmile Draw member at the base of the alluvium. Because of the poor water quality and the low yields, most wells completed in the shallow alluvium are used primarily as livestock water supplies. In general, the chloride content of water in the shallow aquifer increases from west to east and ranges from 20 milligrams per liter (mg/L) to 3700 mg/L (Welder, 1983). The presence of gypsum beds results in objectionably high calcium and sulfate concentrations in the shallow alluvial aquifer in the vicinity of the Facility and northward (DBS&A, 1997). Sulfate concentrations are typically in the range of 2,000 to 3,000 mg/L, which is approximately equal to the equilibrium saturation concentration for groundwater in direct contact with gypsum ($CaSO_4 \bullet 2H_20$). Thus, background sulfate concentrations in this area are four to five times above the NMWQCC groundwater standard for sulfate of 600 mg/L (DBS&A, 1997). The poor water quality in the alluvium is consistent with the high total dissolved solids (TDS) concentrations reported for groundwater from the on-site monitoring wells (DBS&A, 1997).

2.4 Remedial History

Following removal of waste from the former Pits and backfilling with clean soil in 2001, design and installation of a soil and groundwater remediation system was initiated.

The remediation system was installed in two phases: First, a soil vapor extraction (SVE) system was installed in 2002 / 2003 consisting of nine SVE wells, 37 Multi-Phase Extraction (MPE) wells, associated conveyance piping, and two Baker Furnace thermal oxidizer units. The SVE system was started-up on March 10, 2003. Installation of a second phase of the remediation system was completed in December 2003 with the installation of 15 pneumatic recovery pumps, water treatment equipment, and a permitted irrigation system for the disposal of treated groundwater. A

Discharge Permit Modification (GW-052) was issued on June 16, 2003 for the discharge of treated groundwater through the irrigation system. In late 2003 / 2004, a 90-barrel aboveground storage tank was introduced into the system to act as a surge tank, and installed between the recovery wells and the oil/water separator. The surge tank provides two benefits: 1) provides for gravity separation of recovered liquids into two phases, a hydrocarbon phase and a water phase, and 2) allows more control of the flow rate into the other components of the treatment train. The treatment train was initially comprised of an oil/water separator, an air stripper, and an irrigation water tank; however, due to clogging issues, the oil/water separator was later removed from the treatment train. In addition, two granulated activated carbon (GAC) units were installed in series between the air stripper and the irrigation water tank to provide additional treatment of recovered groundwater prior to discharge. Free-phase hydrocarbons separated in the surge tank are sent off-site to a permitted facility for recycling or disposal, based on BTU content.

The modified recovery, treatment, and disposal/irrigation system was finally started-up on April 15, 2004, with groundwater recovery occurring from spring to fall, and has operated continuously since, with the exception of brief shutdowns for repairs and maintenance.

3.0 IMPLEMENTATION OF FIELD ACTIVITIES

Field activities were implemented between August 6 and August 16, 2013. Drilling and monitoring/recovery well installation, as well as well P&A activities we conducted under the supervision of a New Mexico-licensed driller from Talon LPE of Amarillo, TX (under contract to Transwestern). Well drilling/installation and P&A oversight, well logging and environmental sampling were provided by Clay Barnhill, P.G. (New Mexico) of CMB Environmental & Geological Services, Inc. of Roswell, NM, under subcontract to Cypress Engineering Services, Inc. of Houston, TX (a Transwestern environmental consultant).

The activities described below were conducted per the methodologies described in the March 2013 *IWP*, and under a site-specific *Health and Safety Plan* (*HSP*) for the project.

Ms. Catherine Goetz with the State of New Mexico's Office of the State Engineer (OSE), was also present on Wednesday August 7, 2013 to observe the field activities.

3.1 Scope of Activities

In accordance with the March 2013 *IWP*, the following activities were implemented:

- Processing of applications for new monitoring well installations and well plugging activities with the State of New Mexico's Office of the State Engineer;
- Conducting One-Call Notifications;
- Installation of four, 70-foot deep soil borings, and conversion to monitoring wells, north of MW-26 for the purpose of delineating 1,1-DCE in that direction (for location see Figure 2-2 of the *IWP* in **Appendix A**);
- Collection of soil samples from the capillary fringe for analysis of volatile organic compounds (VOCs);
- Collection of groundwater samples from the monitoring wells for analysis of VOCs;
- P&A of nine shallow monitoring wells, two deep monitoring wells and six multi-phase extraction (MPE) wells in the Project Area that either no longer exhibit COCs above the remedial objectives, or are no longer within the area of groundwater impacted by COCs (see former location in Figure 2-2 of the *IWP* in **Appendix A**);

- Collection of samples from soil cuttings generated during monitor well installation and P&A activities for waste characterization; and,
- Survey of new well locations.

3.2 Application Processing

In accordance with State of New Mexico regulations, an "application for permit to drill a well with no consumptive use of water" for the proposed installation of monitoring wells MW-39 through MW-42 was submitted on July 15, 2013 to the OSE; the application was approved on July 30, 2013.

Similarly, "well plugging plans of operation" for the proposed plugging of six MPE wells and 11 monitoring wells (see list in **Section 3.6**) were submitted on July 15, 2013 to the Office of the State Engineer; the plans were approved on July 22, 2013.

3.3 Soil Boring and Sampling

Soil borings for the installation of the proposed monitoring wells were advanced using a REICHdrill T-650 W air rotary drilling rig; the borings were 6 inches in diameter and advanced to total depths ranging from 70 to 78 feet below ground surface (ft bgs; see **Table 3-1**). The soil borings were generally installed at the proposed locations, with the exception of the boring for monitoring well MW-42. The original location (re-named SB-42A) was found to be dry, thus a second boring was advanced 50 ft to the west. The new location and the plan for P&A the original location were approved in the field by Ms. Goetz of the OSE. Location SB-42A/MW-42A was plugged using bentonite in the bottom of the borehole from 60 – 70 ft bgs, soil cuttings in the interval between 20 -60 ft bgs, and cement from surface to 20 ft bgs.

During the installation of the soil boring for monitoring well MW-40, an 8-inch diameter 10-feet long PCV pipe was used to control caving due to the presence of fine, loose sands. In addition, approximately 40 gallons of potable water were added during drilling through the unsaturated zone to allow for the recovery of soil cuttings from the 20 to 30 ft bgs depth interval. Potable water was obtained from the City of Roswell public water supply, as available at Mr. Barnhill's residence.

The locations were direct-bored from surface to 50 ft bgs; starting at this depth, 2-ft long split-spoons were used to collect soil cores every 5 ft.

The soil material was field-screened with a calibrated, hand-held photo-ionization detector (PID) to assess the presence of volatile organic compounds (via head-space vapor method), and was visually inspected and classified by the field geologist; this information is presented in the well construction logs included in **Appendix B**. The drilling equipment was decontaminated before drilling the first location, and before starting each subsequent location. The split-spoons were decontaminated between each discrete sampling interval.

One soil sample was collected from the soil-water interface at each water-bearing location; the depth for sample collection was selected based on field observations of saturation during drilling. The soil material was collected from the split-spoon using clean disposable scoops, and transferred into clean, laboratory-provided containers. These soil samples were labeled, packed for shipping, placed in an ice-filled chest, and shipped under chain-of-custody documentation to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for analysis of volatile organic compounds via EPA method SW846-8260B. Analytical results are discussed below in **Section 4.3**.

3.4 Monitoring Well Construction and Groundwater Sampling

The water-bearing soil borings were converted into monitoring wells after cleaning out the holes with the drilling rig. The monitoring wells were constructed using 2-inch diameter, schedule 40, flush-threaded PVC riser pipe and 0.010-inch machine-slotted PVC screen (typically 20 ft); centralizers were typically placed at 20 and 45 ft bgs (20 and 50 ft bgs for MW-42) to help maintain the wells' vertical alignment. A 12-20 silica sand filter pack was placed around the screened interval and was extended up to 3 ft above the screen; a 2 to 3 ft-thick layer of hydrated bentonite was placed on top of the sand, and a bentonite grout was used to fill the annulus space up to 2 ft bgs. The top two feet were filled with neat cement to serve as surface seal. Flush-mounted surface completions consisted of a three-by-three-feet, four-inch thick concrete pad and utility vault; the pad was sloped to allow surface drainage to flow away from the center of the pad. The vault is provided with a bolted lid and the casing was provided with a cap. **Table 3-1** summarizes well construction details.

After allowing for the well materials to cure, the monitoring wells were developed using a 1.8" in diameter, ES-120 submersible pump placed near the bottom of the well; development continued until water quality parameters had stabilized. Purged volumes and final water quality parameters are provided in **Table 3-2**.

Following development, groundwater was sampled using 1.8-in diameter, clean disposable bailers; groundwater was poured into clean, HCl-preserved, laboratory-provided containers. The groundwater samples collected from each new monitoring well were labeled, packed for shipping, placed in an ice-filled chest, and shipped under chain-of-custody documentation to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for analysis of volatile organic compounds via EPA method SW846-8260B. Analytical results are discussed below in **Section 4.4**.

Well installation logs and associated OSE's "well record and log" forms are presented in **Appendix B**.

3.5 New Monitoring Well Survey

Following monitoring well installation, the surface coordinates, the top of each new monitoring well casing, and the ground surface at each new monitoring well location were surveyed by a registered New Mexico professional land surveyor, with respect to the State Plane Coordinate System (NMSA 1978 47-1-49-56 (Repl. Pamp. 1993)). Horizontal positions were measured to the nearest 0.1 ft, and vertical elevations were measured to the nearest 0.01 ft. Surveyed locations are shown in **Figures 4-1, 4-2** and **4-3**, and top-of-casing (TOC) elevations for the new monitoring wells were used in **Table 4-1** to estimate groundwater elevations.

3.6 Well P&A Activities

Field activities included P&A of nine shallow monitoring wells (MW-5, MW-6, MW-8, MW-9, MW-18, MW-19, MW-31, MW-36 and MW-38) and two deep monitoring wells (MW-23D and MW-25D) that, based on a plume stability evaluation conducted in 2012, were found no longer necessary for continued monitoring or remediation activities. These wells include unimpacted, uppermost aquifer monitoring wells beyond the limit of the defined benzene groundwater plume, two deep (unimpacted) bedrock wells, and several MPE wells. The shallow monitoring wells have been documented to exhibit COC concentration below the cleanup levels for a number of sampling events. Similarly, the six MPE wells (MPE-1 through MPE-6) located in Circuit A of the recovery system were P&A, as these wells did not exhibit PSH and soil vapor concentrations have decreased to levels typically addressed via natural attenuation. These six MPE wells are now outside the historic groundwater plume due to plume shrinkage within the Project Area.

P&A and certification was conducted in accordance with New Mexico's *Rules and Regulations Governing Well Driller Licensing; Construction, Repair and Plugging of Wells [19.27.4 NMAC]*. As discussed in **Section 3.2** above, the P&A plans were approved by the OSE on July 22, 2013.

The wells targeted for P&A were located and the surface completions removed, including concrete pads; in the case of the MPE wells, the irrigation vaults were removed and cleaned out for re-use. The shallow monitoring wells and MPEs were P&A by pulling the casing to the extent possible, overdrilling and backfilling the borehole with a cement/bentonite grout. The deep wells, which were installed with steel casing, were grouted in place and cut-off at the surface.

As discussed above in **Section 3.3**, the location originally proposed for MW-40 was found dry and the borehole was P&A based on the approval of the representative of the OSE that was present at the time observing the field activities.

OSE's plugging record forms are presented in **Appendix B**.

3.7 Management of Investigation-Derived Waste

In accordance with the IWP, investigation-derived wastes were disposed as follows:

- Soil Cuttings from new monitoring well installation:
    - Cuttings from the 0 to 50 ft bgs depth interval were spread on the ground surface around the boring locations; and,
    - Cuttings from the 50 ft bgs to total drilling depth were drummed, sampled for characterization, and later spread on site based on characterization data and discrete soil samples (see **Sections 4.3** and **4.5**) indicating that target COCs were not detected.
- Development water from new monitoring well installation and equipment decontamination water was collected in drums and transferred to the recovery system's surge tank for processing via the air stripper and discharge through the irrigation system.
- Well casing and concrete pads removed during P&A activities were sent as non-hazardous materials to the Roswell municipal landfill for disposal.
- Soil cuttings generated during P&A activities were spread around the former well locations.
- Disposable sampling materials (including gloves, rags, etc.) were bagged for disposal along with Facility trash.

4.0 FIELD INVESTIGATION AND DATA EVALUATION FINDINGS

4.1 Soil and Groundwater Conditions

As described in the well construction logs included in **Appendix B**, soils consist of the typical interbedded layers of gravel, sand, silt, and clay observed at other areas previously investigated. A noted exception was the 50 to 60 feet depth interval at the original location for monitoring well MW-42 where a higher proportion of clays was encountered, resulting in a dry location. PID readings were relatively low (0.1 to 0.2 ppm) across the soil columns at these new locations; this finding is in line with the historical absence of industrial operations in the area investigated.

Depth to water measurements collected on August 16, 2013 in preparation for well development indicate that groundwater was found at depths ranging from 51.64 feet below top of casing (TOC; at MW-39) to 56.57 feet TOC (at MW-41). These values are in line with recent gauging data from neighboring monitoring well MW-26 (51.95 feet TOC in January 2013 and 51.70 feet TOC in April 2013). A summary of groundwater elevations is presented in **Table 4-1** and an updated groundwater potentiometric map for the project area including the new monitoring wells is presented in **Figure 4-1**.

4.2 Regulatory Criteria

Analytical data from the soil, groundwater, and waste characterization samples collected from the newly-installed monitoring wells and P&A locations were evaluated per the regulatory criteria identified below; analytical data packages are presented in **Appendix C**.

In accordance with Section VI. of the March 2013 SO for the site, soil and groundwater cleanup criteria were identified as follows:

- Soil Clean Up Levels were identified for the target COCs using the February 2012 NMED Risk Assessment Guidance for Site Investigation and Remediation; if a COC was not included in that guidance, the EPA Region 6 Screening Levels were used.
- Groundwater Clean Up Levels were identified for the target COCs using the New Mexico Water Quality Control Commission's standards and the EPA Maximum Contaminant Levels (MCLs); where standards exist in both regulations, the lower of the two was used. If neither a WQCC standard nor an MCL has been established for a COC, then the cleanup level should was identified as the screening level for tap water in Table A-1 of the

February 2012 NMED Risk Assessment Guidance for Site Investigation and Remediation, or the EPA Region 6 Screening Levels for tap water.

The RCRA maximum concentration levels established in 40 CFR §261.24 were used to assess the Toxicity Characteristic Leaching Procedure (TCLP) results from waste characterization samples collected for decision-making regarding disposal.

4.3 Soil Data Evaluation

Analytical results for the soil samples collected from the five soil borings at or near the water table indicate that VOCs were not detected above the laboratory reporting limits, which were below the corresponding soil clean up levels. The use of residential soil screening levels provides for the most conservative evaluation of the results.

These results confirm the absence of a residual source in soils at or near the water table in the area investigated. Analytical results and soil clean up levels are summarized in **Table 4-2**; analytical data packages are presented in **Appendix C**.

4.4 Groundwater Data Evaluation

Analytical results for the groundwater samples collected from the four newly-installed monitoring wells indicate that VOCs were detected in the samples collected from MW-39 and MW-41. Benzene, 1,1-Dichloroetahane (1,1-DCA), and 1,1-Dichloroethene (1,1-DCE) were detected above the laboratory's reporting limits in the sample from MW-39, and only the 1,1-DCE concentration of 19 µg/L is above the NMWQCC standard of 0.005 mg/L (or 5 µg/L). 1,1-DCE was detected in the sample from MW-41; however, the 1,1-DCE concentration of 1.1 µg/L is below the NMWQCC standard. The reporting limits for the VOCs reported as not detected are generally below the corresponding cleanup levels. Analytical results and groundwater clean up levels are summarized in **Table 4-3**; analytical data packages are presented in **Appendix C**. **Figures 4-2** and **4-3** depict the current Benzene and 1,1-DCE plumes.

Analytical results for the groundwater samples collected from MW-40, MW-41 and MW-42 indicate that delineation of 1,1-DCE north of MW-26 was achieved.

4.5 Waste Characterization Data Evaluation

A composite sample of soil cuttings generated during installation of the soil borings was analyzed via the Toxic Characteristic Leaching Procedure (TCLP) for the VOCs regulated under 40 CFR

§261.24. The analytical data package included in **Appendix C** indicates that results were reported as not detected above the laboratory reporting limits, which are lower than the corresponding maximum concentration levels.

5.0 SUMMARY AND CONCLUSIONS

This report documents the installation and sampling of four new monitoring wells; as well as plug and abandonment (P&A) of several monitoring wells that were no longer exhibiting detectable concentrations of the constituents-of-concern (COCs) and multiphase extraction (MPE) wells outside of the current groundwater plume. Based on the results of this work, the following summary and conclusions have been reached:

- Implementation of the field activities described in the March 2013 IWP was conducted between August 6 and August 16, 2013;
- Four new monitoring wells (MW-39 through MW-42) were installed after receiving permit approval for the proposed well locations from the OSE on July 30, 2013; the revised location for MW-42 and the plugging plans for the original location were field-approved by the OSE representative that was present at the time;
- Nine shallow monitoring wells, two deep monitoring wells and six multi-phase extraction (MPE) wells were P&A in accordance with New Mexico regulations, after receiving approval from OSE for the respective plugging plans on July 22, 2013;
- Soil samples were collected from the five soil borings at the soil-water interface, and analyzed for VOCs via EPA method 8260. Analytical results indicate that these constituents were not detected above the laboratory reporting limits, which were below the corresponding soil clean up levels. Therefore, these results confirm the absence of a residual source of contamination in soil at or near the water table in the area investigated.
- Following development, groundwater samples were collected from the four newly-installed monitoring wells and analyzed for VOCs via EPA method 8260. Analytical results for the samples from MW-40 and MW-42 were reported a not-detected above the laboratory reporting limits, which were below the corresponding groundwater clean up levels. Benzene, 1,1-DCA, and 1,1-DCE were detected in the sample from MW-39, and 1,1-DCE was also detected in the sample from MW-41; however, only the 1,1-DCE concentration reported for MW-39 is above the NMWQCC standard of 5 µg/L;
- Analytical results for the groundwater samples collected from MW-40, MW-41 and MW-42 indicate that delineation of 1,1-DCE north of MW-26 was achieved.

6.0 REFERENCES

Daniel B. Stephens & Associates, Inc. (DBS&A), December 1992. Task 1 Summary Report, Data Acquisition and Review, Roswell Basin.

Daniel B. Stephens & Associates, Inc., May 1994. Closure Plan for Roswell Compressor Station Surface Impoundments.

Daniel B. Stephens & Associates, Inc., January 1997. Corrective Action Plan for Roswell Compressor Station No. 9 Surface Impoundment.

EarthCon Consultants, Inc., March 2013. Investigation Work Plan and Groundwater Monitoring Plan. Roswell Compressor Station.

Glenn, Pleas, 1993. Letter from Pleas Glenn (New Mexico Office of the Commissioner of Public Lands) to Larry Campbell (Transwestern) regarding land ownership status, dated July 7, 1993.

Kelley, Vincent, 1971. Geology of the Pecos Country, Southeastern New Mexico. New Mexico Bureau of Mines & Mineral Resources, Memoir 24.

Lyford, Forest P., September 1973. Valley Fill in the Roswell-Artesia Area, New Mexico, U.S. Geological Survey Open-File Report 73-163.

Welder, G.E., 1983. Geohydrologic Framework of the Roswell Ground Water Basin, Chaves and Eddy Counties, New Mexico, New Mexico State Engineer Technical Report 42.

