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ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

FED 2E#1 / 2012

June 18, 2013

Return Receipt Requested
7012 3460 0001 7236 2312

Mr. Glenn von Gonten
New Mexico Energy, Minerals & Natural Resources
Department - Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**Re: Enterprise Field Services, LLC - Federal 2E#1 Release Site
Supplemental Environmental Site Investigation
SW¼ NE¼, Section 2, T27N, R12W
San Juan County, New Mexico**

Dear Mr. Von Gonten:

Enterprise Field Services, LLC (Enterprise) is submitting the enclosed report entitled: *Supplemental Environmental Site Investigation*, dated May 28, 2013. This report documents the results of a soil and groundwater investigation conducted at the March 15, 2012 natural gas condensate release site referenced above. The release occurred on an Enterprise 4-inch diameter gathering line from the Energen Resources Corporation Federal 2E#1 gas well, and is located within the Navajo Agricultural Products Inc. (NAPI) Field 409A.

The Supplemental Environmental Site Investigation (SESI) was performed by Enterprise during April 2013, and supplements previous site investigations performed at the release site. During the SESI, a total of eleven (11) soil borings were installed to define the extent of affected soil and groundwater at the release site. Eight (8) soil borings were converted to permanent monitor wells, and two (2) soil borings were converted to shallow piezometers. Although no soil impacts were identified in excess of applicable New Mexico Oil Conservation Division (OCD) *Remediation Action Levels*, groundwater impacts were noted at three monitoring locations at concentrations exceeding New Mexico Water Quality Control Commission (WQCC) standards.

Delineation of the full extent of groundwater impacts could not be completed due to the NAPI crop planting schedule in Field 409A. Enterprise will complete delineation of the full extent of affected groundwater at the release site as soon as the harvest season has been completed, and site access is available. Remedial actions for affected groundwater at the release site will be determined when this delineation is completed.

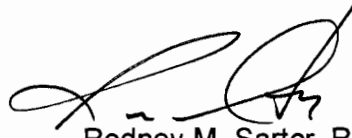
Enterprise will perform quarterly groundwater monitoring events at the release site, and will gauge the shallow piezometers (installed to monitor for potential water accumulation in the crop root zone) monthly. It is anticipated that delineation of affected groundwater at the release site will be completed in late 2013, and remedial actions will be proposed at this time.

If you have any questions concerning the enclosed report or recommendations, please do not hesitate to contact me at (713) 381-2286, or via email at: drsmith@eprod.com.

Sincerely,



David R. Smith, P.G.
Sr. Environmental Scientist



Rodney M. Sartor, REM
Sr. Manager, Environmental

/dep

Enclosure – *Federal 2E#1 Release Site- Supplemental Environmental Site Investigation*

cc: Brandon Powell, New Mexico Oil Conservation Division, Aztec, NM
Tsosie Lewis, Navajo Agricultural Products Inc., Farmington, NM
Steve Austin, Navajo EPA, Shiprock, NM

ec: Chris Mitchell – Southwest Geoscience, San Antonio, TX
Kyle Summers – Southwest Geoscience, Aztec, NM

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**SUPPLEMENTAL ENVIRONMENTAL SITE
INVESTIGATION**

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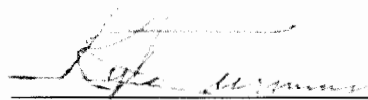
Federal 2E #1 Pipeline Release
SW ¼ NE ¼, Section 2, Township 27N, Range 12W
San Juan County, New Mexico

May 28, 2013
SWG Project No. 0413G002

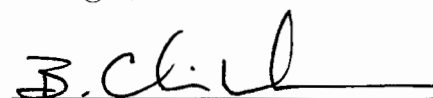
Prepared for:

Enterprise Field Services, LLC
P. O. Box 4324
Houston, Texas 77210-4324
Attention: Mr. David R. Smith, P.G.