TABLES

TABLE 3-1
MONITORING WELL INSTALLATION DETAILS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Well ID	Date Drilled	Total Depth (ft gbs)	Riser Placement (ft bgs)	Centralizer Placement (ft bgs)	Screen Placement (ft bgs)	Cement Bentonite Grout Placement (ft bgs)	Bentonite Seal Placement (ft bgs)	Sand Pack Filter Placement (ft bgs)
MW-39	08/06/13	70	0 - 50	20 and 45	50 - 70	0.5 to 45	45 to 48	48 to 71
MW-40	08/05/13	70	0 - 50	20 and 45	50 - 70	0.5 to 45	45 to 48	48 to 71
MW-41	08/05/13	70	0 - 50	20 and 45	50 - 70	0.5 to 45	45 to 48	48 to 70
MW-42	08/06/13	75	0 - 55	20 and 50	55 to 75	0.5 to 48	48 to 51	51 to 75

ft bgs: feet below ground surface
Casing Material: Polyvinyl Chloride (PVC) 2 inch diameter schedule 40; 0.010 inch slotted screen
Sand Pack Material: 12/20 sand
Bentonite Seal Material: 3/8 inch pellets

TABLE 3-2
GROUNDWATER QUALITY PARAMETERS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Well ID	Date	Development Volume (gal)	Dissolved Oxygen (mg/L)	pH (S.U.)	Temperature (°C)	Electrical Conductivity (ms/cm)
MW-39	08/16/13	55	7.37	6.14	19.71	3,871
MW-40	08/16/13	55	7.22	6.24	20.41	3,496
MW-41	08/16/13	55	7.05	5.95	20.16	3,682
MW-42	08/16/13	55	6.43	5.72	19.45	3,806

TABLE 4-1
GROUNDWATER SURFACE ELEVATIONS IN THE UPPERMOST AQUIFER
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Well ID	Gauging Date	Top of Casing Elevation (ft MSL)	Depth to Water (ft TOC)	Groundwater Surface Elevation (ft MSL)
MW-39	08/16/13	3597.38	51.64	3545.74
	11/03/13		51.08	3546.30
MW-40	08/16/13	3596.48	54.25	3542.23
	11/03/13		54.21	3542.27
MW-41	08/16/13	3601.73	56.57	3545.16
	11/03/13		56.63	3545.10
MW-42	08/16/13	3595.21	56.42	3538.79
	11/03/13		56.28	3538.93

ft TOC: feet below Top of Casing
ft MSL: feet above mean sea level
TOC elevation based on survey by PR Patton & Associates dated 10/01/13

TABLE 4-2
SUMMARY OF SOIL ANALYTICAL RESULTS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Analyte	NMED * Residential Soil Screening Level (mg/Kg)	EPA Region 6 Resident Soil Screening Level (mg/kg)	Client Sample ID	MW-39 55'-57'	MW-40 60'-62'	MW-41 55'-57'	MW-42A 55-57	MW-42B 55'-57'
			Lab ID	1308625-001	1308625-002	1308625-003	1308626-003	1308625-004
			Collection Date	8/6/2013	8/5/2013	8/6/2013	8/6/2013	8/6/2013
			Units	Result	Result	Result	Result	Result
Benzene	1.54E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Toluene	5.27E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Ethylbenzene	6.84E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Methyl tert-butyl ether (MTBE)	9.01E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2,4-Trimethylbenzene		6.20E+00	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,3,5-Trimethylbenzene		7.80E+01	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2-Dichloroethane (EDC)	7.89E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2-Dibromoethane (EDB)	5.88E-01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Naphthalene	4.30E+01		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
1-Methylnaphthalene		1.60E+02	mg/Kg	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19
2-Methylnaphthalene		2.30E+01	mg/Kg	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19
Acetone	6.66E+04		mg/Kg	< 0.73	< 0.72	< 0.71	< 0.71	< 0.71
Bromobenzene		3.00E+01	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Bromodichloromethane	5.41E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Bromoform		6.20E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Bromomethane	1.65E+01		mg/Kg	< 0.15	< 0.14	< 0.14	< 0.14	< 0.14
2-Butanone	3.71E+04		mg/Kg	< 0.49	< 0.48	< 0.47	< 0.48	< 0.47
Carbon disulfide	1.53E+03		mg/Kg	< 0.49	< 0.48	< 0.47	< 0.48	< 0.47
Carbon tetrachloride	1.08E+01		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
Chlorobenzene	3.76E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Chloroethane		1.50E+03	mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
Chloroform	5.86E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Chloromethane		1.20E+01	mg/Kg	< 0.15	< 0.14	< 0.14	< 0.14	< 0.14
2-Chlorotoluene	1.56E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
4-Chlorotoluene		1.60E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
cis-1,2-DCE	1.56E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
cis-1,3-Dichloropropene	N/A	N/A	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2-Dibromo-3-chloropropane	1.86E+00		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
Dibromochloromethane	1.21E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Dibromomethane (*Methylene bromide)*	5.16E+01		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
1,2-Dichlorobenzene	2.31E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,3-Dichlorobenzene	N/A	N/A	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,4-Dichlorobenzene	3.17E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Dichlorodifluoromethane	1.68E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,1-Dichloroethane	6.45E+01		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
1,1-Dichloroethene (*1,1-Dichloroethylene*)	4.49E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2-Dichloropropane	1.52E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,3-Dichloropropane		1.60E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
2,2-Dichloropropane	N/A	N/A	mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
1,1-Dichloropropene	N/A	N/A	mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
Hexachlorobutadiene (*Hexachloro-1,3-butadiene*)	6.11E+01		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
2-Hexanone		2.10E+01	mg/Kg	< 0.49	< 0.48	< 0.047	< 0.48	< 0.47
Isopropylbenzene (*Cumene*)	2.43E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047

TABLE 4-2
SUMMARY OF SOIL ANALYTICAL RESULTS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Analyte	NMED * Residential Soil Screening Level (mg/Kg)	EPA Region 6 Resident Soil Screening Level (mg/kg)	Client Sample ID	MW-39 55'-57'	MW-40 60'-62'	MW-41 55'-57'	MW-42A 55-57	MW-42B 55'-57'
			Lab ID	1308625-001	1308625-002	1308625-003	1308626-003	1308625-004
			Collection Date	8/6/2013	8/5/2013	8/6/2013	8/6/2013	8/6/2013
			Units	Result	Result	Result	Result	Result
4-Isopropyltoluene	N/A	N/A	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
4-Methyl-2-pentanone		5.30E+02	mg/Kg	< 0.49	< 0.48	< 0.47	< 0.48	< 0.47
Methylene chloride	4.09E+02		mg/Kg	< 0.15	< 0.14	< 0.14	< 0.14	< 0.14
n-Butylbenzene		3.90E+02	mg/Kg	< 0.15	< 0.14	< 0.14	< 0.14	< 0.14
n-Propylbenzene *(Propylbenzene)*		3.40E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
sec-Butylbenzene		7.80E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Styrene	7.28E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
tert-Butylbenzene		7.80E+02	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,1,1,2-Tetrachloroethane	2.91E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,1,2,2-Tetrachloroethane	8.02E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Tetrachloroethene (*Tetrachloroethylene*)	7.02E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
trans-1,2-DCE (trans-1,2-Dichloroethylene)	2.70E+02		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
trans-1,3-Dichloropropene	N/A	N/A	mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2,3-Trichlorobenzene	N/A	N/A	mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
1,2,4-Trichlorobenzene	7.30E+01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,1,1-Trichloroethane	1.56E+04		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,1,2-Trichloroethane	2.81E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Trichloroethene *(Trichloroethylene)*	8.77E+00		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Trichlorofluoromethane	1.41E+03		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
1,2,3-Trichloropropane	4.97E-02		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095
Vinyl chloride	7.28E-01		mg/Kg	< 0.049	< 0.048	< 0.047	< 0.048	< 0.047
Xylenes	8.14E+02		mg/Kg	< 0.097	< 0.096	< 0.095	< 0.095	< 0.095

Analyte synonym provided in *italics*
NMED *: February 2012 New Mexico Environmental Department Risk Assessment Guidance for Site Investigation and Remediation
EPA: United States Environmental Protection Agency
<: Indicates analyte was not detected above the shown laboratory reporting limit
N/A: not available

TABLE 4-3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

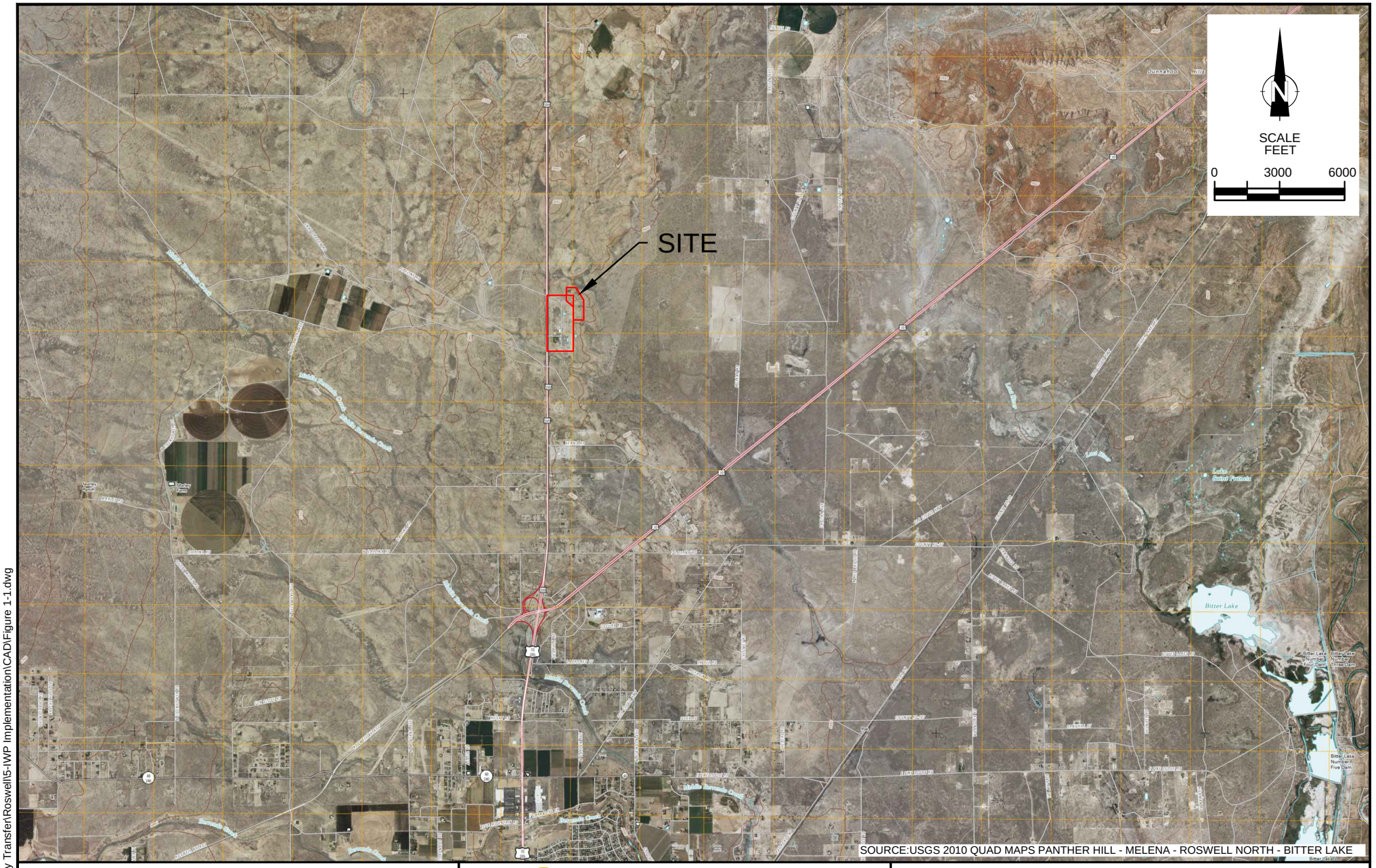
Analyte	NMWQCC Standard (ug/L)	EPA Drinking Water MCL (ug/L)	NMED ** Tapwater Screening Level (ug/L)	EPA Region 6 Tapwater Screening Level (ug/L)	Client Sample ID	MW-39	MW-40	MW-41	MW-42	Trip Blank
					Lab ID	1308818-001	1308818-002	1308818-003	1308818-004	1308818-005
					Collection Date	8/16/2013	8/16/2013	8/16/2013	8/16/2013	
					Units	Result	Result	Result	Result	Result
Benzene	1.00E+01	5.00E+00			ug/L	2.8	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	7.50E+02	1.00E+03			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	7.50E+02	7.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl tert-butyl ether (MTBE)			1.25E+02		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene				1.50E+00	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene				8.70E+00	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane (EDC)	1.00E+01	5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromoethane (EDB)	1.00E-01	5.00E-02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene			1.43E+00		ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1-Methylnaphthalene				9.70E-01	ug/L	< 4	< 4	< 4	< 4	< 4
2-Methylnaphthalene				2.70E+00	ug/L	< 4	< 4	< 4	< 4	< 4
Acetone			2.18E+04		ug/L	< 10	< 10	< 10	< 10	< 10
Bromobenzene				5.40E+00	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane *		8.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromoform *		8.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane			8.66E+00		ug/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2-Butanone			7.06E+03		ug/L	< 10	< 10	< 10	< 10	< 10
Carbon disulfide			1.04E+03		ug/L	< 10	< 10	< 10	< 10	< 10
Carbon tetrachloride	1.00E+01	5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chlorobenzene		1.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloroethane (*Ethyl chloride*)				2.10E+03	ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Chloroform *	1.00E+02	8.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane			1.88E+02		ug/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
2-Chlorotoluene (*o-Chlorotoluene*)			7.30E+02		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene (*p-Chlorotoluene*)				1.90E+01	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,2-DCE		7.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis-1,3-Dichloropropene	N/A	N/A	N/A	N/A	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane		2.00E-01			ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane *		8.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane (*Methylene bromide*)			8.16E+00		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		6.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene		7.50E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dichlorodifluoromethane			2.03E+02		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	2.50E+01				ug/L	2.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene (*1,1-Dichloroethylene*)	5.00E+00	7.00E+00			ug/L	**19**	< 1.0	1.1	< 1.0	< 1.0
1,2-Dichloropropane		5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane				2.90E+01	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2,2-Dichloropropane	N/A	N/A	N/A	N/A	ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,1-Dichloropropene	N/A	N/A	N/A	N/A	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene (*Hexachloro-1,3-butadiene*)			8.62E+00		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Hexanone				3.40E+00	ug/L	< 10	< 10	< 10	< 10	< 10
Isopropylbenzene (*Cumene*)			6.79E+02		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N/A	N/A	N/A	N/A	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Methyl-2-pentanone				1.00E+02	ug/L	< 10	< 10	< 10	< 10	< 10
Methylene chloride	1.00E+02	5.00E+00			ug/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0

TABLE 4-3
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
ROSWELL COMPRESSOR STATION
ROSWELL, CHAVES COUNTY, NEW MEXICO

Analyte	NMWQCC Standard (ug/L)	EPA Drinking Water MCL (ug/L)	NMED ** Tapwater Screening Level (ug/L)	EPA Region 6 Tapwater Screening Level (ug/L)	Client Sample ID	MW-39	MW-40	MW-41	MW-42	Trip Blank
					Lab ID	1308818-001	1308818-002	1308818-003	1308818-004	1308818-005
					Collection Date	8/16/2013	8/16/2013	8/16/2013	8/16/2013	
					Units	Result	Result	Result	Result	Result
n-Butylbenzene				7.80E+01	ug/L	< 3.0	< 3.0	< 3.0	< 3.0	< 3.0
n-Propylbenzene *(Propylbenzene)*				5.30E+01	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
sec-Butylbenzene				1.60E+02	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene		1.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
tert-Butylbenzene				5.10E+01	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane			5.24E+00		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	1.00E+01				ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Tetrachloroethene (*Tetrachloroethylene*)	2.00E+01	5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,2-DCE (*trans-1,2-Dichloroethylene*)	5.00E+00	1.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
trans-1,3-Dichloropropene	N/A	N/A	N/A	N/A	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene				5.20E-01	ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trichlorobenzene		7.00E+01			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	6.00E+01	2.00E+02			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	1.00E+01	5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichloroethene *(Trichloroethylene)*	1.00E+02	5.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trichlorofluoromethane			1.29E+03		ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane			7.18E-03		ug/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Vinyl chloride	1.00E+00	2.00E+00			ug/L	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylenes	6.20E+02	1.00E+04			ug/L	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5

Analyte synonym provided in *italics*
Red font identifies the lowest of the NMWQCC Standard or EPA MCL when both are available.
NMWQCC: New Mexico Water Quality Control Commission
EPA: United States Environmental Protection Agency
MCL: Maximum Contaminant Level
NMED **: February 2012 New Mexico Environmental Department Risk Assessment Guidance for Site Investigation and Remediation
* EPA MCL: The individual trihalomethanes (bromodichloromethane; bromoform; dibromochloromethane, chloroform) all have the MCL of 80 µg/L listed in the RSL table. However, 80 µg/L is the MCL for Total Trihalomethanes.
<: Indicates analyte was not detected above the shown laboratory reporting limit
Bold font and light blue highlighting indicates concentration is above the applicable standard.
N/A: not available

FIGURES



INVESTIGATION REPORT
TRANSWESTERN PIPELINE COMPANY, L.P.
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJ. NO: 02.20120037.00

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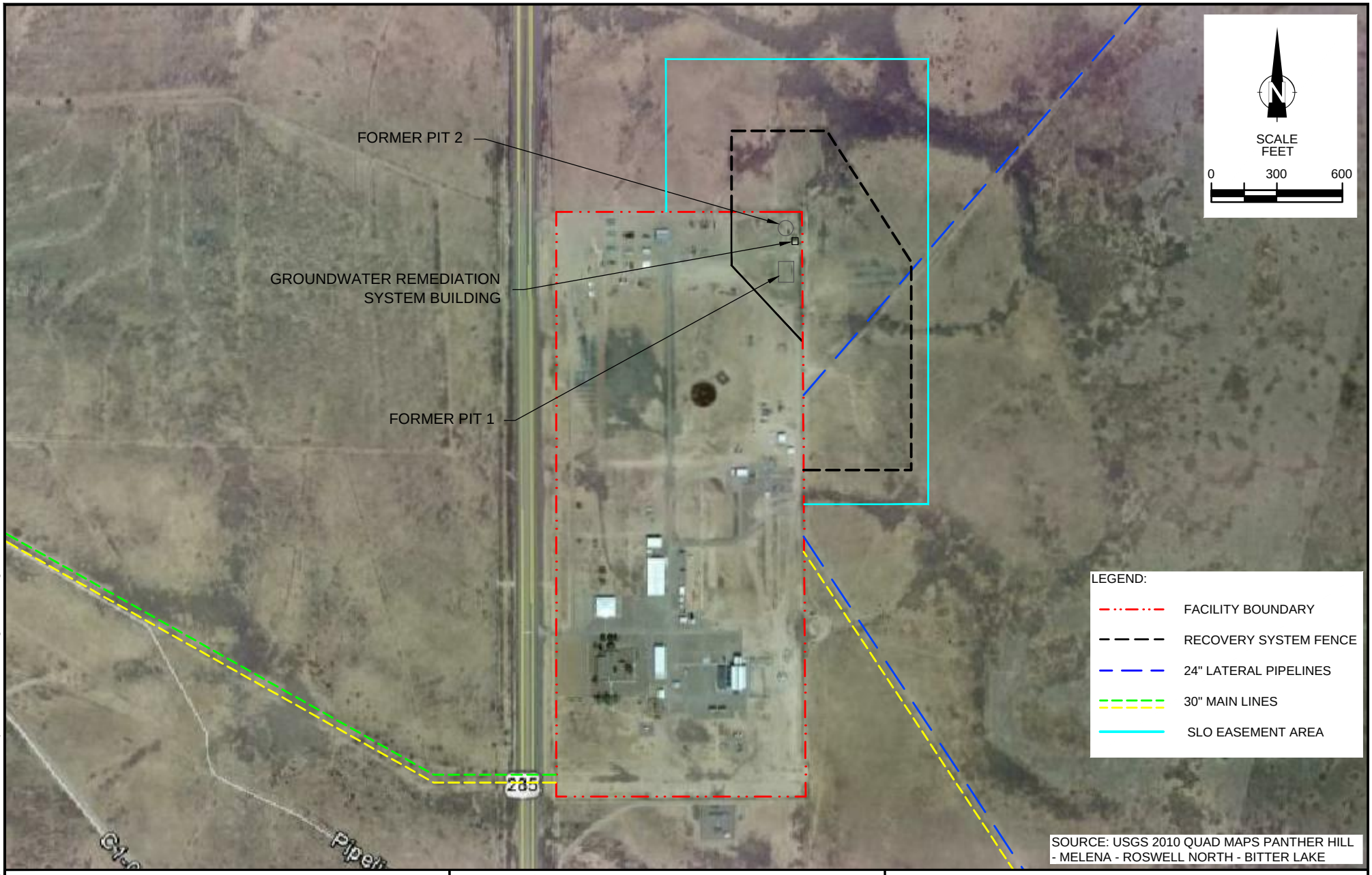
SITE LOCATION MAP

DRAWN:	CHECKED:	DATE:	FIGURE:
LDG	GPF	12/13	1-1

T:\PROJECT FILES\Energy Transfer\Roswell\5-IWP Implementation\CAD\Figure 1-1.dwg



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ROSWELL, CHAVES COUNTY, NEW MEXICO

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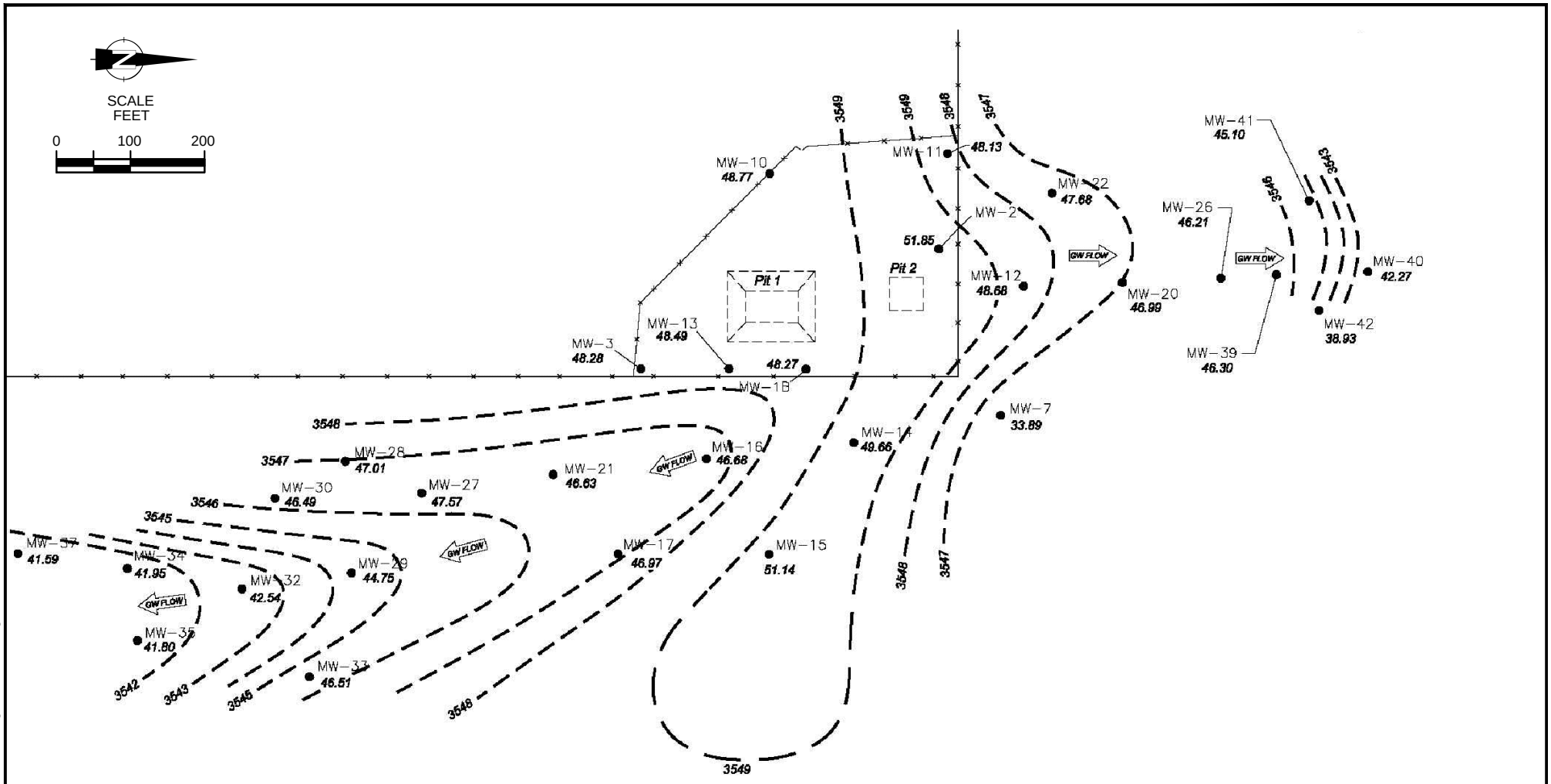
SITE FEATURES

DRAWN:	CHECKED:	DATE:	FIGURE:
LDG	GPF	12/13	1-2

T:\PROJECT FILES\Energy Transfer\Roswell\5-IWP Implementation\CAD\Figure 1-2.dwg



LEGEND

- Monitor well
- Deep monitor well
- Multiphase Extraction Well
- MPE & Soil Vapor Extraction Well Cluster
- 51.97 — Water level elevation (ft above 3500 ft msl) (Note: *NM* = Not Measured)
- 3548 — Elevation contour (ft msl)

SOURCE: CYPRESS ENGINEERING SERVICES INC.

INVESTIGATION REPORT
TRANSWESTERN PIPELINE COMPANY, L.P.
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJ. NO: 02.20120037.00

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GROUNDWATER SURFACE
ELEVATIONS IN THE UPPERMOST AQUIFER
NOVEMBER 3, 2013

DRAWN:	CHECKED:	DATE:	FIGURE:
LDG	GPF	12/13	4-1

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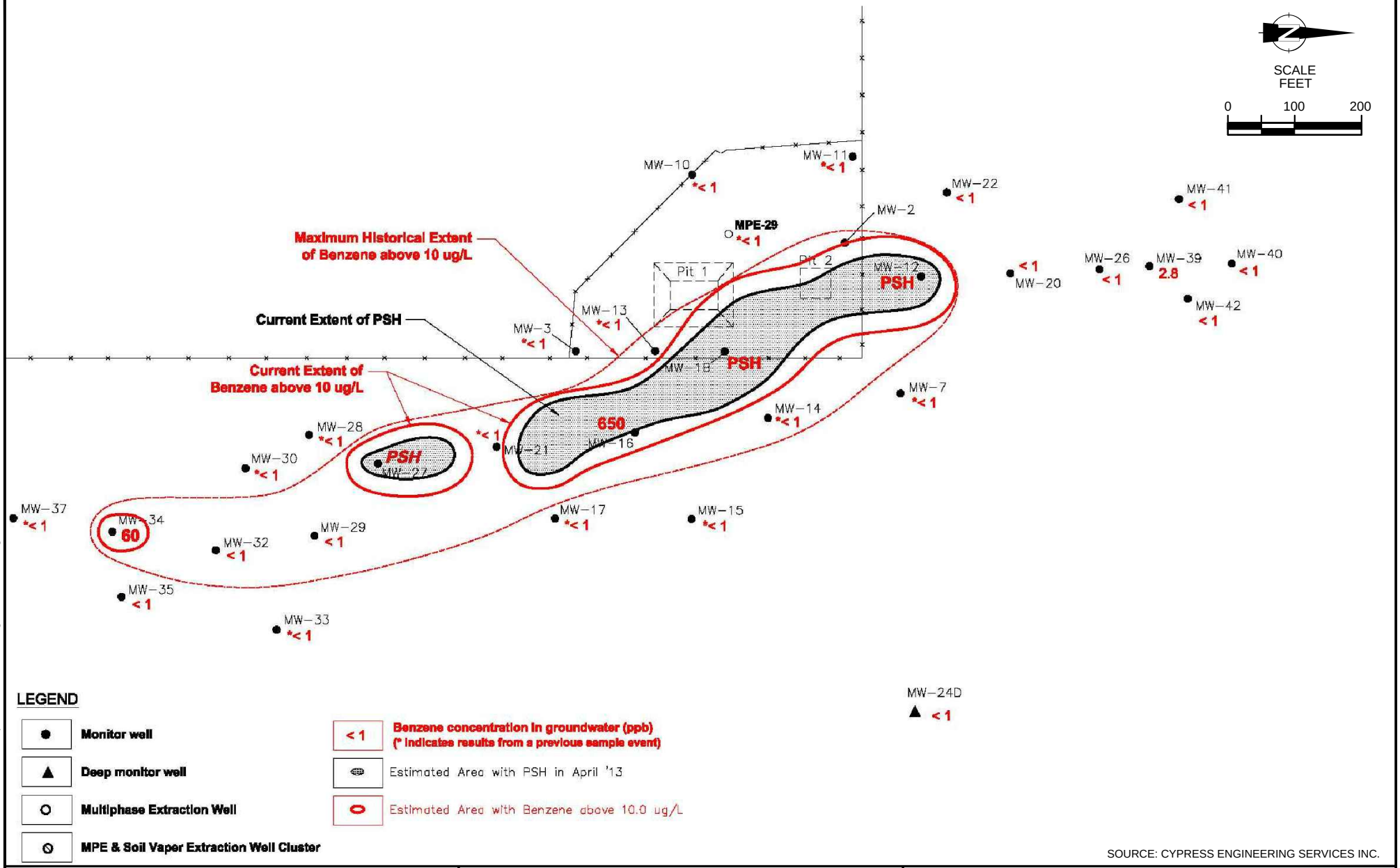

SOURCE: CYPRESS ENGINEERING SERVICES INC.

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ROSWELL, CHAVES COUNTY, NEW MEXICO

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DISTRIBUTION OF DISSOLVED BENZENE
IN THE UPPERMOST AQUIFER

DRAWN:	CHECKED:	DATE:	FIGURE:
LDG	GPF	12/13	4-2

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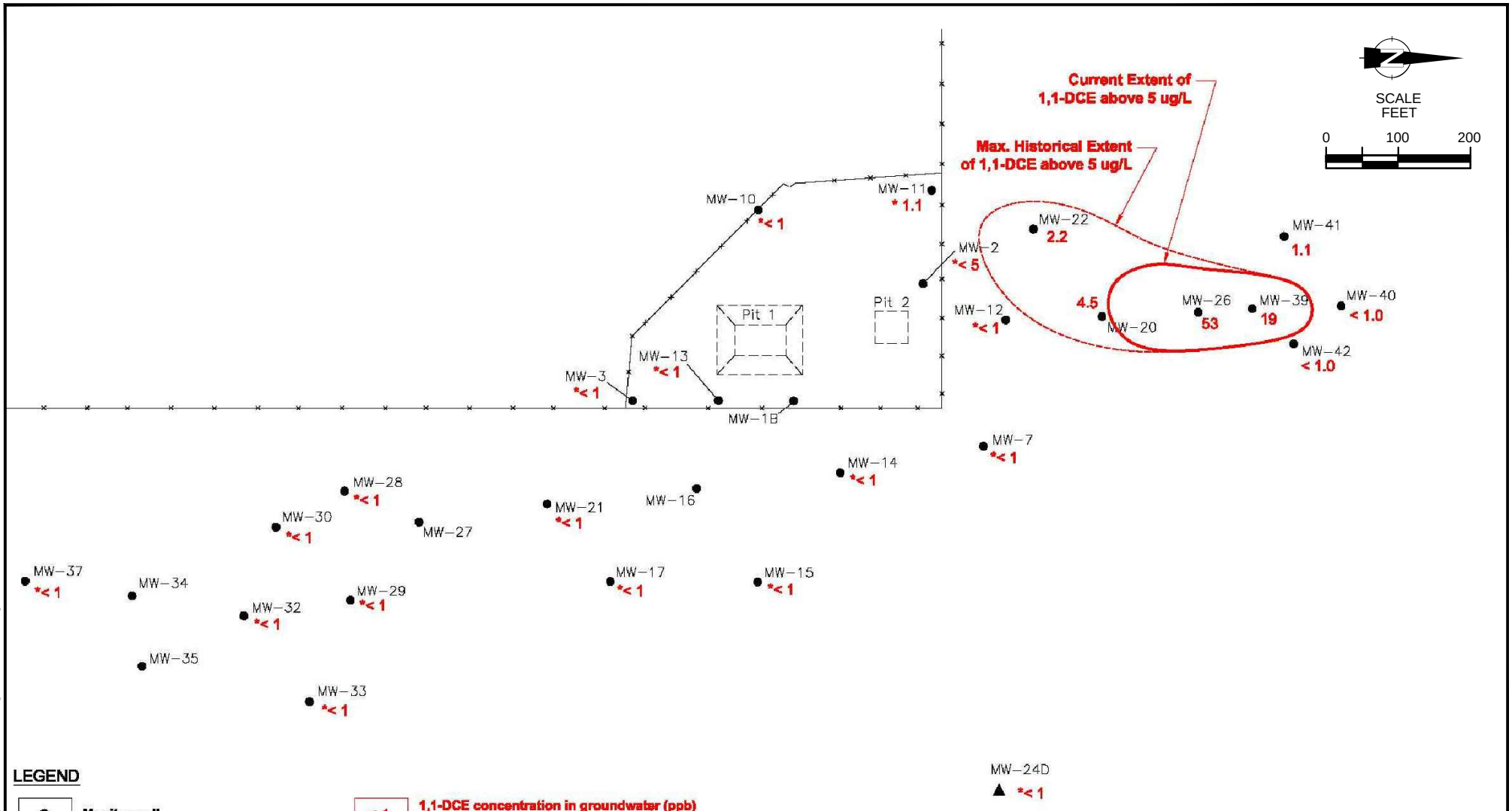

SOURCE: CYPRESS ENGINEERING SERVICES INC.

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ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJ. NO: 02.20120037.00

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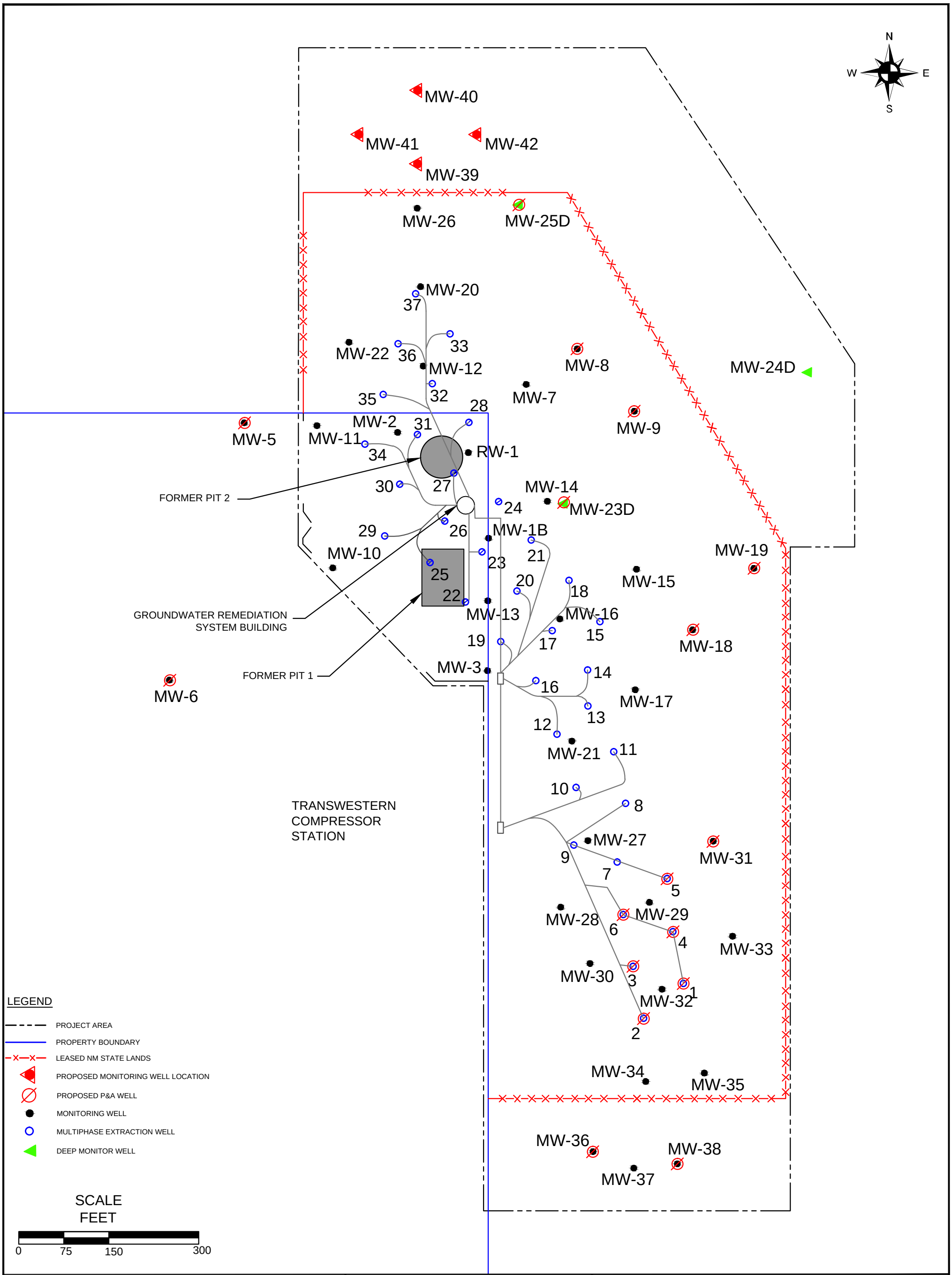
DISTRIBUTION OF DISSOLVED 1,1-DCE
IN THE UPPERMOST AQUIFER

DRAWN:	CHECKED:	DATE:	FIGURE:
LDG	GPF	12/13	4-3

T:\PROJECT FILES\Energy Transfer\Roswell\5-IWP Implementation\CAD\Figures 4-1,2,3.dwg

APPENDICES

Appendix A
Copies of March 2013 IWP Figures



TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9

ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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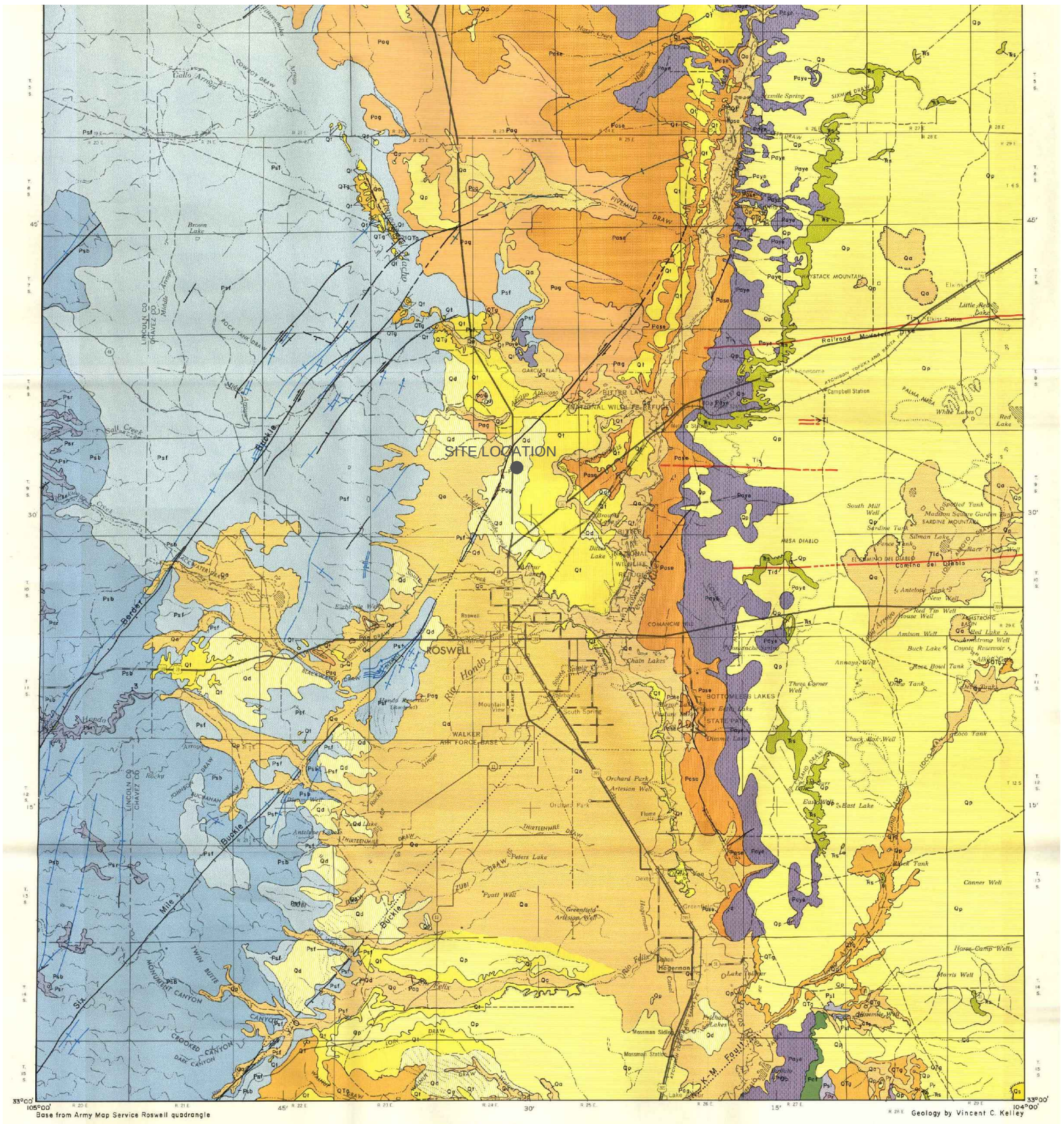
PROJECT AREA

DRAWN:	CHECKED:	DATE:	FIGURE:
CMF	KG	03/13	2-2



EXPLANATION

SEDIMENTARY ROCKS

Surficial Deposits
Qa, alluvium of stream and valley bottoms; Qs, caliche soil; Qe, blow sand and dunes; Ql, landslides; Qd, disturbed gravel, etc. affected by collapse; Qtr, travertine spring deposits; Qt, terrace gravel; Qp, pediment gravel; Qc, caliche

Gatuna Formation (QTg)
Red, tan, and buff sand, gravel, and mudstone

Cub Mountain Formation (TKc)
Purplish mudstone and buff, conglomeratic sandstone

Mesaverde Group (Kmv)
Olive-drab to black shale, grayish sandstone, and coal

Mancos Shale (Km)
Black shale, local sandstone, and limestone

Dakota Sandstone (Kd)
Gray to white sandstone, local shale, and conglomerate

Chinle Formation (Rc)
Reddish-brown mudstone

Santa Rosa Formation (Rs)
Brown, buff, and red sandstone; local conglomerate

Dewey Lake Formation (Pd)
Tan-brown, clean sandstone

Rustler Formation (Pr, Pru, Prl)
Dolomite, gypsum, and reddish sandstone; Pru, upper member; Prl, lower member

Salado Formation (Psl)
Gypsum, dolomite, mudstone, and orange-red, collapsed, recrystallized, residual breccia

Castile Formation (Pc, Pcu, Pcl)
Gypsum, anhydrite and limestone; Pcu, upper member; Pcl, lower member

TRIASSIC — CRETACEOUS — TERTIARY — QUATERNARY

Tansill Formation (Pat)
Dolomite intertonguing northward into gypsum

Yates Formation (Pay, Paye)
Pay, limestone, sandstone, and dolomite southward; Paye, gypsum, dolomite, and siltstone northward

Seven Rivers Formation (Pas, Pase)
Pas, limestone and dolomite southward; Pase, gypsum, mudstone and thin dolomite northward