Prepared by:



Kyle Summers, C.P.G.
Senior Geologist/
Manager, Four Corners Office



B. Chris Mitchell, P.G.
Principal Geoscientist

Southwest
GEOLOGICAL CONSULTANTS
606 S. Rio Grande Avenue
Unit A, Downstairs West
Aztec, NM 87410
Ph: (505) 334-5200
Fax: (505) 334-5204

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SUPPLEMENTAL ENVIRONMENTAL SITE INVESTIGATION

Federal 2E #1 Pipeline Release

SW ¼ NE ¼, Section 2, Township 27N, Range 12W
San Juan County, Navajo Nation, New Mexico

SWG PROJECT NO. 0413G002

1.0 EXECUTIVE SUMMARY

The Federal 2E #1 pipeline release site is located in the Navajo Agricultural Products Industry's (NAPI) Field 409A, off County Road (CR) 7010, in Section 2, Township 27N, Range 12W San Juan County, Navajo Nation, New Mexico, referred to hereinafter as the "Site" or "subject Site". The Site is an agricultural field irrigated by pivot irrigation. A 4-inch diameter Enterprise Field Services, LLC (Enterprise) natural gas pipeline transects the NAPI field from southwest to northeast, where it ties into the Federal 2E #1 gas well operated by Energen Resources Corporation. The general depth of the pipeline is considered to be between 6 feet to 10 feet below grade surface beneath the cultivated field.

The objective of the SESI was to further evaluate the presence, magnitude, and extent of petroleum hydrocarbons in soil and groundwater as a result of a March 2012 release from the Federal 2E #1 pipeline.

Specific details regarding the investigation are further explained in the following sections and should be read to fully comprehend the extent of the investigation and results. In addition, historical and recent findings, as well as current recommendations are included in this executive summary for your convenience; however, the remaining text of the report and associated appendices should also be reviewed for a complete understanding of the SESI report.

On March 15, 2012, a natural gas condensate release was discovered by NAPI personnel. Enterprise was immediately notified, and the pipeline was isolated, removed from service and an estimated 120 cubic yards of petroleum hydrocarbon affected soils were disposed off-site. Additionally, a "pot hole" was excavated to a total depth of 23 feet below grade surface (bgs) within the confines of the excavation. One (1) soil sample (S-1) was collected from the bottom of the pot hole and submitted for laboratory analysis of total petroleum hydrocarbons (TPH) gasoline range organics (GRO)/diesel range organics (DRO), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Based on the laboratory analysis, BTEX or TPH GRO/DRO concentrations were not identified above the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division's (OCD) Remediation Action Levels (RALs). Between March 2012 and January 2013, two (2) groundwater samples were collected from open boreholes at soil borings SB-2 and PMW-1 and analyzed for BTEX. Based on the laboratory analytical results, the groundwater samples exhibited benzene, toluene, and total xylenes concentrations which exceeded the New Mexico Water Quality Control Commission (WQCC) standards of 10 µg/L, 750 µg/L, and 620 µg/L, respectively.

Subsequent to consultation with the Navajo Nation Environmental Protection Agency (NNEPA), SWG advanced eleven (11) soil borings (MW-1 through MW-11) at the Site during the completion of SESI activities on April 11th through April 13th, 2013. Eight (8) of the soil borings (MW-1, MW-2, MW-3, MW-6, MW-8, MW-9, MW-10 and MW-11) were converted to permanent groundwater monitoring wells and two (2) of the soil borings (P-4 and P-5) were converted to piezometers. The monitoring wells were subsequently sampled utilizing low-flow sampling techniques.

Based on the tasks completed, SWG presents the following findings:

- Constituent of concern (COC) concentrations were not identified in soil above the *OCD Remediation Action Levels*.
- Light non-aqueous phase liquids (LNAPL) were not observed in association with the initial groundwater-bearing unit during the groundwater sampling.
- The two (2) piezometers, which were installed at total depths of 10 feet bgs near the pipeline in the vicinity of the release excavation, did not exhibit any fluid accumulations during the duration of the SESI activities.
- Groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 330 µg/L, 230 µg/L, and 560 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.