Queen and Grayburg Formations (Paq, Paqq)
Paq, Queen Formation; dolomite and sandstone southward; gypsum and mudstone northward; Pag, Grayburg Formation; sandstone and dolomite southward; gypsum, red sandstone, and local dolomite northward; Paqq, Queen and Grayburg Formations undivided in north and locally elsewhere

Artesia Group

Capitan Limestone (Pec)

Bell Canyon Formation (Pbc)
Basin-facies limestone and sandstone

Goat Seep Formation (Pgs)
Massive dolomite

San Andres Formation (Psf, Psb, Psr)
Psf, Fourmile Draw Member; Psb, Bonney Canyon Member; Psr, Rio Bonito Member; Psg, Glorieta Sandstone

Yeso Formation (Py)
Tan, yellow and rusty sandstone, red mudstone, dolomite, and gypsum

PERMIAN

Precambrian rocks, undivided (Pe)
Granite, syenite, and gneiss

PRECAMBRIAN

IGNEOUS ROCKS

Sierra Blanca Volcanic Group (Tsb)
Andesitic to rhyolitic breccia, tuff, and flows

Dikes, sills, stocks, and laccoliths (Ti, Tis, Tig, Tir, Tim, Tid)
Ti, not identified; Tis, syenite or latite; Tig, granite or aplite; Tir, rhyolite; Tim, monzonite; Tid, diorite or diabase

TERTIARY

Contact
Dashed where approximately located; dotted where concealed

Key bed or zone within a formation

High-angle fault
Dot on downthrown side; arrows show apparent or inferred lateral shift; dashed where approximately located; dotted where concealed

Anticline
Showing trace of axial plane

Syncline
Showing trace of axial plane

Traces of anticlinal and synclinal bends

Attitude of beds
horizontal — vertical — inclined

Line of measured section

Tie leader
Connects outcrops of equivalent rocks

Lines of slump
In gravel, caliche, evaporites, or other rocks due to flowage or collapse

Small salt piercements and related sinks
Contain cores of Triassic, Dewey Lake, Rustler, or San Andres Formations which are not shown

INDEX MAP OF NEW MEXICO

GEOLOGY OF THE ROSWELL REGION

by Vincent C. Kelley 1971

5 0 5 10 15 20 Miles

TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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REGIONAL GEOLOGICAL MAP

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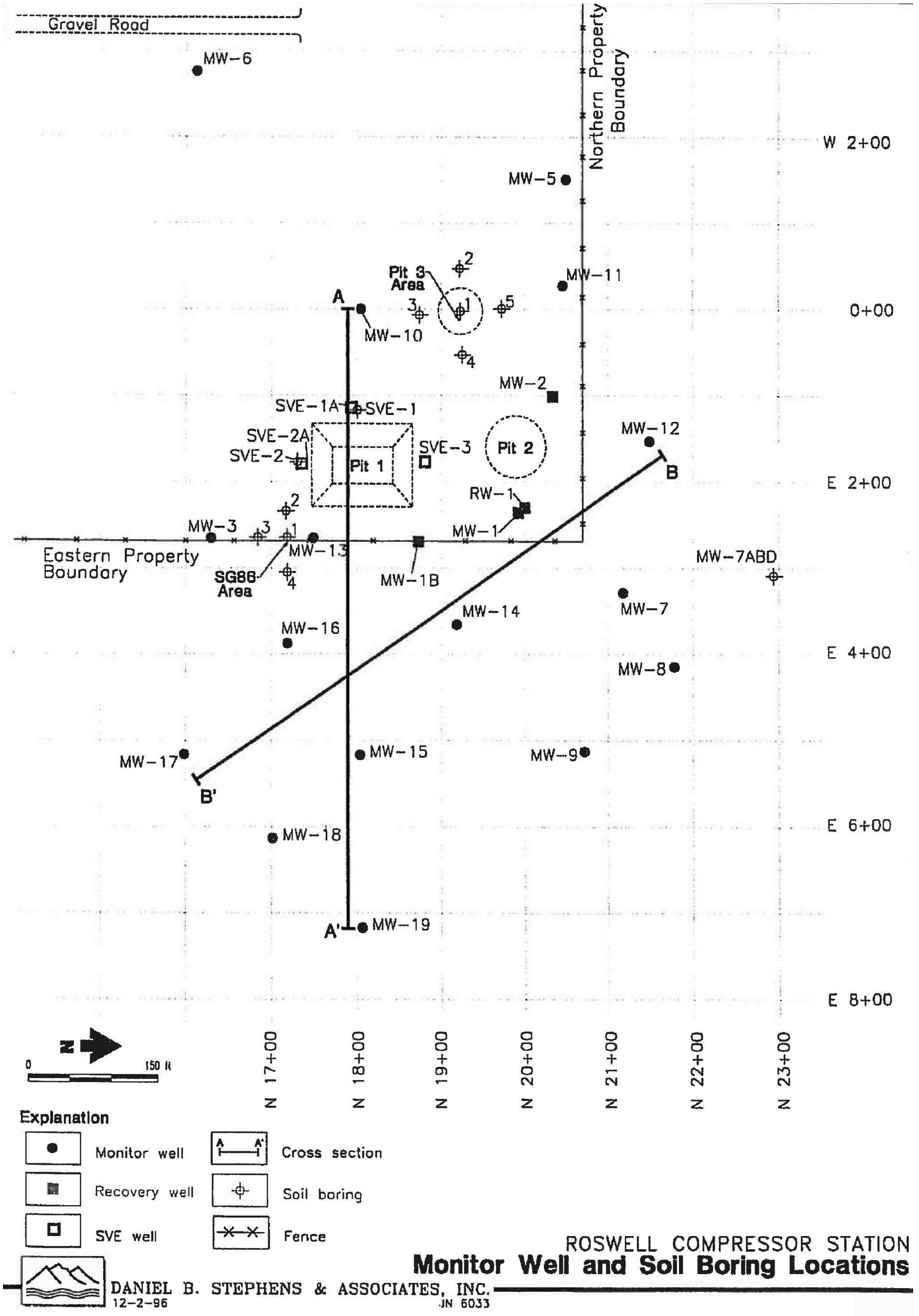
CMF	KG	3/29/2013	3-1



ROSWELL COMPRESSOR STATION

Monitor Well and Soil Boring Locations

DANIEL B. STEPHENS & ASSOCIATES, INC.

12-2-96

JN 6033

TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9

ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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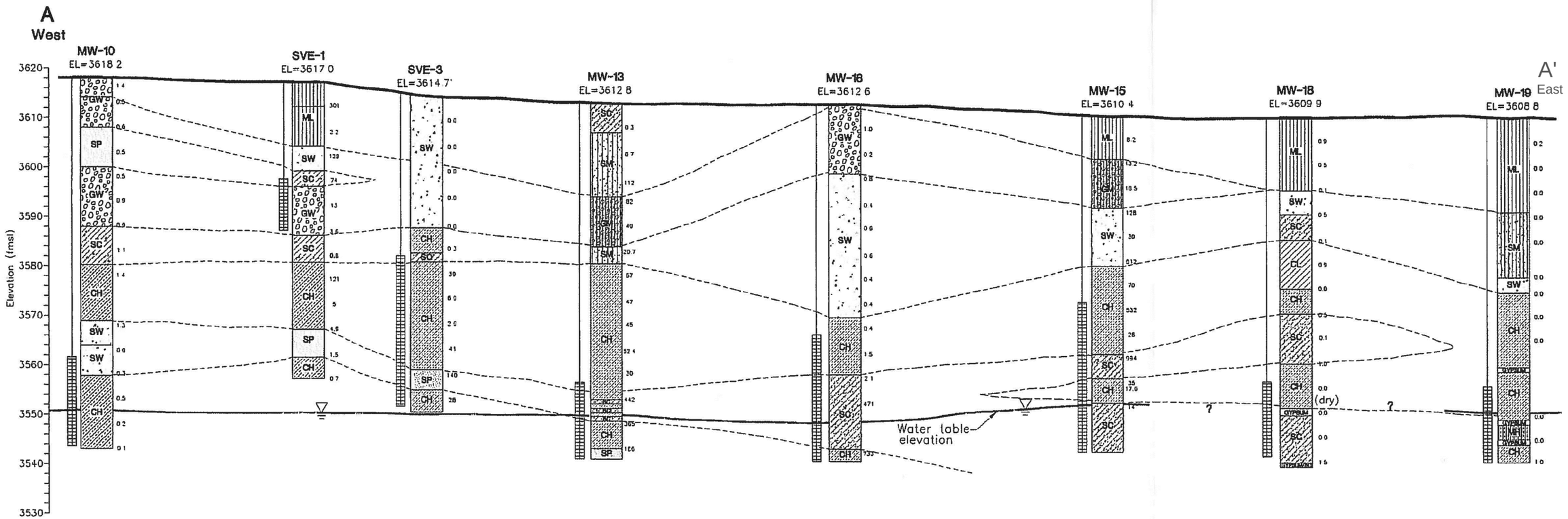
CROSS-SECTION LOCATION MAP

DRAWN:	CHECKED:	DATE:	FIGURE:
CMF	KG	3/29/2013	3-2



Horizontal Scale: 1" = 50'
Vertical Scale: 1" = 20'

- Ground surface
- Well screen
- Water table elevation (fmsl)
- 39 — Organic vapor meter reading (ppmv)
- Approximate contact between soil types
- GYPSUM — Gypsum
- GW — Gravel, well graded, gravel–sand mixture, little or no fines
- GM — Silty gravels, gravels–sand–silty mixtures
- SW — Well graded sands, gravelly sand, little or no fines
- SP — Poorly graded sands, gravelly sands, little or no fines
- SM — Silty sands, sand–silt mixtures
- SC — Clayey sands, sand–clay mixtures
- ML — Inorganic silts and very fine sands, rock flour, silt or clayey fine sands, or clayey silt with slight plasticity
- MH — Elastic silts, sandy silts, and clayey silts with low to moderate plasticity
- CH — Inorganic clays of high plasticity

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ROSWELL COMPRESSOR
Hydrogeologic Cross Section

TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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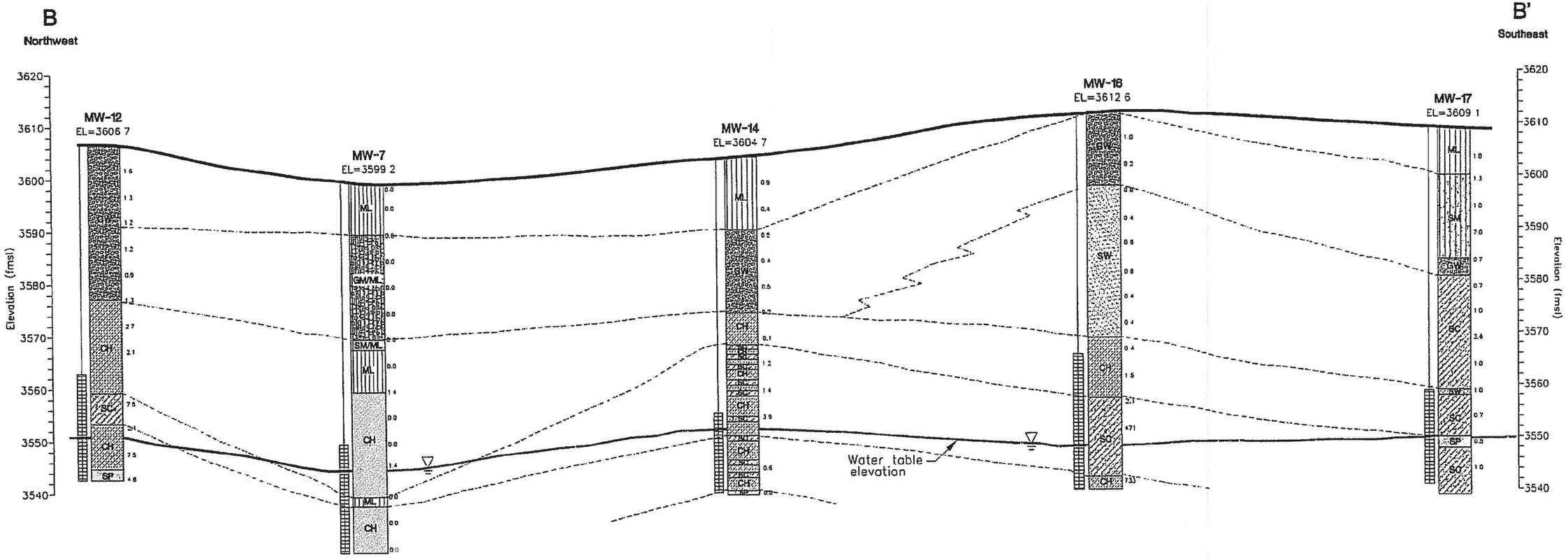
CROSS-SECTION A-A'

DRAWN:	CHECKED:	DATE:	FIGURE:
CMF	KG	3/29/2013	3-3



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- CH — Inorganic clays of high plasticity

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ROSWELL COMPRESSOR STATION
Hydrogeologic Cross Section B-B'

TRANSWESTERN PIPELINE COMPANY
COMPRESSOR STATION NO. 9
ROSWELL, CHAVES COUNTY, NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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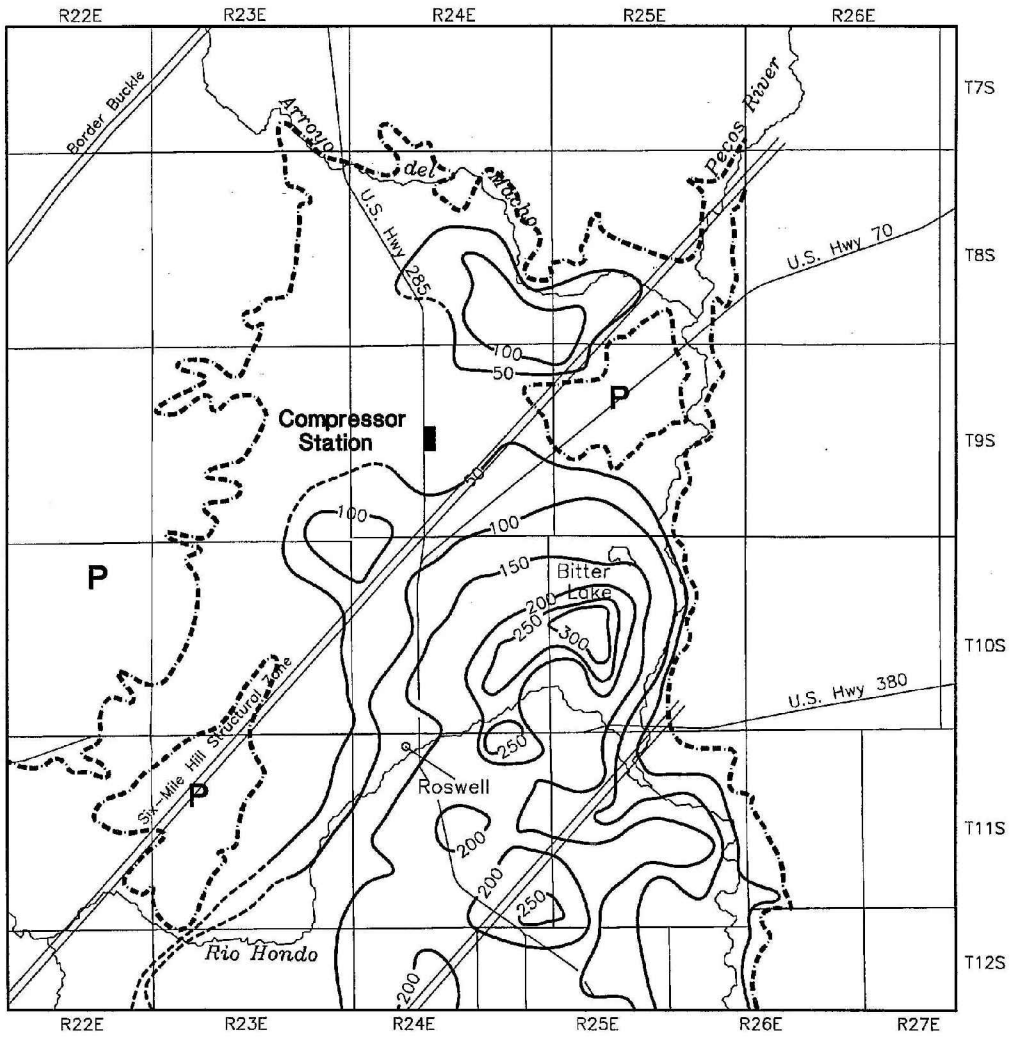
CROSS-SECTION B-B'

DRAWN:	CHECKED:	DATE:	FIGURE:
CMF	KG	3/29/2013	3-4



Sources: Kelley, 1971; Lyford, 1973

N

0 5 miles

Explanation

- Thickness of valley fill alluvium (ft)
- Approx. surface contact between Permian rocks and valley fill alluvium
- P — Outcrop area of Permian rocks

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ROSWELL COMPRESSOR STATION
Appoximate Thickness of Shallow Alluvial Aquifer

ROSWELL, CHAVES COUNTY
NEW MEXICO

PROJECT NUMBER: 02.20120037.00

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APPROXIMATE THICKNESS OF SHALLOW ALLUVIAL AQUIFER

DRAWN:	CHECKED:	DATE:	FIGURE:
CMF	KG	3/29/2013	3-5

Appendix B
Well Installation Logs, OSE-Well Record and Log forms, and OSE-Plugging Record forms

Cypress Engineering Services Inc.
TWP Roswell Station # 9
New Monitor Well Installation 2013
6381 North Main Street
Roswell, NM 88201

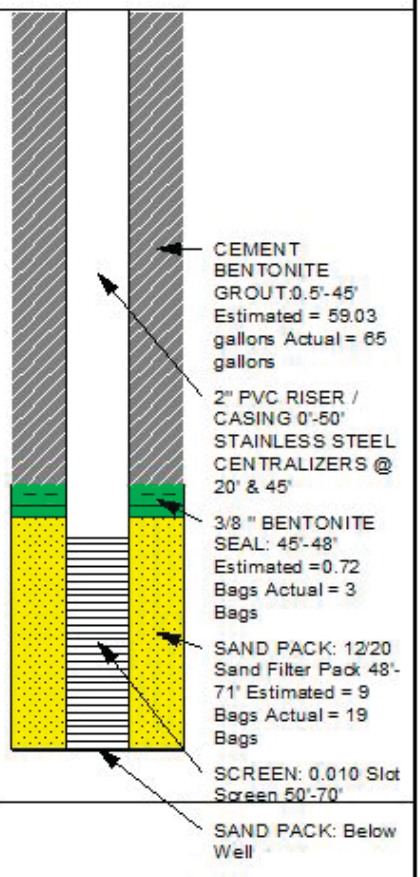
FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-39**
TOTAL DEPTH: **70'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**New Monitor Well**	DRILLING CO.:	**Talon LPE**
SITE LOCATION:	**TWP Roswell Station 9**	DRILLER:	**Jose Salas**
JOB NO.:	**02.2012.0037.00**	RIG TYPE:	**ReichDrill T650 WDII**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Air Rotary 6 1/4"**
PROJECT MANAGER:	**George Robinson, PE**	SAMPLING METHODS:	**2' Split Spoon**
DATES DRILLED:	**08/06/13**	HAMMER WT./DROP	**Direct Push with Rig**

Water level during drilling ▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE	Rec. / ft.	PID VOC PPM	BORING COMPLETION	WELL DESCRIPTION
0-5		SM	SM: Fill: Tan, Sand, Silt, 5 Y/R 8/3. No odor or staining.	0'-10'	Drill Cuttings	0.2		
10-20		GM	GM: 5 YR 8/2, Gravel, silty gravel, gravel, sand, silt mixture. No odor or staining.	10'-20'	Drill Cuttings	0.3		
20-30		SC	SC: 5 YR 4/8-5/8 Brown to reddish brown clayey sand. No odor or staining.	20'-30'	Drill Cuttings	0.2		
30-40				30'-40'	Drill Cuttings	0.2		
40-50		SC	SC: 2.5 YR 4/8 Damp Red to brown clayey sand. No Odor or Staining. Wet at 53' BGS during drilling. Measured depth ot water from TOC 51.64' 08/16/13	40'-50'	Drill Cuttings	0.2		
50-52				50'-52'	2.0'	0.1		
55-57				55'-57'	2.0'	0.1		
60-62				60'-62'	2.0'	0.0		
65-67				65'-67'	2.0'	0.0		
70-75								



NOTES: **Ambient Air Temperature 95 F**

Cypress Engineering Services Inc.
TWP Roswell Station # 9
New Monitor Well Installation 2013
6381 North Main Street
Roswell, NM 88201

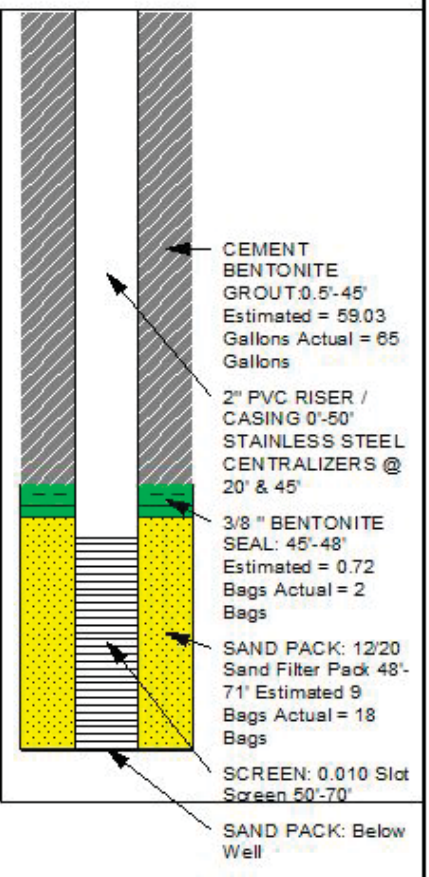
FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-40**
TOTAL DEPTH: **70'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**New Monitor Well**	DRILLING CO.:	**Talon LPE**
SITE LOCATION:	**TWP Roswell Station 9**	DRILLER:	**Jose Salas**
JOB NO.:	**02.2012.0037.00**	RIG TYPE:	**ReichDrill T650 WDII**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Air Rotary 6 1/4"**
PROJECT MANAGER:	**George Robinson, PE**	SAMPLING METHODS:	**2' Split Spoon**
DATES DRILLED:	**08/05/13**	HAMMER WT./DROP	**Direct Push with Rig**

Water level during drilling ▽ Water level in completed well ▼

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE	Rec. / ft.	PID VOC PPM	BORING COMPLETION	WELL DESCRIPTION
0–75		GM	GM: Tan, Sand, Silt,, Silty Gravel 5 Y/R 8/3. No odor or staining.	0'-10'	Drill Cuttings	0.8		
				10'-20'	Drill Cuttings	0.3		
		SM	SM: 5 YR 8/3, Tan Sand, silt mixture. Added 40 gallons of water to help with drilling. No odor or staining.	20'-30'	Drill Cuttings	0.1		
				30'-40'	Drill Cuttings	0.5		
		SC	SC: 5 YR 4/8-5/8 Brown to reddish brown clayey sand. No odor or staining.	40'-50'	Drill Cuttings	0.2		
		SW	SW: 5 Y/R 5/8 Sugar Like Sand. Med Gr. Well Sorted. No odor or staining	50'-52'	2.0'	0.9		
		SC		55'-57'	2.0'	0.8		
		CH	CH: Brown 2.5 YR 5/6 Fat Clay w/ Gypsum to 1"	60'-62'	2.0'	0.3		
		SC	SC: Clayey Sand 2.5YR 5/6 No odor or staining	65'-67'	2.0'	0.2		
			SC: Red 2 YR 4/8 Clayey Sand, H2O @ 62'? No odor or staining. Saturated at 65' BGS, Capillary Fringe 55'-57' BGS	70'-72'	0	n/a		



NOTES: **Ambient Air Temperature 98 F**

Cypress Engineering Services Inc.
TWP Roswell Station # 9
New Monitor Well Installation 2013
6381 North Main Street
Roswell, NM 88201

FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-41**
TOTAL DEPTH: **70'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**New Monitor Well**	DRILLING CO.:	**Talon LPE**
SITE LOCATION:	**TWP Roswell Station 9**	DRILLER:	**Jose Salas**
JOB NO.:	**02.2012.0037.00**	RIG TYPE:	**ReichDrill T650 WDII**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Air Rotary 6 1/4"**
PROJECT MANAGER:	**George Robinson, PE**	SAMPLING METHODS:	**2' Split Spoon**
DATES DRILLED:	**08/05/13**	HAMMER WT./DROP	**Direct Push with Rig**

Water level during drilling ▽ Water level in completed well ▼

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE	Rec. / ft.	PID VOC PPM	BORING COMPLETION	WELL DESCRIPTION
0–75		GM	GM: Tan, Sand, Silt,, Silty Gravel 5 Y/R 8/3. No odor or staining.	0'-10'	Drill Cuttings	0.2		
		GP	GP: 5 YR 8/3,Gravel, poorly graded, mixed with Tan Sand, silt mixture. No odor or staining.	10'-20'	Drill Cuttings	0.1		
		SP	SP: 5 YR 4/8-5/8 Light Brown 5YP 5/8 Sugar Like Sand with Silt fines. No odor or staining.	20'-30'	Drill Cuttings	0.2		
		SP		30'-40'	Drill Cuttings	0.1		
		SC	SC: Reddish Brown 2.5YR 5/8 Clayey Sand, Med to fine grain sand. No odor or staining. Wet at 56' BGS Depth to water 08/16/13@ 56.57' TOC	40'-50'	Drill Cuttings	0.1		
		GC		50'-52'	1.3'	1.9		
		SC	GC: Reddish Brown 2.5 YR 5/8 Clayey pea sized gravel @ 56.7' BGS Capillary Fringe?	55'-57'	1.0'	1.8		
		SC		60'-62'	2.0'	1.4		
		SC	SC: Reddish Brown 2.5 YR 5/8 Clayey sand	65'-67'	1.0'	0.5		
				70'-72'	0	n/a		

Cement Bentonite Grout: 0.5'-45' Estimated Grout = 64 gallons. Actual Grout = 65 gallons

2" PVC Riser / Casing 0'-50' Stainless Steel Centalizers @ 20' & 45'

3/8 " Bentonite Seal: 45'-48' Est. = 0.82 bags. Actual = 2 bags

Sand Pack: 12/20 Sand filter Pack 48'-70' Est.= 9 bags, Actual =16 bags

Screen: 0.010 Slot Screen 50'-70'

Sand Pack: Below Well

NOTES: **Ambient Air Temperature 73 F**

Cypress Engineering Services Inc.
TWP Roswell Station # 9
New Monitor Well Installation 2013
6381 North Main Street
Roswell, NM 88201

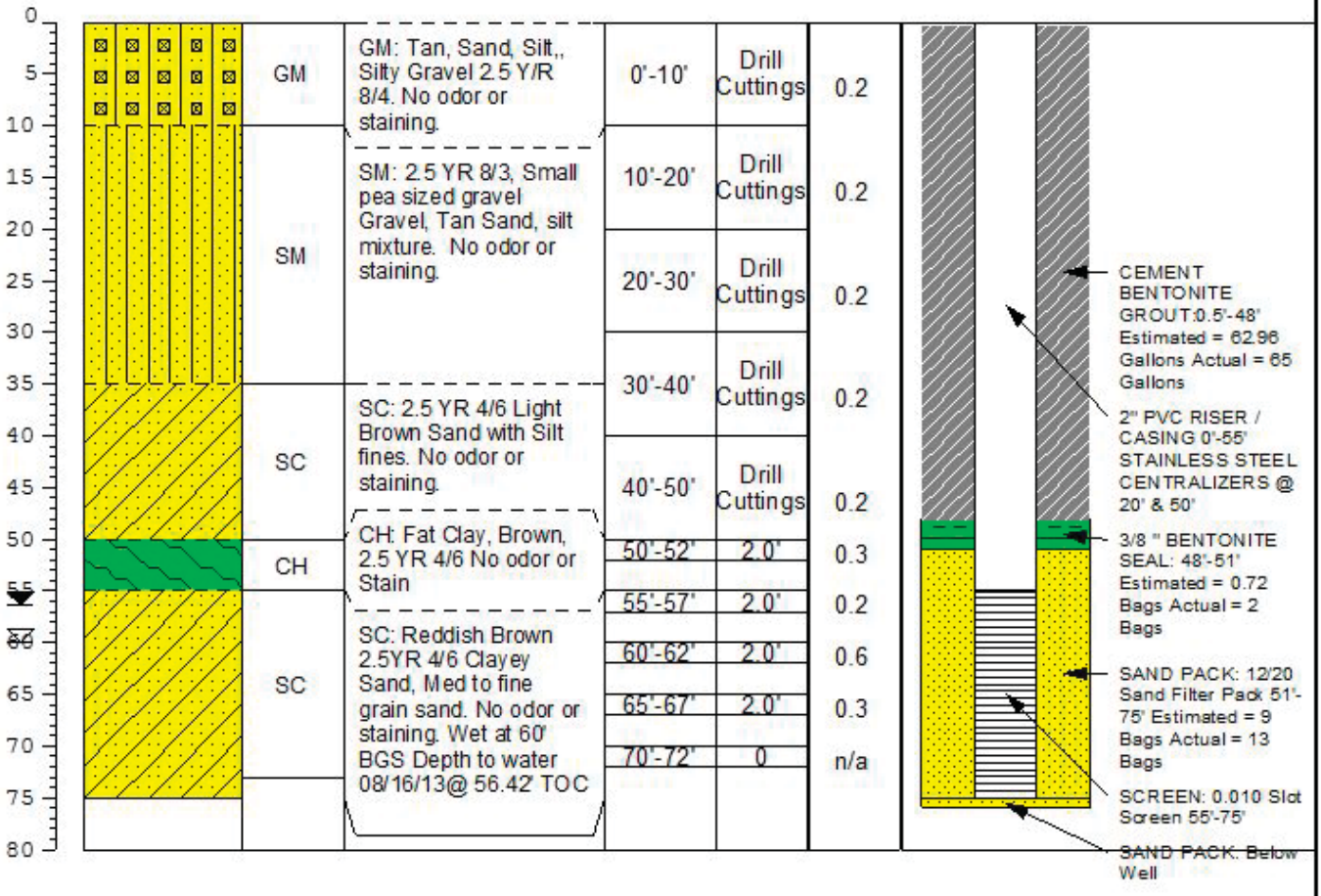
FIELD BOREHOLE LOG

BOREHOLE NO.: **MW-42**
TOTAL DEPTH: **75'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**New Monitor Well**	DRILLING CO.:	**Talon LPE**
SITE LOCATION:	**TWP Roswell Station 9**	DRILLER:	**Jose Salas**
JOB NO.:	**02.2012.0037.00**	RIG TYPE:	**ReichDrill T650 WDII**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Air Rotary 6 1/4"**
PROJECT MANAGER:	**George Robinson, PE**	SAMPLING METHODS:	**2' Split Spoon**
DATES DRILLED:	**08/06/13**	HAMMER WT./DROP	**Direct Push with Rig**

Water level during drilling Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE	Rec. / ft.	PID VOC PPM	BORING COMPLETION	WELL DESCRIPTION
0–80		GM	GM: Tan, Sand, Silt,, Silty Gravel 2.5 Y/R 8/4. No odor or staining.	0'-10'	Drill Cuttings	0.2		
		SM	SM: 2.5 YR 8/3, Small pea sized gravel Gravel, Tan Sand, silt mixture. No odor or staining.	10'-20'	Drill Cuttings	0.2		
				20'-30'	Drill Cuttings	0.2		
				30'-40'	Drill Cuttings	0.2		
		SC	SC: 2.5 YR 4/6 Light Brown Sand with Silt fines. No odor or staining.	40'-50'	Drill Cuttings	0.2		
		CH	CH: Fat Clay, Brown, 2.5 YR 4/6 No odor or Stain	50'-52'	2.0'	0.3		
55				55'-57'	2.0'	0.2		
60		SC	SC: Reddish Brown 2.5YR 4/6 Clayey Sand, Med to fine grain sand. No odor or staining. Wet at 60' BGS Depth to water 08/16/13@ 56.42' TOC	60'-62'	2.0'	0.6		
				65'-67'	2.0'	0.3		
				70'-72'	0	n/a		



NOTES: **Ambient Air Temperature 99 F**

Cypress Engineering Services Inc.
TWP Roswell Station # 9
New Monitor Well Installation 2013
6381 North Main Street
Roswell, NM 88201

FIELD BOREHOLE LOG

BOREHOLE NO.: **SB-42A**
TOTAL DEPTH: **70'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	**New Monitor Well**	DRILLING CO.:	**Talon LPE**
SITE LOCATION:	**TWP Roswell Station 9**	DRILLER:	**Jose Salas**
JOB NO.:	**02.2012.0037.00**	RIG TYPE:	**ReichDrill T650 WDII**
LOGGED BY:	**CM Barnhill, PG**	METHOD OF DRILLING:	**Air Rotary 6 1/4"**
PROJECT MANAGER:	**George Robinson, PE**	SAMPLING METHODS:	**2' Split Spoon**
DATES DRILLED:	**08/06/13**	HAMMER WT./DROP	**Direct Push with Rig**

Water level during drilling ▼ Water level in completed well

DEPTH	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE	Rec. / ft.	PID VOC PPM	BORING COMPLETION	WELL DESCRIPTION
0–75		GM	GM: Light Brown, Sand, Silt,, Silty Gravel.2 5 YR 6/6. No odor or staining.	0'-10'	Drill Cuttings	0.1	CEMENT 0.5'-20' BGS Estimated = 28.74 gallons Actual = 30 gallons	
		SC	SC: 2.5 YR 6/1, Tan Clayey Sand, silt mixture. No odor or staining.	10'-20'	Drill Cuttings	0.2		
		SC	GC: 5 YR 7/4 Clayey Gravel, Gravel, Sand, Clay mixture. No odor or staining.	20'-30'	Drill Cuttings	0.2		
		GP	GP: 5 YR 8/4 Brown, poorly sorted, gravels, gravel,sand, clay mixture. No odor or staining	30'-40'	Drill Cuttings	0.2	BACKFILL 20'-60' BGS	
		SC	SC: Red 2 YR 4/8 Clayey Sand, No odor or staining. No Water.	40'-50'	Drill Cuttings	0.2		
		CH	CH: Brown 2.5 YR 5/6 Fat Clay. No Water.	50'-52'	2.0'	0.6		
				55'-57'	2.0'	0.5		
				60'-62'	2.0'	0.7		
				65'-67'	2.0'	0.8	HYDRATED BENTONITE 60'-70' Estimated = 2.79 bags Actual = 3 Bags	
			SC: 2.5 YR 4/6 Brown Clayey Sand, sand clay mixture, with gypsum to 1", No Water, Odor, or Staining.	70'-72'	0	n/a		

NOTES: **Ambient Air Temperature 89 F Boring was Plugged & Abandoned**

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
Pod 1 (MW-39)	RA-11993
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Transwestern Pipeline Company, LLC	575-625-8022
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
6381 North Main Street	Roswell / NM / 88201

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	33	30	10.0	N
LONGITUDE	104	30	9.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1575	Shane Currie	Talon/LPE

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
August 6, 2013	August 6, 2013	70'	71'	53'

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ○ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 51.64'

DRILLING FLUID: ◉ AIR ○ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ○ ROTARY ○ HAMMER ○ CABLE TOOL ○ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	50	5 5/8	Sch 40 PVC, 20' & 45'	Flush Joint	2.067	0.154	
50	70	5 5/8	Sch 40 PVC	Flush Joint	2.067	0.154	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0.5	45	5 5/8	Cement Bentonite Grout	7.80	Tremie
45	48	5 5/8	Bentonite Seal	0.53	Tremie
48	71	5 5/8	Filter Sand	4.03	Tremie

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10	10	Silty Sands, Sand-Silt Mixture	◯ Y ◯ N	
10	20	10	Gravel-Silty Gravel-Sand Silt Mixtures	◯ Y ◯ N	
20	30	10	Silty Sand, Sand-Silt Mixture, Clayey Sand	◯ Y ◯ N	
30	40	10	Light Brown, Sand-Clay Mixture	◯ Y ◯ N	
40	50	10	Reddish Brown, Clayey Sand, Damp	◯ Y ◯ N	
50	60	10	Wet, Saturated	◯ Y ◯ N	
60	70	10	Saturated	◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◯ PUMP ◯ AIR LIFT ◯ BAILER ◯ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jose Salas

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
Pod 1 (MW-39)	RA-11993
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Transwestern Pipeline Company, LLC	575-625-8022
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
6381 North Main Street	Roswell / NM / 88201

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	33	30	10.0	N
LONGITUDE	104	30	9.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1575	Shane Currie	Talon/LPE

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
August 6, 2013	August 6, 2013	70'	71'	53'

COMPLETED WELL IS: ARTESIAN DRY HOLE SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 51.64'

DRILLING FLUID: AIR MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	50	5 5/8	Sch 40 PVC, 20' & 45'	Flush Joint	2.067	0.154	
50	70	5 5/8	Sch 40 PVC	Flush Joint	2.067	0.154	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0.5	45	5 5/8	Cement Bentonite Grout	7.80	Tremie
45	48	5 5/8	Bentonite Seal	0.53	Tremie
48	71	5 5/8	Filter Sand	4.03	Tremie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10	10	Silty Sands, Sand-Silt Mixture	◯ Y ◯ N	
10	20	10	Gravel-Silty Gravel-Sand Silt Mixtures	◯ Y ◯ N	
20	30	10	Silty Sand, Sand-Silt Mixture, Clayey Sand	◯ Y ◯ N	
30	40	10	Light Brown, Sand-Clay Mixture	◯ Y ◯ N	
40	50	10	Reddish Brown, Clayey Sand, Damp	◯ Y ◯ N	
50	60	10	Wet, Saturated	◯ Y ◯ N	
60	70	10	Saturated	◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◯ PUMP ◯ AIR LIFT ◯ BAILER ◯ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jose Salas

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

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1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
Pod 1 (MW-39)	RA-11993
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Transwestern Pipeline Company, LLC	575-625-8022
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
6381 North Main Street	Roswell / NM / 88201

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	33	30	10.0	N
LONGITUDE	104	30	9.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1575	Shane Currie	Talon/LPE

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
August 6, 2013	August 6, 2013	70'	71'	53'

COMPLETED WELL IS: ARTESIAN DRY HOLE SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 51.64'

DRILLING FLUID: AIR MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	50	5 5/8	Sch 40 PVC, 20' & 45'	Flush Joint	2.067	0.154	
50	70	5 5/8	Sch 40 PVC	Flush Joint	2.067	0.154	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0.5	45	5 5/8	Cement Bentonite Grout	7.80	Tremie
45	48	5 5/8	Bentonite Seal	0.53	Tremie
48	71	5 5/8	Filter Sand	4.03	Tremie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10	10	Silty Sands, Sand-Silt Mixture	◯ Y ◯ N	
10	20	10	Gravel-Silty Gravel-Sand Silt Mixtures	◯ Y ◯ N	
20	30	10	Silty Sand, Sand-Silt Mixture, Clayey Sand	◯ Y ◯ N	
30	40	10	Light Brown, Sand-Clay Mixture	◯ Y ◯ N	
40	50	10	Reddish Brown, Clayey Sand, Damp	◯ Y ◯ N	
50	60	10	Wet, Saturated	◯ Y ◯ N	
60	70	10	Saturated	◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
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				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◯ PUMP ◯ AIR LIFT ◯ BAILER ◯ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jose Salas

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
Pod 1 (MW-39)	RA-11993
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
Transwestern Pipeline Company, LLC	575-625-8022
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
6381 North Main Street	Roswell / NM / 88201

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	33	30	10.0	N
LONGITUDE	104	30	9.4	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1575	Shane Currie	Talon/LPE

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
August 6, 2013	August 6, 2013	70'	71'	53'

COMPLETED WELL IS: ARTESIAN DRY HOLE SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 51.64'

DRILLING FLUID: AIR MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ROTARY HAMMER CABLE TOOL OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	50	5 5/8	Sch 40 PVC, 20' & 45'	Flush Joint	2.067	0.154	
50	70	5 5/8	Sch 40 PVC	Flush Joint	2.067	0.154	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0.5	45	5 5/8	Cement Bentonite Grout	7.80	Tremie
45	48	5 5/8	Bentonite Seal	0.53	Tremie
48	71	5 5/8	Filter Sand	4.03	Tremie

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	10	10	Silty Sands, Sand-Silt Mixture	◯ Y ◯ N	
10	20	10	Gravel-Silty Gravel-Sand Silt Mixtures	◯ Y ◯ N	
20	30	10	Silty Sand, Sand-Silt Mixture, Clayey Sand	◯ Y ◯ N	
30	40	10	Light Brown, Sand-Clay Mixture	◯ Y ◯ N	
40	50	10	Reddish Brown, Clayey Sand, Damp	◯ Y ◯ N	
50	60	10	Wet, Saturated	◯ Y ◯ N	
60	70	10	Saturated	◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	
				◯ Y ◯ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ◯ PUMP ◯ AIR LIFT ◯ BAILER ◯ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jose Salas

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-5

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 9.2 sec
Longitude: 104 deg, 30 min, 10 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl),
by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-6

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 8.5 sec
Longitude: 104 deg, 30 min, 0.3 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-8

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 9.5 sec
Longitude: 104 deg, 30 min, 8.9 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl),
by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-9

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 9.3 sec
Longitude: 104 deg, 30 min, 8.7 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 79 ft below ground level (bgl),
by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 80	Bentonite	116.58	116.58	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-18

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 8.7 sec
Longitude: 104 deg, 30 min, 8.4 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0					
10					
20					
30					
40					
50					
60					
70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-19

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 8.8 sec
Longitude: 104 deg, 30 min, 8.3 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0					
10					
20					
30					
40					
50					
60					
70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-31

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 8.2 sec
Longitude: 104 deg, 30 min, 8.1 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 70 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0					
10					
20					
30					
40					
50					
60					
70	Bentonite	103.30	103.30	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-36

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 7.2 sec
Longitude: 104 deg, 30 min, 8.8 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 68 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 70	Bentonite	100.34	100.34	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-38

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 7.2 sec
Longitude: 104 deg, 30 min, 8.5 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 75 ft below ground level (bgl),
by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 80	Bentonite	110.67	110.67	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-23

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 9.5 sec
Longitude: 104 deg, 30 min, 9.1 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 187 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 190	Bentonite	122.64	122.64	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: MW-25