Based on the results of the SESI, petroleum hydrocarbon affected groundwater was identified in the vicinity of monitoring wells MW-2, MW-6, and MW-11 in exceedance of the New Mexico WQCC standard. Groundwater was encountered at the site at a minimum depth of approximately 15 feet bgs.

SWG has the following recommendations:

- Report the results of this investigation to the Navajo Nation Environmental Protection Agency, the Navajo Agricultural Products Industry, and the New Mexico OCD;
- As crop rotations allow, perform additional delineation activities to further define the extent of COCs in groundwater north/northwest of monitoring well MW-11;
- Perform quarterly groundwater monitoring of the existing monitoring well network to further evaluate the magnitude of COCs in groundwater;
- Gauge existing piezometers monthly, and sample the piezometers as part of the monitoring event if adequate fluids have accumulated.
- Evaluate technologies for effective groundwater remediation at the Site.

2.0 INTRODUCTION

2.1 SITE DESCRIPTION AND BACKGROUND

The Federal 2E #1 pipeline release site is located in the NAPI Field 409A, off CR 7010, in Section 2, Township 27N, Range 12W San Juan County, Navajo Nation, New Mexico. The Site is an agricultural field irrigated by pivot irrigation. A 4-inch diameter Enterprise natural gas pipeline transects the NAPI field from southwest to northeast, where it ties in to the Federal 2E #1 meter operated by Energen Resources Corporation. The general depth of the pipeline is considered to be between 6 feet to 10 feet bgs beneath the cultivated field.

On March 15, 2012, a natural gas condensate release was discovered by NAPI personnel. Enterprise was immediately notified, and the pipeline was isolated. Between March 21, 2012 and March 23, 2012, Enterprise contractors excavated petroleum hydrocarbon affected soils from the site of the release, culminating in a 16 foot by 16 foot excavation with a depth of approximately 12 feet bgs. Additionally, a "pot hole" was excavated to a total depth of 23 feet bgs within the confines of the excavation. One (1) soil sample (S-1) was collected from the bottom of the pot hole and submitted for laboratory analysis of TPH GRO/DRO and BTEX. Based on the laboratory analysis, BTEX or TPH GRO/DRO concentrations were not identified above the New Mexico EMNRD OCD RALS.

The release originated from two (2) corrosion holes identified in the pipeline, which were subsequently repaired. On March 26th and 27th, 2012, Enterprise contractors backfilled the excavation with material obtained from NAPI, and the pipeline was restored to service. Approximately 120 cubic yards of affected soil from the excavation was transported to the nearby Envirotech, Inc. landfarm near Angel Peak for treatment/disposal.

On March 30th and 31st, 2012, Animas Environmental, LLC (AES) advanced five (5) soil borings (SB-1 through SB-5) at the Site. Based on the laboratory analytical results, the soil samples collected from the soil borings did not exhibit TPH GRO/DRO or BTEX concentrations above the OCD RALS. Additionally, one (1) groundwater sample (SB-2W) was collected from an open borehole at soil boring SB-2 and analyzed for BTEX. Based on the laboratory analytical results, the groundwater sample (SB-2W) exhibited concentrations of benzene (1,500 µg/L), toluene (3,500 µg/L), and total xylenes (1,900 µg/L) which exceeded the New Mexico WQCC standards of 10 µg/L, 750 µg/L, and 620 µg/L, respectively.