Well owner: Transwestern Pipeline Company, LLC Phone No.: (575) 625-8022

Mailing address: 6381 North Main Street

City: Roswell State: NM Zip code: 88201

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Talon/LPE

2) New Mexico Well Driller License No.: 1575 Expiration Date: 07/31/2014

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Jose Salas, Ronnie Rodriguiz

4) Date well plugging began: 08/05/2013 Date well plugging concluded: 08/15/2013

5) GPS Well Location: Latitude: 33 deg, 30 min, 9.8 sec
Longitude: 104 deg, 30 min, 9.2 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 149 ft below ground level (bgl), by the following manner: Open Reel Measuring Tape

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 07/29/2013

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
0 – 150	Bentonite	97.72	97.72	Tremie	Open Hole

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Shane Currie , say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller Date

Appendix C
Analytical Data Packages

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 22, 2013

George Robinson

Cypress Engineering
7171 Highway 6 North
Suite 102
Houston, TX 770952422
TEL: (281) 797-3420
FAX (281) 859-1881

RE: TWP Roswell Station 9 OrderNo.: 1308818

Dear George Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/20/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-39
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 5:10:00 PM
Lab ID: 1308818-001
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	2.8	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Toluene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Ethylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Naphthalene	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Acetone	ND	10		µg/L	1	8/21/2013 3:34:07 PM	R12794
Bromobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Bromoform	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Bromomethane	ND	3.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
2-Butanone	ND	10		µg/L	1	8/21/2013 3:34:07 PM	R12794
Carbon disulfide	ND	10		µg/L	1	8/21/2013 3:34:07 PM	R12794
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Chlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Chloroethane	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Chloroform	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Chloromethane	ND	3.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Dibromomethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1-Dichloroethane	2.0	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1-Dichloroethene	19	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-39
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 5:10:00 PM
Lab ID: 1308818-001
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
2-Hexanone	ND	10		µg/L	1	8/21/2013 3:34:07 PM	R12794
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2013 3:34:07 PM	R12794
Methylene Chloride	ND	3.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Styrene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Vinyl chloride	ND	1.0		µg/L	1	8/21/2013 3:34:07 PM	R12794
Xylenes, Total	ND	1.5		µg/L	1	8/21/2013 3:34:07 PM	R12794
Surr: 1,2-Dichloroethane-d4	95.9	70-130		%REC	1	8/21/2013 3:34:07 PM	R12794
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	8/21/2013 3:34:07 PM	R12794
Surr: Dibromofluoromethane	111	70-130		%REC	1	8/21/2013 3:34:07 PM	R12794
Surr: Toluene-d8	96.1	70-130		%REC	1	8/21/2013 3:34:07 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-40
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 4:00:00 PM
Lab ID: 1308818-002
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Toluene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Ethylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Naphthalene	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Acetone	ND	10		µg/L	1	8/21/2013 4:03:02 PM	R12794
Bromobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Bromoform	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Bromomethane	ND	3.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
2-Butanone	ND	10		µg/L	1	8/21/2013 4:03:02 PM	R12794
Carbon disulfide	ND	10		µg/L	1	8/21/2013 4:03:02 PM	R12794
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Chlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Chloroethane	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Chloroform	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Chloromethane	ND	3.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Dibromomethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-40
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 4:00:00 PM
Lab ID: 1308818-002
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
2-Hexanone	ND	10		µg/L	1	8/21/2013 4:03:02 PM	R12794
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2013 4:03:02 PM	R12794
Methylene Chloride	ND	3.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Styrene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Vinyl chloride	ND	1.0		µg/L	1	8/21/2013 4:03:02 PM	R12794
Xylenes, Total	ND	1.5		µg/L	1	8/21/2013 4:03:02 PM	R12794
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	8/21/2013 4:03:02 PM	R12794
Surr: 4-Bromofluorobenzene	102	70-130		%REC	1	8/21/2013 4:03:02 PM	R12794
Surr: Dibromofluoromethane	112	70-130		%REC	1	8/21/2013 4:03:02 PM	R12794
Surr: Toluene-d8	98.1	70-130		%REC	1	8/21/2013 4:03:02 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-41
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 5:00:00 PM
Lab ID: 1308818-003
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Toluene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Ethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Naphthalene	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Acetone	ND	10		µg/L	1	8/21/2013 5:29:37 PM	R12794
Bromobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Bromoform	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Bromomethane	ND	3.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
2-Butanone	ND	10		µg/L	1	8/21/2013 5:29:37 PM	R12794
Carbon disulfide	ND	10		µg/L	1	8/21/2013 5:29:37 PM	R12794
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Chlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Chloroethane	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Chloroform	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Chloromethane	ND	3.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Dibromomethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1-Dichloroethene	1.1	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-41
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 5:00:00 PM
Lab ID: 1308818-003
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
2-Hexanone	ND	10		µg/L	1	8/21/2013 5:29:37 PM	R12794
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2013 5:29:37 PM	R12794
Methylene Chloride	ND	3.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Styrene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Vinyl chloride	ND	1.0		µg/L	1	8/21/2013 5:29:37 PM	R12794
Xylenes, Total	ND	1.5		µg/L	1	8/21/2013 5:29:37 PM	R12794
Surr: 1,2-Dichloroethane-d4	95.1	70-130		%REC	1	8/21/2013 5:29:37 PM	R12794
Surr: 4-Bromofluorobenzene	99.9	70-130		%REC	1	8/21/2013 5:29:37 PM	R12794
Surr: Dibromofluoromethane	110	70-130		%REC	1	8/21/2013 5:29:37 PM	R12794
Surr: Toluene-d8	98.5	70-130		%REC	1	8/21/2013 5:29:37 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 4:20:00 PM
Lab ID: 1308818-004
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Toluene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Ethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Naphthalene	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Acetone	ND	10		µg/L	1	8/21/2013 5:58:25 PM	R12794
Bromobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Bromoform	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Bromomethane	ND	3.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
2-Butanone	ND	10		µg/L	1	8/21/2013 5:58:25 PM	R12794
Carbon disulfide	ND	10		µg/L	1	8/21/2013 5:58:25 PM	R12794
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Chlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Chloroethane	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Chloroform	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Chloromethane	ND	3.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Dibromomethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42
Project: TWP Roswell Station 9
Collection Date: 8/16/2013 4:20:00 PM
Lab ID: 1308818-004
Matrix: AQUEOUS
Received Date: 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
2-Hexanone	ND	10		µg/L	1	8/21/2013 5:58:25 PM	R12794
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2013 5:58:25 PM	R12794
Methylene Chloride	ND	3.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Styrene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Vinyl chloride	ND	1.0		µg/L	1	8/21/2013 5:58:25 PM	R12794
Xylenes, Total	ND	1.5		µg/L	1	8/21/2013 5:58:25 PM	R12794
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%REC	1	8/21/2013 5:58:25 PM	R12794
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	8/21/2013 5:58:25 PM	R12794
Surr: Dibromofluoromethane	115	70-130		%REC	1	8/21/2013 5:58:25 PM	R12794
Surr: Toluene-d8	96.6	70-130		%REC	1	8/21/2013 5:58:25 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: Trip Blank
Project: TWP Roswell Station 9
Collection Date:
Lab ID: 1308818-005 **Matrix:** AQUEOUS **Received Date:** 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Toluene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Ethylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Naphthalene	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
2-Methylnaphthalene	ND	4.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Acetone	ND	10		µg/L	1	8/21/2013 6:27:11 PM	R12794
Bromobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Bromodichloromethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Bromoform	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Bromomethane	ND	3.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
2-Butanone	ND	10		µg/L	1	8/21/2013 6:27:11 PM	R12794
Carbon disulfide	ND	10		µg/L	1	8/21/2013 6:27:11 PM	R12794
Carbon Tetrachloride	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Chlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Chloroethane	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Chloroform	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Chloromethane	ND	3.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
2-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
4-Chlorotoluene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
cis-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Dibromochloromethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Dibromomethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1-Dichloroethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1-Dichloroethene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,3-Dichloropropane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
2,2-Dichloropropane	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: Trip Blank
Project: TWP Roswell Station 9
Collection Date:
Lab ID: 1308818-005 **Matrix:** AQUEOUS **Received Date:** 8/20/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,1-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Hexachlorobutadiene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
2-Hexanone	ND	10		µg/L	1	8/21/2013 6:27:11 PM	R12794
Isopropylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
4-Isopropyltoluene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
4-Methyl-2-pentanone	ND	10		µg/L	1	8/21/2013 6:27:11 PM	R12794
Methylene Chloride	ND	3.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
n-Butylbenzene	ND	3.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
n-Propylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
sec-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Styrene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
tert-Butylbenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
trans-1,2-DCE	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Trichlorofluoromethane	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Vinyl chloride	ND	1.0		µg/L	1	8/21/2013 6:27:11 PM	R12794
Xylenes, Total	ND	1.5		µg/L	1	8/21/2013 6:27:11 PM	R12794
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	1	8/21/2013 6:27:11 PM	R12794
Surr: 4-Bromofluorobenzene	99.5	70-130		%REC	1	8/21/2013 6:27:11 PM	R12794
Surr: Dibromofluoromethane	111	70-130		%REC	1	8/21/2013 6:27:11 PM	R12794
Surr: Toluene-d8	99.1	70-130		%REC	1	8/21/2013 6:27:11 PM	R12794

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308818**

22-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364665** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308818**

22-Aug-13

Client: Cypress Engineering
Project: TWP Roswell Station 9

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364665** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **100ng lcs1**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364667** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.3	70	130			
Toluene	19	1.0	20.00	0	93.5	82.2	124			
Chlorobenzene	18	1.0	20.00	0	88.2	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308818**

22-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **100ng lcs1**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364667** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	24	1.0	20.00	0	121	83.5	155			
Trichloroethene (TCE)	18	1.0	20.00	0	91.6	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Sample ID **1308818-002a ms**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-40**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364675** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	67.9	137			
Toluene	19	1.0	20.00	0	96.8	77	127			
Chlorobenzene	18	1.0	20.00	0	92.2	70	130			
1,1-Dichloroethene	24	1.0	20.00	0	118	66.5	131			
Trichloroethene (TCE)	18	1.0	20.00	0	92.5	66.3	134			
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.9	70	130			
Surr: Dibromofluoromethane	11		10.00		109	70	130			
Surr: Toluene-d8	9.9		10.00		99.4	70	130			

Sample ID **1308818-002a msd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-40**	Batch ID: **R12794**	RunNo: **12794**
Prep Date:	Analysis Date: **8/21/2013**	SeqNo: **364676** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.0	67.9	137	4.65	20	
Toluene	18	1.0	20.00	0	92.2	77	127	4.83	20	
Chlorobenzene	17	1.0	20.00	0	86.6	70	130	6.26	20	
1,1-Dichloroethene	23	1.0	20.00	0	113	66.5	131	4.55	20	
Trichloroethene (TCE)	18	1.0	20.00	0	89.4	66.3	134	3.37	20	
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.5		10.00		95.2	70	130	0	0	
Surr: Dibromofluoromethane	11		10.00		106	70	130	0	0	
Surr: Toluene-d8	9.6		10.00		96.2	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: CYP | Work Order Number: 1308818 | RcptNo: 1

Received by/date: MG 08/20/2013

Logged By: **Anne Thorne** 8/20/2013 10:00:00 AM Anne Thorne

Completed By: **Anne Thorne** 8/20/2013 Anne Thorne

Reviewed By: IO 08/20/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.5	Good	Yes			

Chain-of-Custody Record

Client: Cypress Engineering Services, Inc.
ATTN: George Robinson, PE
Mailing Address: 1171 Highway 6 North Suite 102
Houston, Texas 77095
Phone #: 281. 797. 3420
email or Fax#: george.robinson@cypressinc.us
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: TWP Roswell Station 9
Project #: New Monitor Well GW Monitoring 02.20120037.00
Project Manager: George Robinson, PE; Stacy Boutinghouse PG
Sampler: CM Barnhill, PG
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1308818
8/16/13	17:10	H_2O	MW-39	3x40mL VOA's	HCl	-001
8/16/13	1600	H_2O	MW-40	3x40mL VOA's	HCl	-002
8/16/13	1700	H_2O	MW-41	3x40mL VOA's	HCl	-003
8/16/13	16:22	H_2O	MW-42	3x40mL VOA's	HCl	-004
			Trip Blank	2x40mL VOA's	HCl	-005

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)						Air Bubbles (Y or N)
									X							N
									X							N
									X							N
									X							N
									X							

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/19/13	1500			08/20/13	10:00
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Any Questions Please Call George.Robinson@ 281. 797. 3420

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 20, 2013

George Robinson

Cypress Engineering
7171 Highway 6 North
Suite 102
Houston, TX 770952422
TEL: (281) 797-3420
FAX (281) 859-1881

RE: TWP Roswell Station 9 OrderNo.: 1308625

Dear George Robinson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/14/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-39 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 5:30:00 PM
Lab ID: 1308625-001 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Toluene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Ethylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Naphthalene	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 2:04:37 AM	8879
2-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Acetone	ND	0.73		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Bromobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Bromodichloromethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Bromoform	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Bromomethane	ND	0.15		mg/Kg	1	8/17/2013 2:04:37 AM	8879
2-Butanone	ND	0.49		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Carbon disulfide	ND	0.49		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Carbon tetrachloride	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Chlorobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Chloroethane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Chloroform	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Chloromethane	ND	0.15		mg/Kg	1	8/17/2013 2:04:37 AM	8879
2-Chlorotoluene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
4-Chlorotoluene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
cis-1,2-DCE	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2-Dibromo-3-chloropropane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Dibromochloromethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Dibromomethane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1-Dichloroethane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1-Dichloroethene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2-Dichloropropane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,3-Dichloropropane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
2,2-Dichloropropane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-39 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 5:30:00 PM
Lab ID: 1308625-001 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
1,1-Dichloropropene	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Hexachlorobutadiene	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
2-Hexanone	ND	0.49		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Isopropylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
4-Isopropyltoluene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Methylene chloride	ND	0.15		mg/Kg	1	8/17/2013 2:04:37 AM	8879
n-Butylbenzene	ND	0.15		mg/Kg	1	8/17/2013 2:04:37 AM	8879
n-Propylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
sec-Butylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Styrene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
tert-Butylbenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
trans-1,2-DCE	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2,3-Trichlorobenzene	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Trichlorofluoromethane	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
1,2,3-Trichloropropane	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Vinyl chloride	ND	0.049		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Xylenes, Total	ND	0.097		mg/Kg	1	8/17/2013 2:04:37 AM	8879
Surr: 1,2-Dichloroethane-d4	90.7	70-130		%REC	1	8/17/2013 2:04:37 AM	8879
Surr: 4-Bromofluorobenzene	90.2	70-130		%REC	1	8/17/2013 2:04:37 AM	8879
Surr: Dibromofluoromethane	99.3	70-130		%REC	1	8/17/2013 2:04:37 AM	8879
Surr: Toluene-d8	98.5	70-130		%REC	1	8/17/2013 2:04:37 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-40 60'-62'
Project: TWP Roswell Station 9
Collection Date: 8/5/2013 5:55:00 PM
Lab ID: 1308625-002 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Toluene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Naphthalene	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 3:29:20 AM	8879
2-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Acetone	ND	0.72		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Bromobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Bromodichloromethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Bromoform	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Bromomethane	ND	0.14		mg/Kg	1	8/17/2013 3:29:20 AM	8879
2-Butanone	ND	0.48		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Carbon disulfide	ND	0.48		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Carbon tetrachloride	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Chlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Chloroethane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Chloroform	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Chloromethane	ND	0.14		mg/Kg	1	8/17/2013 3:29:20 AM	8879
2-Chlorotoluene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
4-Chlorotoluene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
cis-1,2-DCE	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2-Dibromo-3-chloropropane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Dibromochloromethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Dibromomethane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1-Dichloroethane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1-Dichloroethene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2-Dichloropropane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,3-Dichloropropane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
2,2-Dichloropropane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-40 60'-62'
Project: TWP Roswell Station 9
Collection Date: 8/5/2013 5:55:00 PM
Lab ID: 1308625-002 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
1,1-Dichloropropene	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Hexachlorobutadiene	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
2-Hexanone	ND	0.48		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Isopropylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
4-Isopropyltoluene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Methylene chloride	ND	0.14		mg/Kg	1	8/17/2013 3:29:20 AM	8879
n-Butylbenzene	ND	0.14		mg/Kg	1	8/17/2013 3:29:20 AM	8879
n-Propylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
sec-Butylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Styrene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
tert-Butylbenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
trans-1,2-DCE	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2,3-Trichlorobenzene	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Trichlorofluoromethane	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
1,2,3-Trichloropropane	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Vinyl chloride	ND	0.048		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Xylenes, Total	ND	0.096		mg/Kg	1	8/17/2013 3:29:20 AM	8879
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%REC	1	8/17/2013 3:29:20 AM	8879
Surr: 4-Bromofluorobenzene	88.3	70-130		%REC	1	8/17/2013 3:29:20 AM	8879
Surr: Dibromofluoromethane	98.0	70-130		%REC	1	8/17/2013 3:29:20 AM	8879
Surr: Toluene-d8	98.3	70-130		%REC	1	8/17/2013 3:29:20 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-41 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 8:25:00 AM
Lab ID: 1308625-003 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Toluene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Ethylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Methyl tert-butyl ether (MTBE)	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2,4-Trimethylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,3,5-Trimethylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2-Dichloroethane (EDC)	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2-Dibromoethane (EDB)	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Naphthalene	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 3:57:09 AM	8879
2-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Acetone	ND	0.71		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Bromobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Bromodichloromethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Bromoform	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Bromomethane	ND	0.14		mg/Kg	1	8/17/2013 3:57:09 AM	8879
2-Butanone	ND	0.47		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Carbon disulfide	ND	0.47		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Carbon tetrachloride	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Chlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Chloroethane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Chloroform	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Chloromethane	ND	0.14		mg/Kg	1	8/17/2013 3:57:09 AM	8879
2-Chlorotoluene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
4-Chlorotoluene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
cis-1,2-DCE	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
cis-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2-Dibromo-3-chloropropane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Dibromochloromethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Dibromomethane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,3-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,4-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Dichlorodifluoromethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1-Dichloroethane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1-Dichloroethene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2-Dichloropropane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,3-Dichloropropane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
2,2-Dichloropropane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-41 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 8:25:00 AM
Lab ID: 1308625-003 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
1,1-Dichloropropene	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Hexachlorobutadiene	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
2-Hexanone	ND	0.47		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Isopropylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
4-Isopropyltoluene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
4-Methyl-2-pentanone	ND	0.47		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Methylene chloride	ND	0.14		mg/Kg	1	8/17/2013 3:57:09 AM	8879
n-Butylbenzene	ND	0.14		mg/Kg	1	8/17/2013 3:57:09 AM	8879
n-Propylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
sec-Butylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Styrene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
tert-Butylbenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1,1,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1,2,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Tetrachloroethene (PCE)	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
trans-1,2-DCE	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
trans-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2,3-Trichlorobenzene	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2,4-Trichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1,1-Trichloroethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,1,2-Trichloroethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Trichloroethene (TCE)	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Trichlorofluoromethane	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
1,2,3-Trichloropropane	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Vinyl chloride	ND	0.047		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Xylenes, Total	ND	0.095		mg/Kg	1	8/17/2013 3:57:09 AM	8879
Surr: 1,2-Dichloroethane-d4	90.1	70-130		%REC	1	8/17/2013 3:57:09 AM	8879
Surr: 4-Bromofluorobenzene	88.7	70-130		%REC	1	8/17/2013 3:57:09 AM	8879
Surr: Dibromofluoromethane	97.7	70-130		%REC	1	8/17/2013 3:57:09 AM	8879
Surr: Toluene-d8	97.7	70-130		%REC	1	8/17/2013 3:57:09 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42B 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 2:35:00 PM
Lab ID: 1308625-004 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Toluene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Ethylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Methyl tert-butyl ether (MTBE)	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2,4-Trimethylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,3,5-Trimethylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2-Dichloroethane (EDC)	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2-Dibromoethane (EDB)	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Naphthalene	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1-Methylnaphthalene	ND	0.19		mg/Kg	1	8/19/2013 4:42:14 PM	8879
2-Methylnaphthalene	ND	0.19		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Acetone	ND	0.71		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Bromobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Bromodichloromethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Bromoform	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Bromomethane	ND	0.14		mg/Kg	1	8/19/2013 4:42:14 PM	8879
2-Butanone	ND	0.47		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Carbon disulfide	ND	0.47		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Carbon tetrachloride	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Chlorobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Chloroethane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Chloroform	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Chloromethane	ND	0.14		mg/Kg	1	8/19/2013 4:42:14 PM	8879
2-Chlorotoluene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
4-Chlorotoluene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
cis-1,2-DCE	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
cis-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2-Dibromo-3-chloropropane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Dibromochloromethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Dibromomethane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2-Dichlorobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,3-Dichlorobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,4-Dichlorobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Dichlorodifluoromethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1-Dichloroethane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1-Dichloroethene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2-Dichloropropane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,3-Dichloropropane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
2,2-Dichloropropane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42B 55'-57'
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 2:35:00 PM
Lab ID: 1308625-004 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
1,1-Dichloropropene	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Hexachlorobutadiene	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
2-Hexanone	ND	0.47		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Isopropylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
4-Isopropyltoluene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
4-Methyl-2-pentanone	ND	0.47		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Methylene chloride	ND	0.14		mg/Kg	1	8/19/2013 4:42:14 PM	8879
n-Butylbenzene	ND	0.14		mg/Kg	1	8/19/2013 4:42:14 PM	8879
n-Propylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
sec-Butylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Styrene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
tert-Butylbenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1,1,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1,2,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Tetrachloroethene (PCE)	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
trans-1,2-DCE	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
trans-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2,3-Trichlorobenzene	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2,4-Trichlorobenzene	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1,1-Trichloroethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,1,2-Trichloroethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Trichloroethene (TCE)	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Trichlorofluoromethane	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
1,2,3-Trichloropropane	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Vinyl chloride	ND	0.047		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Xylenes, Total	ND	0.095		mg/Kg	1	8/19/2013 4:42:14 PM	8879
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%REC	1	8/19/2013 4:42:14 PM	8879
Surr: 4-Bromofluorobenzene	93.9	70-130		%REC	1	8/19/2013 4:42:14 PM	8879
Surr: Dibromofluoromethane	94.9	70-130		%REC	1	8/19/2013 4:42:14 PM	8879
Surr: Toluene-d8	99.0	70-130		%REC	1	8/19/2013 4:42:14 PM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308625**