On January 14th, 2013, AES collected one (1) groundwater sample from an open borehole within the former excavation footprint. The groundwater sample collected from soil boring PMW-1 was analyzed for BTEX. Based on the laboratory analytical results, groundwater sample (PMW-1) exhibited groundwater concentrations of benzene (19,000 µg/L), toluene (33,000 µg/L), ethylbenzene (1,300 µg/L) and total xylenes (10,000 µg/L) that exceeded the New Mexico WQCC standards of 10 µg/L, 750 µg/L, 750 µg/L, and 620 µg/L, respectively for these constituents.

The Site location is depicted on Figure 1 of Appendix A which was reproduced from a portion of a United States Geological Survey (USGS) 7.5-minute series topographic map.

A Site Vicinity Map of the subject Site and adjoining properties is included as Figure 2 of Appendix A.

2.2 CHRONOLOGY OF EVENTS

Significant events and related activities associated with the Site, including the results of Site investigation activities and corrective action completed to date, are provided in the following table:

March 2012	The release was discovered by NAPI personnel and reported to Enterprise. The pipeline was isolated and the petroleum hydrocarbon affected soils in the vicinity of the release were excavated and disposed at the Envirotech, Inc. Landfarm near Angel Peak. The pipeline was repaired and returned to service and the excavation backfilled to grade. Soil borings were advanced in the vicinity of the release and the laboratory analysis of a groundwater sample collected from the bore hole of boring SB-2W exhibited concentrations of benzene, toluene, and total xylenes above the NM WQCC standards. AES prepared a letter report titled <i>"Initial Release Assessment and Abatement Report and Release Investigation Workplan"</i> , dated March 28, 2012 for submittal to NAPI management.
July 2012	AES prepared a report titled <i>"Site Investigation Report Enterprise Products Company Federal 2E #1 Pipeline Release"</i> , dated July 2, 2012 – for submittal to NAPI management.
January 2013	AES prepared a workplan titled <i>"Continued Site Investigation Workplan Enterprise Field Services, LLC Federal 2E #1 March 2012 Release"</i> , dated January 3, 2013 for submittal to the Navajo Environmental Protection Agency. A groundwater sample (PMW-1) was collected during an unsuccessful attempt to install monitoring wells at the site with a push-probe rig. The groundwater sample was collected from an open borehole in the suspected source area and exhibited concentrations of benzene, toluene, ethylbenzene, and total xylenes above the New Mexico WQCC groundwater standards.
February 2013	Enterprise, NAPI, and AES representatives met at the Site to discuss project planning. The proposed scope of work at the site was modified to include the installation of three (3) permanent monitoring wells utilizing a hollow stem auger drilling rig to allow for the collection of representative groundwater samples.
April 2013	Enterprise coordinates with NAPI and the NNEPA to initiate COC delineation activities at the site under a proposed <i>Supplemental Site Investigation Work Plan</i> dated April 4, 2013. The details of the Supplemental Site Investigation are detailed in this report.

2.3 CHEMICALS OF CONCERN

The soil samples collected from the soil borings during previous site investigation activities were analyzed for TPH GRO/DRO utilizing EPA method SW-846 #8015 and BTEX using EPA SW-846 method #8021. The groundwater samples collected from the bore holes during previous site investigation activities were analyzed for BTEX using EPA SW-846 method #8021.

- Based on the laboratory analytical results, TPH GRO/DRO and BTEX concentrations identified in soils remaining at the site are below the applicable *OCD Remediation Action Levels*.
- Based on the laboratory analytical results from the groundwater sampling of open boreholes at the Site, benzene, toluene, ethylbenzene and xylenes concentrations were identified in groundwater above the New Mexico WQCC *Water Quality Standards* of 10 µg/L, 750 µg/L, 750 µg/L and 620 µg/L, respectively.

Figure 3 indicates the approximate location of the release area in relation to pertinent Site features and general Site boundaries.

2.4 SITE INVESTIGATION OBJECTIVE

The objective of the SESI was to further evaluate the presence, magnitude, and extent of petroleum hydrocarbons in soil and groundwater as a result of a March 2012 release from the Federal 2E #1 pipeline. In addition, soil samples were collected to evaluate the potential presence of COCs in the "soil horizon" or root zone due to the intended agricultural use of the property.

2.5 STANDARD OF CARE & LIMITATIONS

The findings and recommendations contained in this report represent SWG's professional opinions based upon information derived from on-site activities and other services performed under this scope of work and were arrived at in accordance with currently acceptable professional standards. The findings were based upon analytical results provided by an independent laboratory. Evaluations of the geologic/hydrogeologic conditions at the site for the purpose of this investigation are made from a limited number of available data points (i.e. soil borings and ground water samples) and site wide subsurface conditions may vary from these data points. SWG makes no warranties, express or implied, as to the services performed hereunder. Additionally, SWG does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

This report is based upon a specific scope of work requested by Enterprise Field Services, LLC. The agreement between SWG and Enterprise Field Services, LLC outlines the scope of work, and only those tasks specifically authorized by that agreement or outlined in this report were performed. This report has been prepared for the intended use of Enterprise Field Services, LLC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Enterprise Field Services, LLC and SWG.

3.0 SUPPLEMENTAL SITE INVESTIGATION

3.1 SOIL BORINGS AND MONITORING WELLS

SWG's field investigation activities were conducted between April 11th and April 18th, 2013 by Mr. Kyle Summers, a SWG environmental professional. As part of the modified scope of work, eleven (11) soil borings were advanced in the vicinity of the former pipeline release. Each soil boring was advanced utilizing a hollow-stem auger drilling rig. Soil borings MW-1, MW-2, MW-3, P-4, and P-5 were advanced in the immediate vicinity of the release source. Soil boring MW-8 was advanced southwest of the source along the pipeline right-of-way. Soil borings MW-6, SB-7, MW-9, MW-10, and MW-11 were advanced west and northwest of the release source, in an effort to further delineate the potential groundwater impact. Photographic documentation is provided in Appendix B. Figure 3 identifies the location of the soil borings in relation to pertinent Site features (Appendix A).

Soil samples were collected continuously utilizing five-foot core barrel samplers to the termination depth of each soil boring. Soil samples were observed to document soil lithology, color, moisture content, and visual and olfactory evidence of petroleum hydrocarbons. Upon retrieval of each core barrel from the borehole, each soil sample was immediately divided into portions designated for field screening or laboratory analysis. Field headspace analysis was conducted by placing the portion of the soil sample designated for field screening into a plastic ziplock bag. The plastic bag was sealed and then allowed to volatilize. The air above the sample, the headspace, was then evaluated using a photoionization detector (PID) capable of detecting volatile organic compounds (VOCs). The PID was calibrated utilizing an isobutylene standard prior to use in the field.

During the completion of each soil boring, an on-site geoscientist documented the lithology encountered and constructed a continuous profile of the soil column from the surface to the boring terminus. Undisturbed soil samples from each boring location were visually inspected and logged in the field. The lithology encountered during the advancement of soil boring MW-1 included moderate yellowish-brown silty sand from the surface to a depth of approximately 9 feet bgs. The silty sand was underlain by moderate yellowish brown to gray-orange clayey and/or silty sand to the terminus of the boring at 25 feet bgs. The lithologies encountered during the advancement of soil borings MW-2 through MW-11, P-4 and P-5 were generally similar to the lithology encountered while advancing soil boring MW-1. Detailed lithologic descriptions are presented on soil boring logs included in Appendix C.

Petroleum hydrocarbon odors and PID readings in excess of 100 parts per million (ppm) were detected in the field in soil samples collected from soil boring MW-2. The PID readings from MW-2 ranged from below the instrument detection limits to 732 parts per million (ppm), with the elevated readings (> 100 ppm) occurring between depths of 15 and 23 feet bgs. Petroleum hydrocarbon odors and/or elevated PID readings (> 100 ppm) were not detected in the soil samples collected from soil borings MW-1, MW-3, P-4, P-5, MW-6, SB-7, and MW-8 through MW-11. Field screening results are presented on soil boring logs included in Appendix C.