20-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **mb-8879**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.10								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.10								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.10								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308625**

20-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **mb-8879**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.0	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.3	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.8	70	130			
Surr: Toluene-d8	0.49		0.5000		98.3	70	130			

Sample ID **lcs-8879**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.050	1.000	0	93.8	70	130			
Toluene	0.89	0.050	1.000	0	89.5	69.9	139			
Chlorobenzene	0.84	0.050	1.000	0	84.2	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308625**

20-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **lcs-8879**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	104	69.3	131			
Trichloroethene (TCE)	0.87	0.050	1.000	0	87.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.6	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		85.9	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Sample ID **1308625-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-39 55'-57'**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361360** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.048	0.9671	0.003901	84.4	65.1	127			
Toluene	0.79	0.048	0.9671	0	81.8	54.2	148			
Chlorobenzene	0.72	0.048	0.9671	0	74.9	66.8	129			
1,1-Dichloroethene	0.90	0.048	0.9671	0.009086	92.5	44.1	148			
Trichloroethene (TCE)	0.77	0.048	0.9671	0.009018	78.6	63.2	122			
Surr: 1,2-Dichloroethane-d4	0.46		0.4836		95.6	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.4836		87.2	70	130			
Surr: Dibromofluoromethane	0.49		0.4836		102	70	130			
Surr: Toluene-d8	0.47		0.4836		97.4	70	130			

Sample ID **1308625-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **MW-39 55'-57'**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361361** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.048	0.9671	0.003901	79.5	65.1	127	6.03	20	
Toluene	0.74	0.048	0.9671	0	76.8	54.2	148	6.23	20	
Chlorobenzene	0.71	0.048	0.9671	0	73.5	66.8	129	1.87	20	
1,1-Dichloroethene	0.81	0.048	0.9671	0.009086	83.3	44.1	148	10.4	20	
Trichloroethene (TCE)	0.72	0.048	0.9671	0.009018	73.3	63.2	122	6.89	20	
Surr: 1,2-Dichloroethane-d4	0.44		0.4836		90.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.41		0.4836		84.5	70	130	0	0	
Surr: Dibromofluoromethane	0.46		0.4836		96.1	70	130	0	0	
Surr: Toluene-d8	0.46		0.4836		95.8	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308625**

20-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **mb-8906**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **8906**	RunNo: **12707**
Prep Date: **8/16/2013**	Analysis Date: **8/19/2013**	SeqNo: **362460** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.4	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.2	70	130			
Surr: Toluene-d8	0.52		0.5000		103	70	130			

Sample ID **lcs-8906**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSS**	Batch ID: **8906**	RunNo: **12707**
Prep Date: **8/16/2013**	Analysis Date: **8/19/2013**	SeqNo: **362462** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		91.9	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		95.4	70	130			
Surr: Dibromofluoromethane	0.46		0.5000		92.8	70	130			
Surr: Toluene-d8	0.50		0.5000		99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: CYP Work Order Number: 1308625 RcptNo: 1

Received by/date: 08/14/13

Logged By: **Lindsay Mangin** 8/14/2013 9:45:00 AM

Completed By: **Lindsay Mangin** 8/15/2013 7:33:06 AM

Reviewed By: IO 08/15/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes			

Chain-of-Custody Record

Client: Cypress Engineering Services Inc
ATTN: George Robinson, PE
Mailing Address: 141 Highway 6 North Ste 102
Houston, Texas 77095
Phone #: 281.797.3420
email or Fax#: george.robinson@cypressinc.us
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other ____
☐ EDD (Type) ____

Turn-Around Time: ☒ Standard ☐ Rush ____
Project Name: TWP Roswell Station 9
Project #: New Monitor Well Installation 02.2012.0037.00
Project Manager: George Robinson, PE; Stacy Boultinghouse, PE
Sampler: CM Barnhill, PE
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1308625	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8/06/13	1730	SOIL	MW-39 55'-57'	1x 4oz Jar	None	-001										X		N
8/05/13	17:55	SOIL	MW-40 60'-62'	↓	↓	-002										X		↓
8/06/13	0825	SOIL	MW-41 55'-57'			-003										X		
8/06/13	1435	SOIL	MW-42B 55'-57'	↓	↓	-004										X		

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/13/13	12:00			08/14/13	0745
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Any Questions Please Call George Robinson @ 281.797.3420

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 26, 2013

George Robinson

Cypress Engineering
7171 Highway 6 North
Suite 102
Houston, TX 770952422
TEL: (281) 797-3420
FAX (281) 859-1881

RE: TWP Roswell Station 9 OrderNo.: 1308626

Dear George Robinson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/14/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-38 65'-67'
Project: TWP Roswell Station 9
Collection Date: 8/8/2013 8:10:00 AM
Lab ID: 1308626-001 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	ND	0.033		mg/kg	1	8/20/2013 1:22:19 PM	8939
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Arsenic	ND	2.5		mg/Kg	1	8/21/2013 3:42:11 PM	8910
Barium	62	0.20		mg/Kg	2	8/21/2013 3:45:19 PM	8910
Cadmium	ND	0.10		mg/Kg	1	8/21/2013 3:42:11 PM	8910
Chromium	3.9	0.30		mg/Kg	1	8/21/2013 3:42:11 PM	8910
Lead	1.7	0.25		mg/Kg	1	8/21/2013 3:42:11 PM	8910
Selenium	ND	2.5		mg/Kg	1	8/21/2013 3:42:11 PM	8910
Silver	ND	0.25		mg/Kg	1	8/21/2013 3:42:11 PM	8910
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	11	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Toluene	45	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Ethylbenzene	8.9	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Methyl tert-butyl ether (MTBE)	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2,4-Trimethylbenzene	9.5	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,3,5-Trimethylbenzene	6.1	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2-Dichloroethane (EDC)	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2-Dibromoethane (EDB)	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Naphthalene	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1-Methylnaphthalene	ND	9.5		mg/Kg	50	8/17/2013 5:21:30 AM	8879
2-Methylnaphthalene	ND	9.5		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Acetone	ND	36		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Bromobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Bromodichloromethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Bromoform	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Bromomethane	ND	7.1		mg/Kg	50	8/17/2013 5:21:30 AM	8879
2-Butanone	ND	24		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Carbon disulfide	ND	24		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Carbon tetrachloride	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Chlorobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Chloroethane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Chloroform	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Chloromethane	ND	7.1		mg/Kg	50	8/17/2013 5:21:30 AM	8879
2-Chlorotoluene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
4-Chlorotoluene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
cis-1,2-DCE	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
cis-1,3-Dichloropropene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2-Dibromo-3-chloropropane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-38 65'-67'
Project: TWP Roswell Station 9
Collection Date: 8/8/2013 8:10:00 AM
Lab ID: 1308626-001 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Dibromochloromethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Dibromomethane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2-Dichlorobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,3-Dichlorobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,4-Dichlorobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Dichlorodifluoromethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1-Dichloroethane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1-Dichloroethene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2-Dichloropropane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,3-Dichloropropane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
2,2-Dichloropropane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1-Dichloropropene	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Hexachlorobutadiene	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
2-Hexanone	ND	24		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Isopropylbenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
4-Isopropyltoluene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
4-Methyl-2-pentanone	ND	24		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Methylene chloride	ND	7.1		mg/Kg	50	8/17/2013 5:21:30 AM	8879
n-Butylbenzene	ND	7.1		mg/Kg	50	8/17/2013 5:21:30 AM	8879
n-Propylbenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
sec-Butylbenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Styrene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
tert-Butylbenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1,1,2-Tetrachloroethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1,2,2-Tetrachloroethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Tetrachloroethene (PCE)	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
trans-1,2-DCE	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
trans-1,3-Dichloropropene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2,3-Trichlorobenzene	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2,4-Trichlorobenzene	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1,1-Trichloroethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,1,2-Trichloroethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Trichloroethene (TCE)	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Trichlorofluoromethane	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
1,2,3-Trichloropropane	ND	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Vinyl chloride	ND	2.4		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Xylenes, Total	64	4.8		mg/Kg	50	8/17/2013 5:21:30 AM	8879
Surr: 1,2-Dichloroethane-d4	97.2	70-130		%REC	50	8/17/2013 5:21:30 AM	8879
Surr: 4-Bromofluorobenzene	86.1	70-130		%REC	50	8/17/2013 5:21:30 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-38 65'-67'
Project: TWP Roswell Station 9
Collection Date: 8/8/2013 8:10:00 AM
Lab ID: 1308626-001 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Surr: Dibromofluoromethane	98.2	70-130		%REC	50	8/17/2013 5:21:30 AM	8879
Surr: Toluene-d8	89.6	70-130		%REC	50	8/17/2013 5:21:30 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-40 60'-62'
Project: TWP Roswell Station 9
Collection Date: 8/8/2013 4:55:00 PM
Lab ID: 1308626-002 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	ND	0.033		mg/kg	1	8/20/2013 1:27:39 PM	8939
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Arsenic	ND	5.0		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Barium	71	0.20		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Cadmium	ND	0.20		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Chromium	6.9	0.60		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Lead	2.9	0.50		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Selenium	ND	5.0		mg/Kg	2	8/21/2013 4:00:30 PM	8910
Silver	ND	0.50		mg/Kg	2	8/21/2013 4:00:30 PM	8910
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	1.1	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Toluene	30	4.7		mg/Kg	100	8/19/2013 4:13:54 PM	8879
Ethylbenzene	3.9	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Methyl tert-butyl ether (MTBE)	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2,4-Trimethylbenzene	8.0	4.7		mg/Kg	100	8/19/2013 4:13:54 PM	8879
1,3,5-Trimethylbenzene	3.5	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2-Dichloroethane (EDC)	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2-Dibromoethane (EDB)	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Naphthalene	0.36	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1-Methylnaphthalene	0.56	0.19		mg/Kg	1	8/17/2013 4:24:57 AM	8879
2-Methylnaphthalene	0.97	0.19		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Acetone	ND	0.71		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Bromobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Bromodichloromethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Bromoform	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Bromomethane	ND	0.14		mg/Kg	1	8/17/2013 4:24:57 AM	8879
2-Butanone	ND	0.47		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Carbon disulfide	ND	0.47		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Carbon tetrachloride	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Chlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Chloroethane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Chloroform	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Chloromethane	ND	0.14		mg/Kg	1	8/17/2013 4:24:57 AM	8879
2-Chlorotoluene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
4-Chlorotoluene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
cis-1,2-DCE	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
cis-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2-Dibromo-3-chloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-40 60'-62'
Project: TWP Roswell Station 9
Collection Date: 8/8/2013 4:55:00 PM
Lab ID: 1308626-002 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Dibromochloromethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Dibromomethane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,3-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,4-Dichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Dichlorodifluoromethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1-Dichloroethane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1-Dichloroethene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2-Dichloropropane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,3-Dichloropropane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
2,2-Dichloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1-Dichloropropene	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Hexachlorobutadiene	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
2-Hexanone	ND	0.47		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Isopropylbenzene	0.69	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
4-Isopropyltoluene	0.28	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
4-Methyl-2-pentanone	ND	0.47		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Methylene chloride	ND	0.14		mg/Kg	1	8/17/2013 4:24:57 AM	8879
n-Butylbenzene	0.46	0.14		mg/Kg	1	8/17/2013 4:24:57 AM	8879
n-Propylbenzene	1.1	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
sec-Butylbenzene	0.31	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Styrene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
tert-Butylbenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1,1,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1,2,2-Tetrachloroethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Tetrachloroethene (PCE)	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
trans-1,2-DCE	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
trans-1,3-Dichloropropene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2,3-Trichlorobenzene	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2,4-Trichlorobenzene	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1,1-Trichloroethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,1,2-Trichloroethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Trichloroethene (TCE)	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Trichlorofluoromethane	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
1,2,3-Trichloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Vinyl chloride	ND	0.047		mg/Kg	1	8/17/2013 4:24:57 AM	8879
Xylenes, Total	45	9.5		mg/Kg	100	8/19/2013 4:13:54 PM	8879
Surr: 1,2-Dichloroethane-d4	58.9	70-130	S	%REC	1	8/17/2013 4:24:57 AM	8879
Surr: 4-Bromofluorobenzene	105	70-130		%REC	1	8/17/2013 4:24:57 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Project: TWP Roswell Station 9
Lab ID: 1308626-002 **Matrix:** SOIL

Client Sample ID: MPE-40 60'-62'
Collection Date: 8/8/2013 4:55:00 PM
Received Date: 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Surr: Dibromofluoromethane	69.9	70-130	S	%REC	1	8/17/2013 4:24:57 AM	8879
Surr: Toluene-d8	93.0	70-130		%REC	1	8/17/2013 4:24:57 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42A 55-57
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 10:45:00 AM
Lab ID: 1308626-003
Matrix: SOIL
Received Date: 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
Benzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Toluene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Ethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Naphthalene	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 4:53:17 AM	8879
2-Methylnaphthalene	ND	0.19		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Acetone	ND	0.71		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Bromobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Bromodichloromethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Bromoform	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Bromomethane	ND	0.14		mg/Kg	1	8/17/2013 4:53:17 AM	8879
2-Butanone	ND	0.48		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Carbon disulfide	ND	0.48		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Carbon tetrachloride	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Chlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Chloroethane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Chloroform	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Chloromethane	ND	0.14		mg/Kg	1	8/17/2013 4:53:17 AM	8879
2-Chlorotoluene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
4-Chlorotoluene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
cis-1,2-DCE	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2-Dibromo-3-chloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Dibromochloromethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Dibromomethane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1-Dichloroethane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1-Dichloroethene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2-Dichloropropane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,3-Dichloropropane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
2,2-Dichloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MW-42A 55-57
Project: TWP Roswell Station 9
Collection Date: 8/6/2013 10:45:00 AM
Lab ID: 1308626-003 **Matrix:** SOIL **Received Date:** 8/14/2013 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMP**	
1,1-Dichloropropene	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Hexachlorobutadiene	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
2-Hexanone	ND	0.48		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Isopropylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
4-Isopropyltoluene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Methylene chloride	ND	0.14		mg/Kg	1	8/17/2013 4:53:17 AM	8879
n-Butylbenzene	ND	0.14		mg/Kg	1	8/17/2013 4:53:17 AM	8879
n-Propylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
sec-Butylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Styrene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
tert-Butylbenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
trans-1,2-DCE	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2,3-Trichlorobenzene	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Trichlorofluoromethane	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
1,2,3-Trichloropropane	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Vinyl chloride	ND	0.048		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Xylenes, Total	ND	0.095		mg/Kg	1	8/17/2013 4:53:17 AM	8879
Surr: 1,2-Dichloroethane-d4	93.2	70-130		%REC	1	8/17/2013 4:53:17 AM	8879
Surr: 4-Bromofluorobenzene	86.8	70-130		%REC	1	8/17/2013 4:53:17 AM	8879
Surr: Dibromofluoromethane	101	70-130		%REC	1	8/17/2013 4:53:17 AM	8879
Surr: Toluene-d8	95.0	70-130		%REC	1	8/17/2013 4:53:17 AM	8879

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308626**

26-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **mb-8879**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.10								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.10								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.10								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308626**

26-Aug-13

Client: Cypress Engineering
Project: TWP Roswell Station 9

Sample ID **mb-8879**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361357** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.0	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.3	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.8	70	130			
Surr: Toluene-d8	0.49		0.5000		98.3	70	130			

Sample ID **lcs-8879**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSS**	Batch ID: **8879**	RunNo: **12689**
Prep Date: **8/15/2013**	Analysis Date: **8/17/2013**	SeqNo: **361358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.050	1.000	0	93.8	70	130			
Toluene	0.89	0.050	1.000	0	89.5	69.9	139			
Chlorobenzene	0.84	0.050	1.000	0	84.2	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308626**

26-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID	**lcs-8879**	SampType:	**LCS**	TestCode:	**EPA Method 8260B: VOLATILES**					
Client ID:	**LCSS**	Batch ID:	**8879**	RunNo:	**12689**					
Prep Date:	**8/15/2013**	Analysis Date:	**8/17/2013**	SeqNo:	**361358**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	1.0	0.050	1.000	0	104	69.3	131			
Trichloroethene (TCE)	0.87	0.050	1.000	0	87.3	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.6	70	130			
Surr: 4-Bromofluorobenzene	0.43		0.5000		85.9	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308626**

26-Aug-13

Client: Cypress Engineering
Project: TWP Roswell Station 9

Sample ID	**MB-8939**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**8939**	RunNo:	**12748**					
Prep Date:	**8/20/2013**	Analysis Date:	**8/20/2013**	SeqNo:	**363107**	Units:	**mg/kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-8939**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**8939**	RunNo:	**12748**					
Prep Date:	**8/20/2013**	Analysis Date:	**8/20/2013**	SeqNo:	**363108**	Units:	**mg/kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	93.5	80	120			

Sample ID	**1308626-001AMS**	SampType:	**ms**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**MPE-38 65'-67'**	Batch ID:	**8939**	RunNo:	**12748**					
Prep Date:	**8/20/2013**	Analysis Date:	**8/20/2013**	SeqNo:	**363110**	Units:	**mg/kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1657	0.004432	92.6	75	125			

Sample ID	**1308626-001AMSD**	SampType:	**msd**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**MPE-38 65'-67'**	Batch ID:	**8939**	RunNo:	**12748**					
Prep Date:	**8/20/2013**	Analysis Date:	**8/20/2013**	SeqNo:	**363111**	Units:	**mg/kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1603	0.004432	95.3	75	125	0.379	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308626**

26-Aug-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID	**MB-8910**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**PBS**	Batch ID:	**8910**	RunNo:	**12731**					
Prep Date:	**8/19/2013**	Analysis Date:	**8/19/2013**	SeqNo:	**362428**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID	**LCS-8910**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**					
Client ID:	**LCSS**	Batch ID:	**8910**	RunNo:	**12731**					
Prep Date:	**8/19/2013**	Analysis Date:	**8/19/2013**	SeqNo:	**362429**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	100	80	120			
Barium	25	0.10	25.00	0	99.8	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	99.5	80	120			
Lead	24	0.25	25.00	0	96.5	80	120			
Selenium	24	2.5	25.00	0	96.2	80	120			
Silver	4.6	0.25	5.000	0	93.0	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: CYP | Work Order Number: 1308626 | RcptNo: 1

Received by/date: 08/14/13
Logged By: Lindsay Mangin 8/14/2013 9:45:00 AM
Completed By: Lindsay Mangin 8/15/2013 7:37:23 AM
Reviewed By: IO 08/15/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.6	Good	Yes			

Chain-of-Custody Record

Client: Cypress Engineering Services Inc
7171 Highway 6 North, Ste 102
Mailing Address: Houston, Texas 77095
ATTN: George Robinson, PE
Phone #: 281. 797. 3420
email or Fax#: george.robinson@cypressinc.us
QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)
Accreditation ☐ NELAP ☐ Other ____
☐ EDD (Type) ____

Turn-Around Time: ☑ Standard ☐ Rush ____
Project Name: TWP Roswell Station 9
Project #: 02.20120037.00
Project Manager: Stacy Boutinghouse, PE / George Robinson, PE
Sampler: CM Barnhill, PE
On Ice: ☑ Yes ☐ No
Sample Temperature: 3.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1308626	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
06/06/13	0810	Soil	MPE-38 65'-67'	1 x 4oz G/Jar	None	-001							X			X		
06/06/13	1655	Soil	MPE-40 60'-62'	1 x 4oz G/Jar	None	-002							X			X		
06/06/13	1045	Soil	MW-42A 55-57	1 x 4oz G Jar	None	-003										X		

Date	Time	Relinquished by:	Received by:	Date	Time
6/13/13	12:00				
				06/14/13	0945

Remarks: Any Questions Please Call George Robinson @ 281. 797. 3420

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 04, 2013

George Robinson

Cypress Engineering
7171 Highway 6 North
Suite 102
Houston, TX 770952422
TEL: (281) 797-3420
FAX (281) 859-1881

RE: TWP Roswell Station 9 OrderNo.: 1308C34

Dear George Robinson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/28/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Project: TWP Roswell Station 9
Lab ID: 1308C34-001 **Matrix:** SOIL