Subsequent to advancement, eight (8) of the soil borings (MW-1, MW-2, MW-3, MW-6, MW-8, MW-9, MW-10 and MW-11) were completed as monitoring wells and two (2) of the soil borings (P-4 and P-5) were completed as piezometers. Soil boring SB-7 was plugged with hydrated bentonite to five feet below grade and then backfilled with soil cuttings to the surface. The monitoring wells were completed as follows:

- Installation of 10 to 15 feet of 2-inch diameter, machine slotted PVC well screen assembly with a threaded bottom plug;
- Installation of blank PVC riser pipe to surface;
- Addition of graded silica sand for annular sand pack around the well screen from the bottom of the well to two feet above the top of the screen;
- Placement of 2 feet of hydrated bentonite pellets above the sand pack;
- Addition of cement/bentonite slurry to the surface; and
- Installation of a locking well cap and above-grade steel riser with marking flag and the addition of concrete-filled steel bollard posts, painted traffic-yellow for visibility, to provide a 4-foot protective radius around the monitoring well.

The piezometers were designed as temporary installations to monitor for vadose zone liquids. The piezometers were completed as follows:

- Installation of 5 feet of 2-inch diameter, machine slotted PVC well screen assembly with a threaded bottom plug;
- Installation of blank PVC riser pipe to surface, painted traffic-yellow for visibility above grade;
- Addition of graded silica sand for annular sand pack around the well screen from the bottom of the well to two feet above the top of the screen;
- Placement of 2 feet of hydrated bentonite pellets above the sand pack; and
- A locking compression well cap.

Monitoring well and piezometer details are presented on the soil boring/monitoring well logs included in Appendix C.

3.2 INVESTIGATION SAMPLING PROGRAM

2.2.1. Soil Sampling Program

SWG's soil sampling program involved submitting up to four (4) soil samples from each soil boring for laboratory analysis. Soil samples were collected from the zone exhibiting the highest concentration of petroleum hydrocarbons based on visual, olfactory or PID evidence, from the capillary fringe zone, from a change in lithology, or from the bottom of the boring, based on the field professional's judgment. Soil sample intervals are presented with the soil sample analytical results (Table 1) in Appendix D and are provided on the boring logs included in Appendix C.

2.2.2. Groundwater Sampling Program

Subsequent to proper well development by bailing/surging, and allowing at least 24 hours of recovery, each monitoring well was gauged with an interface probe capable of detecting and measuring light non-aqueous phase liquid (LNAPL) hydrocarbons to

determine accurate depth-to-water measurements and evaluate the potential presence of free-phase hydrocarbons. LNAPL was not detected during the groundwater sampling event.

Prior to sample collection, each monitoring well was micro-purged utilizing low-flow sampling techniques. Low-flow refers to the velocity with which groundwater enters the peristaltic pump or bladder pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system to the extent practical taking into account established site sampling objectives. Flow rates on the order of 0.1 to 0.5 L/min will be maintained during the sampling activities using dedicated sampling equipment.

The utilization of low-flow minimal drawdown techniques enables the isolation of the screened interval groundwater from the overlying stagnant casing water. The pump intake is placed within the screened interval such that the groundwater pumped is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The monitoring wells were purged until produced groundwater was consistent in color, clarity, pH, temperature and conductivity.

The groundwater samples were collected in laboratory prepared glassware and placed on ice in a cooler, which was secured with a custody seal. The samples were transported to a selected analytical laboratory along with a completed chain-of-custody form.

4.0 LABORATORY ANALYTICAL PROGRAM

4.1 LABORATORY ANALYTICAL METHODS

The soil and groundwater samples collected from the soil borings/monitoring wells were analyzed for TPH GRO/DRO utilizing EPA SW-846 method #8015 and BTEX using EPA SW-846 method #8021.

Laboratory results are summarized in the tables included in Appendix D. The executed chain-of-custody form and laboratory data sheets are provided in Appendix E.

4.2 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

Reusable sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before the collection of each sample.

Soil and groundwater samples were collected and placed in laboratory prepared glassware, sealed with custody tape and placed on ice in a cooler, which was secured with a custody seal. The sample coolers and completed chain-of-custody forms were

relinquished to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico for standard turnaround.

Hall performed the analyses of samples under an adequate and documented quality assurance program to meet the project and data quality objectives. The laboratory's quality assurance program is generally consistent with the quality standards outlined in the National Environmental Laboratory Accreditation Program, as amended. In addition, the data generated by Hall meets the intralaboratory performance standards for the selected analytical method and the performance standards are sufficient to meet the bias, precision, sensitivity, representativeness, comparability, and completeness, as specified in the project data quality objectives.

5.0 SITE CHARACTERIZATION

5.1 GEOLOGY & HYDROGEOLOGY

According to the New Mexico Bureau of Geology and Mineral Resource (Geologic Map of New Mexico 2003), the Site overlies the Nacimiento geologic formation. The Nacimiento geologic formation is a heterogeneous non-marine formation composed of sandstone, siltstone, and shale, comprised of sediment eroded from the San Juan and Brazos-Sangre de Cristo uplifts. The Paleocene-age Nacimiento Group includes the Puerco and Torrejon Formations. The lithology encountered at the Site during boring activities consists of alluvial deposits derived from erosion of the parent Nacimiento and overlying San Jose sandstones and siltstones. Based on the available soil boring samples, these alluvia generally consist of brown silty sands and silty clays from the ground surface to at least 25 feet bgs.

The lithology encountered during the advancement of soil boring MW-1 included moderate yellowish-brown silty sand from the surface to a depth of approximately 9 feet bgs. The silty sand was underlain by moderate yellowish brown to gray-orange clayey and/or silty sand to the terminus of the boring at 25 feet bgs. The lithologies encountered during the advancement of soil borings MW-2 through MW-11, P-4 and P-5 were generally similar to the lithology encountered while advancing soil boring MW-1. Detailed lithologic descriptions are presented on soil boring logs included in Appendix C.

The major aquifer underlying the Site vicinity is listed as the Colorado Plateaus Aquifer, which is made up of four smaller aquifers, the Uinta-Animas, the Mesa Verde, the Dakota-Glen, and the Coconino-De Chelly. The Uinta-Animas is the shallowest of these aquifers, and is present in the San Juan Basin. The general composition of the aquifers is moderately to well-consolidated sedimentary rocks of an age ranging from Permian to Tertiary. Each aquifer is separated from the others by an impermeable confining unit. Two of the confining units are completely impermeable and cover the entire area of the aquifers. The other two confining units are less extensive and are thinner. These units allow water to flow between the principal aquifers. There are numerous streams, rivers, and lakes that overlay the Colorado Plateaus Aquifers. The surface water bodies in this region provide a place for the aquifers to discharge. Some of the rivers and lakes may also provide recharge.

The initial groundwater-bearing unit (GWBU) at the Site was encountered at a depth of approximately 15 to 20 feet bgs during the investigation activities. The shallow GWBU in this area is heavily influenced by local irrigation, and the local depth to water is expected to fluctuate considerably. Based on information obtained during the SESI, the general flow direction of the initial shallow, GWBU is to the north-northwest across the Site, following the surface topography and what appears to be a buried drainage/erosional feature at a gradient of approximately 0.525 feet/foot.