Client Sample ID: Comp Soil MW-39 - MW-42 S c
Collection Date: 8/27/2013 10:40:00 AM
Received Date: 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 6:13:23 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 6:13:23 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 6:13:23 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 6:13:23 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 6:13:23 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 6:13:23 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 6:13:23 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 6:13:23 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 6:13:23 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 6:13:23 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 6:13:23 PM	9096
Surr: 1,2-Dichloroethane-d4	90.6	70-130		%REC	10	8/29/2013 6:13:23 PM	9096
Surr: 4-Bromofluorobenzene	94.0	70-130		%REC	10	8/29/2013 6:13:23 PM	9096
Surr: Dibromofluoromethane	94.9	70-130		%REC	10	8/29/2013 6:13:23 PM	9096
Surr: Toluene-d8	93.0	70-130		%REC	10	8/29/2013 6:13:23 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-39 Composite 50'-75' BGS
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 9:45:00 AM
Lab ID: 1308C34-002 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	15	9.9		mg/Kg	1	8/30/2013 1:10:41 PM	9101
Surr: DNOP	86.9	63-147		%REC	1	8/30/2013 1:10:41 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	320	50		mg/Kg	10	8/30/2013 11:27:18 AM	9096
Surr: BFB	145	80-120	S	%REC	10	8/30/2013 11:27:18 AM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.50		mg/Kg	10	8/30/2013 11:27:18 AM	9096
Toluene	ND	0.50		mg/Kg	10	8/30/2013 11:27:18 AM	9096
Ethylbenzene	ND	0.50		mg/Kg	10	8/30/2013 11:27:18 AM	9096
Xylenes, Total	2.6	1.0		mg/Kg	10	8/30/2013 11:27:18 AM	9096
Surr: 4-Bromofluorobenzene	102	80-120		%REC	10	8/30/2013 11:27:18 AM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 11:00:11 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 11:00:11 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 11:00:11 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 11:00:11 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 11:00:11 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 11:00:11 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 11:00:11 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 11:00:11 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 11:00:11 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 11:00:11 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 11:00:11 PM	9096
Surr: 1,2-Dichloroethane-d4	95.6	70-130		%REC	10	8/29/2013 11:00:11 PM	9096
Surr: 4-Bromofluorobenzene	92.5	70-130		%REC	10	8/29/2013 11:00:11 PM	9096
Surr: Dibromofluoromethane	94.8	70-130		%REC	10	8/29/2013 11:00:11 PM	9096
Surr: Toluene-d8	93.8	70-130		%REC	10	8/29/2013 11:00:11 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-38 Composite 50'-75' BGS
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 9:30:00 AM
Lab ID: 1308C34-003 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2013 1:41:47 PM	9101
Surr: DNOP	88.8	63-147		%REC	1	8/30/2013 1:41:47 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	16	5.0		mg/Kg	1	9/3/2013 1:50:29 PM	9096
Surr: BFB	147	80-120	S	%REC	1	9/3/2013 1:50:29 PM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.050		mg/Kg	1	9/3/2013 1:50:29 PM	9096
Toluene	ND	0.050		mg/Kg	1	9/3/2013 1:50:29 PM	9096
Ethylbenzene	ND	0.050		mg/Kg	1	9/3/2013 1:50:29 PM	9096
Xylenes, Total	ND	0.10		mg/Kg	1	9/3/2013 1:50:29 PM	9096
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	9/3/2013 1:50:29 PM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 10:31:29 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 10:31:29 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 10:31:29 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 10:31:29 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 10:31:29 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 10:31:29 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 10:31:29 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 10:31:29 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 10:31:29 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 10:31:29 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 10:31:29 PM	9096
Surr: 1,2-Dichloroethane-d4	92.4	70-130		%REC	10	8/29/2013 10:31:29 PM	9096
Surr: 4-Bromofluorobenzene	94.2	70-130		%REC	10	8/29/2013 10:31:29 PM	9096
Surr: Dibromofluoromethane	94.7	70-130		%REC	10	8/29/2013 10:31:29 PM	9096
Surr: Toluene-d8	94.0	70-130		%REC	10	8/29/2013 10:31:29 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE 40 Composite 01-50' BGS
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 9:00:00 AM
Lab ID: 1308C34-004 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	15000	990		mg/Kg	100	9/3/2013 12:44:39 PM	9101
Surr: DNOP	0	63-147	S	%REC	100	9/3/2013 12:44:39 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	190	100		mg/Kg	20	8/30/2013 4:42:38 PM	9096
Surr: BFB	152	80-120	S	%REC	20	8/30/2013 4:42:38 PM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.50		mg/Kg	20	8/30/2013 4:42:38 PM	9096
Toluene	ND	1.0		mg/Kg	20	8/30/2013 4:42:38 PM	9096
Ethylbenzene	1.3	1.0		mg/Kg	20	8/30/2013 4:42:38 PM	9096
Xylenes, Total	4.3	2.0		mg/Kg	20	8/30/2013 4:42:38 PM	9096
Surr: 4-Bromofluorobenzene	106	80-120		%REC	20	8/30/2013 4:42:38 PM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 11:56:51 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 11:56:51 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 11:56:51 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 11:56:51 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 11:56:51 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 11:56:51 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 11:56:51 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 11:56:51 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 11:56:51 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 11:56:51 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 11:56:51 PM	9096
Surr: 1,2-Dichloroethane-d4	92.1	70-130		%REC	10	8/29/2013 11:56:51 PM	9096
Surr: 4-Bromofluorobenzene	117	70-130		%REC	10	8/29/2013 11:56:51 PM	9096
Surr: Dibromofluoromethane	95.4	70-130		%REC	10	8/29/2013 11:56:51 PM	9096
Surr: Toluene-d8	91.3	70-130		%REC	10	8/29/2013 11:56:51 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-40 Composite 50-75' BGS
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 10:10:00 AM
Lab ID: 1308C34-005 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2013 3:15:33 PM	9101
Surr: DNOP	96.6	63-147		%REC	1	8/30/2013 3:15:33 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	150	25		mg/Kg	5	9/3/2013 3:45:14 PM	9096
Surr: BFB	152	80-120	S	%REC	5	9/3/2013 3:45:14 PM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.25		mg/Kg	5	9/3/2013 3:45:14 PM	9096
Toluene	ND	0.25		mg/Kg	5	9/3/2013 3:45:14 PM	9096
Ethylbenzene	ND	0.25		mg/Kg	5	9/3/2013 3:45:14 PM	9096
Xylenes, Total	0.82	0.50		mg/Kg	5	9/3/2013 3:45:14 PM	9096
Surr: 4-Bromofluorobenzene	108	80-120		%REC	5	9/3/2013 3:45:14 PM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/30/2013 12:53:32 AM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/30/2013 12:53:32 AM	9096
2-Butanone	ND	200		ppm	10	8/30/2013 12:53:32 AM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/30/2013 12:53:32 AM	9096
Chlorobenzene	ND	100		ppm	10	8/30/2013 12:53:32 AM	9096
Chloroform	ND	6.0		ppm	10	8/30/2013 12:53:32 AM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/30/2013 12:53:32 AM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/30/2013 12:53:32 AM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/30/2013 12:53:32 AM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/30/2013 12:53:32 AM	9096
Vinyl chloride	ND	0.20		ppm	10	8/30/2013 12:53:32 AM	9096
Surr: 1,2-Dichloroethane-d4	93.5	70-130		%REC	10	8/30/2013 12:53:32 AM	9096
Surr: 4-Bromofluorobenzene	87.9	70-130		%REC	10	8/30/2013 12:53:32 AM	9096
Surr: Dibromofluoromethane	96.7	70-130		%REC	10	8/30/2013 12:53:32 AM	9096
Surr: Toluene-d8	94.3	70-130		%REC	10	8/30/2013 12:53:32 AM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE-41 Composite 50'-75' BGS
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 9:25:00 AM
Lab ID: 1308C34-006 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	80	10		mg/Kg	1	8/30/2013 3:46:44 PM	9101
Surr: DNOP	94.9	63-147		%REC	1	8/30/2013 3:46:44 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	15	5.0		mg/Kg	1	8/30/2013 6:08:42 PM	9096
Surr: BFB	163	80-120	S	%REC	1	8/30/2013 6:08:42 PM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	8/30/2013 6:08:42 PM	9096
Toluene	ND	0.050		mg/Kg	1	8/30/2013 6:08:42 PM	9096
Ethylbenzene	ND	0.050		mg/Kg	1	8/30/2013 6:08:42 PM	9096
Xylenes, Total	ND	0.10		mg/Kg	1	8/30/2013 6:08:42 PM	9096
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	8/30/2013 6:08:42 PM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 8:07:02 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 8:07:02 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 8:07:02 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 8:07:02 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 8:07:02 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 8:07:02 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 8:07:02 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 8:07:02 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 8:07:02 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 8:07:02 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 8:07:02 PM	9096
Surr: 1,2-Dichloroethane-d4	90.5	70-130		%REC	10	8/29/2013 8:07:02 PM	9096
Surr: 4-Bromofluorobenzene	90.5	70-130		%REC	10	8/29/2013 8:07:02 PM	9096
Surr: Dibromofluoromethane	94.5	70-130		%REC	10	8/29/2013 8:07:02 PM	9096
Surr: Toluene-d8	92.1	70-130		%REC	10	8/29/2013 8:07:02 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Cypress Engineering
Client Sample ID: MPE Wells 38, 39, 40, 41 Comp
Project: TWP Roswell Station 9
Collection Date: 8/27/2013 9:15:00 AM
Lab ID: 1308C34-007 **Matrix:** SOIL **Received Date:** 8/28/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/30/2013 4:18:06 PM	9101
Surr: DNOP	66.3	63-147		%REC	1	8/30/2013 4:18:06 PM	9101
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/30/2013 6:37:25 PM	9096
Surr: BFB	94.1	80-120		%REC	1	8/30/2013 6:37:25 PM	9096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	8/30/2013 6:37:25 PM	9096
Toluene	ND	0.050		mg/Kg	1	8/30/2013 6:37:25 PM	9096
Ethylbenzene	ND	0.050		mg/Kg	1	8/30/2013 6:37:25 PM	9096
Xylenes, Total	ND	0.10		mg/Kg	1	8/30/2013 6:37:25 PM	9096
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	8/30/2013 6:37:25 PM	9096
EPA METHOD 8260B: TCLP COMPOUNDS						Analyst: **JMP**	
Benzene	ND	0.50		ppm	10	8/29/2013 8:35:25 PM	9096
1,2-Dichloroethane (EDC)	ND	0.50		ppm	10	8/29/2013 8:35:25 PM	9096
2-Butanone	ND	200		ppm	10	8/29/2013 8:35:25 PM	9096
Carbon tetrachloride	ND	0.50		ppm	10	8/29/2013 8:35:25 PM	9096
Chlorobenzene	ND	100		ppm	10	8/29/2013 8:35:25 PM	9096
Chloroform	ND	6.0		ppm	10	8/29/2013 8:35:25 PM	9096
1,4-Dichlorobenzene	ND	7.5		ppm	10	8/29/2013 8:35:25 PM	9096
1,1-Dichloroethene	ND	0.70		ppm	10	8/29/2013 8:35:25 PM	9096
Tetrachloroethene (PCE)	ND	0.70		ppm	10	8/29/2013 8:35:25 PM	9096
Trichloroethene (TCE)	ND	0.50		ppm	10	8/29/2013 8:35:25 PM	9096
Vinyl chloride	ND	0.20		ppm	10	8/29/2013 8:35:25 PM	9096
Surr: 1,2-Dichloroethane-d4	91.0	70-130		%REC	10	8/29/2013 8:35:25 PM	9096
Surr: 4-Bromofluorobenzene	95.6	70-130		%REC	10	8/29/2013 8:35:25 PM	9096
Surr: Dibromofluoromethane	95.7	70-130		%REC	10	8/29/2013 8:35:25 PM	9096
Surr: Toluene-d8	94.8	70-130		%REC	10	8/29/2013 8:35:25 PM	9096

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308C34**

04-Sep-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID	**MB-9101**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**9101**		RunNo:	**12963**				
Prep Date:	**8/29/2013**	Analysis Date:	**8/29/2013**		SeqNo:	**370092**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.9		10.00		78.5	63	147			

Sample ID	**LCS-9101**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**9101**		RunNo:	**12963**				
Prep Date:	**8/29/2013**	Analysis Date:	**8/29/2013**		SeqNo:	**370093**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	119	77.1	128			
Surr: DNOP	4.1		5.000		82.1	63	147			

Sample ID	**1308C34-002AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**MPE-39 Composite**	Batch ID:	**9101**		RunNo:	**12997**				
Prep Date:	**8/29/2013**	Analysis Date:	**8/30/2013**		SeqNo:	**370991**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	49.75	15.25	77.1	61.3	138	7.90	20	
Surr: DNOP	4.5		4.975		91.0	63	147	0	0	

Sample ID	**1308C34-002AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Diesel Range Organics**				
Client ID:	**MPE-39 Composite**	Batch ID:	**9101**		RunNo:	**12997**				
Prep Date:	**8/29/2013**	Analysis Date:	**8/30/2013**		SeqNo:	**370995**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.9	49.70	15.25	69.0	61.3	138			
Surr: DNOP	4.2		4.970		85.2	63	147			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308C34**

04-Sep-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID	**MB-9096**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**9096**	RunNo:	**12996**					
Prep Date:	**8/28/2013**	Analysis Date:	**8/30/2013**	SeqNo:	**371539**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.6	80	120			

Sample ID	**LCS-9096**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**9096**	RunNo:	**12996**					
Prep Date:	**8/28/2013**	Analysis Date:	**8/30/2013**	SeqNo:	**371540**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	74.5	126			
Surr: BFB	1000		1000		102	80	120			

Sample ID	**MB-9117**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**9117**	RunNo:	**13041**					
Prep Date:	**8/30/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372358**	Units:	**%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	920		1000		91.9	80	120			

Sample ID	**LCS-9117**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**9117**	RunNo:	**13041**					
Prep Date:	**8/30/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372359**	Units:	**%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		100	80	120			

Sample ID	**1308C34-003AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**MPE-38 Composite**	Batch ID:	**9096**	RunNo:	**13041**					
Prep Date:	**8/28/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372364**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	37	5.0	24.98	15.88	84.0	76	156			
Surr: BFB	1500		999.0		151	80	120			S

Sample ID	**1308C34-003AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**MPE-38 Composite**	Batch ID:	**9096**	RunNo:	**13041**					
Prep Date:	**8/28/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372365**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	38	5.0	24.98	15.88	88.7	76	156	3.09	17.7	
Surr: BFB	1600		999.0		158	80	120	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308C34**

04-Sep-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID	**MB-9096**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**9096**	RunNo:	**12996**					
Prep Date:	**8/28/2013**	Analysis Date:	**8/30/2013**	SeqNo:	**371602**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID	**LCS-9096**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**9096**	RunNo:	**12996**					
Prep Date:	**8/28/2013**	Analysis Date:	**8/30/2013**	SeqNo:	**371603**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.050	1.000	0	98.1	80	120			
Toluene	0.98	0.050	1.000	0	98.2	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.7	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID	**MB-9117**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**9117**	RunNo:	**13041**					
Prep Date:	**8/30/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372398**	Units:	**%REC**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID	**LCS-9117**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**9117**	RunNo:	**13041**					
Prep Date:	**8/30/2013**	Analysis Date:	**9/3/2013**	SeqNo:	**372399**	Units:	**%REC**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308C34**

04-Sep-13

Client: Cypress Engineering
Project: TWP Roswell Station 9

Sample ID **mb-9096**	SampType: **MBLK**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **PBS**	Batch ID: **9096**	RunNo: **12983**
Prep Date: **8/28/2013**	Analysis Date: **8/29/2013**	SeqNo: **370513** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
2-Butanone	ND	20								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	10								
Chloroform	ND	0.60								
1,4-Dichlorobenzene	ND	0.75								
1,1-Dichloroethene	ND	0.070								
Tetrachloroethene (PCE)	ND	0.070								
Trichloroethene (TCE)	ND	0.050								
Vinyl chloride	ND	0.020								
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.6	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.1	70	130			
Surr: Toluene-d8	0.49		0.5000		98.2	70	130			

Sample ID **LCS-9096**	SampType: **LCS**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **LCSS**	Batch ID: **9096**	RunNo: **12983**
Prep Date: **8/28/2013**	Analysis Date: **8/29/2013**	SeqNo: **370514** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	104	70	130			
Chlorobenzene	0.98	0.50	1.000	0	97.8	70	130			
1,1-Dichloroethene	1.3	0.070	1.000	0	133	69.3	131			S
Trichloroethene (TCE)	1.0	0.050	1.000	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		94.0	70	130			
Surr: 4-Bromofluorobenzene	0.45		0.5000		90.5	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		96.7	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

Sample ID **1308c34-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **Comp Soil MW-39 -**	Batch ID: **9096**	RunNo: **12983**
Prep Date: **8/28/2013**	Analysis Date: **8/29/2013**	SeqNo: **370516** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.50	1.000	0	109	65.1	127			
Chlorobenzene	0.88	0.10	1.000	0	88.0	66.8	129			
1,1-Dichloroethene	1.3	0.70	1.000	0.1019	120	44.1	148			
Trichloroethene (TCE)	1.1	0.50	1.000	0.1053	102	63.2	122			
Surr: 1,2-Dichloroethane-d4	4.7		5.000		94.4	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1308C34**

04-Sep-13

Client: Cypress Engineering

Project: TWP Roswell Station 9

Sample ID **1308c34-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **Comp Soil MW-39 -**	Batch ID: **9096**	RunNo: **12983**
Prep Date: **8/28/2013**	Analysis Date: **8/29/2013**	SeqNo: **370516** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	4.5		5.000		90.8	70	130			
Surr: Dibromofluoromethane	4.9		5.000		97.2	70	130			
Surr: Toluene-d8	4.6		5.000		92.9	70	130			

Sample ID **1308c34-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: TCLP Compounds**
Client ID: **Comp Soil MW-39 -**	Batch ID: **9096**	RunNo: **12983**
Prep Date: **8/28/2013**	Analysis Date: **8/29/2013**	SeqNo: **370517** Units: **ppm**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.50	1.000	0	105	65.1	127	3.61	20	
Chlorobenzene	0.85	0.10	1.000	0	85.1	66.8	129	3.39	20	
1,1-Dichloroethene	1.2	0.70	1.000	0.1019	112	44.1	148	6.21	20	
Trichloroethene (TCE)	1.1	0.50	1.000	0.1053	94.9	63.2	122	6.44	20	
Surr: 1,2-Dichloroethane-d4	4.6		5.000		92.3	70	130	0	0	
Surr: 4-Bromofluorobenzene	4.6		5.000		92.9	70	130	0	0	
Surr: Dibromofluoromethane	4.8		5.000		96.0	70	130	0	0	
Surr: Toluene-d8	4.8		5.000		95.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: CYP | Work Order Number: 1308C34 | RcptNo: 1

Received by/date: LM 08/28/13

Logged By: **Michelle Garcia** 8/28/2013 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 8/28/2013 11:41:15 AM Michelle Garcia

Reviewed By: 08/28/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	UPS		

Log In

4. Was an attempt made to cool the samples?	Yes ✔	No	NA
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ✔	No	NA
6. Sample(s) in proper container(s)?	Yes ✔	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes ✔	No	
9. Was preservative added to bottles?	Yes	No ✔	NA
10. VOA vials have zero headspace?	Yes	No	No VOA Vials ✔
11. Were any sample containers received broken?	Yes	No ✔	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes | No | NA ✔

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail | Phone | Fax | In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			

Chain-of-Custody Record

Client: Cypress Engineering Services Inc
ATTN: Georg. Robinson PE
Mailing Address: 11777 Highway 6 North Ste 102
Houston, Texas 77095
Phone #: 281.797.3420
email or Fax#: george.robinsone@cypressinc.us
QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)
Accreditation: ☐ NELAP ☐ Other ____
☐ EDD (Type) ____

Turn-Around Time: ☒ Standard ☐ Rush ____
Project Name: Twp Roswell Station 9
Project #: New Monitor + MPE well Installation 2013
02.2012.0037.00
Project Manager: George Robinson, PE
Stacy Boultinghouse, PG ETP
Sampler: CM Barnhill, PG
On Ice: ☒ Yes ☐ No
Sample Temperature: 4.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1308C34	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	TCLP VOC's	BTEX 8021B			Air Bubbles (Y or N)
8/27/13	10:40	Soil	Composite Soil Sample MW-39 thru MW-42	2x4oz G/Jar	None	-001												X				
			Soil Cuttings 0'-70' BGS																			
8/27/13	0945	Soil	MPE-39 Composite 50'-75' BGS	2x4oz G/Jar	None	-002			X									X	X			
8/27/13	0930	Soil	MPE-38 Composite 50'-75' BGS	2x4oz G/Jar	None	-003			X									X	X			
8/27/13	0900	Soil	MPE 40 Composite 0'-50' BGS	2x4oz G/Jar	None	-004			X									X	X			
8/27/13	1010	Soil	MPE 40 Composite 50'-75' BGS	2x4oz G/Jar	None	-005			X									X	X			
8/27/13	0925	Soil	MPE-41 Composite 50'-75' BGS	2x4oz G/Jar	None	-006			X									X	X			
8/27/13	0915	Soil	MPE wells 38,39,40,41 Composite 0'-50' BGS	2x4oz G/Jar	None	-007			X									X	X			

Date	Time	Relinquished by:	Received by:	Date	Time
8/27/13	1500			08/28/13	1000
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Any Questions Please Call George.Robinsone 281.797.3420

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.