5.1.1 Groundwater Flow

Monitoring well top-of-casing (TOC) elevations were geospatially surveyed and referenced to known benchmarks. Groundwater measurements were collected utilizing an interface probe capable of detecting and measuring LNAPL hydrocarbons to determine accurate depth-to-water measurements and evaluate the potential presence of free-phase hydrocarbons. Based on groundwater elevations identified in association with each of the monitoring wells, the groundwater gradient at the Site slopes generally to the north-northwest at an average of 0.525 ft/ft.

Figure 4 is a Groundwater Gradient Map which depicts the groundwater elevations identified during the most recent gauging event. Table 3 (Appendix D) includes the gauging date, depth to groundwater and groundwater elevations for the gauging event(s) performed at the Site.

5.1.2 Groundwater Classification

In accordance with 19.15.30 NMAC *Remediation*, a groundwater-bearing unit is classified as an "Underground Source of Drinking Water" provided the groundwater-bearing unit is capable of producing water for human consumption or that contains ground water having a TDS concentration of 10,000 mg/l or less and that is not an exempted aquifer".

Although TDS samples were not collected during the SESI groundwater sampling event, conductivity readings recorded during sampling activities indicate the initial GWBU at the Site would exhibit TDS concentrations of less than 10,000 mg/l.

5.2 SITE RANKING & PROPOSED CLEANUP GOALS

The Site is under the jurisdiction of the NNEPA. In the absence of published NNEPA regulatory guidance pertaining specifically to oil & gas production and gathering, Enterprise was referred to New Mexico OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically New Mexico Administrative Code (NMAC) 19.15.30 *Remediation*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Enterprise utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	20
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area • <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet	20	0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			20

Based on SWG's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 20. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is <50 feet at the Site.

Based on a Total Ranking Score of 20, cleanup goals for soil located at the Site include: 10 mg/Kg for benzene, 50 mg/Kg for total BTEX and 100 mg/Kg for TPH GRO/DRO.

In addition, cleanup goals for groundwater located at the Site include the NMWQCC *Water Quality Standards* of: 10 µg/L for benzene, 750 µg/L for toluene, 750 µg/L for ethylbenzene, and 620 µg/L for xylenes.

6.0 DATA EVALUATION

The Site is under the jurisdiction of the NNEPA. Due the absence of published NNEPA regulatory guidance, SWG utilized the available New Mexico EMNRD OCD guidance and rules. To address activities related to crude oil/condensate related releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the EMNRD/OCD rules, specifically NMAC 19.15.30 Remediation. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

Based on SWG's review of Site characteristics (specifically: depth to groundwater, wellhead protection area and distance to surface water) an associated ranking score of 20 was determined for the Site. Consequently, the OCD's *Remediation Action Levels* for soils on sites having a total ranking score greater than 19 is 10 milligrams per kilogram (mg/Kg) for benzene, 50 mg/Kg for total BTEX and 100 mg/Kg for TPH GRO/DRO. The New Mexico WQCC *Groundwater Quality Standards* are 10 micrograms per liter (µg/L) for benzene, 750 µg/L for toluene, 750 µg/L for ethylbenzene, and 620 µg/L for total xylenes.

6.1 SOIL SAMPLES

SWG compared the TPH GRO/DRO and BTEX concentrations or laboratory reporting limits (RLs) associated with the soil samples collected from the SESI soil borings to the OCD *Remediation Action Levels* for Sites having a total ranking score greater than 19. The results of the soil sample analyses are summarized in Table 1 included in Appendix D.

Total Petroleum Hydrocarbons

The soil samples collected from SESI soil borings at the Site did not exhibit TPH GRO/DRO concentrations above the laboratory RLs, which were below the OCD's *Remediation Action Level* of 100 mg/Kg.

Benzene and Total BTEX

The soil samples collected from the SESI soil borings did not exhibit benzene, toluene, ethylbenzene or total xylenes concentrations above the laboratory RLs, which are below the OCD's *Remediation Action Levels*.

6.2 GROUNDWATER SAMPLES

SWG compared BTEX concentrations or RLs associated with the groundwater samples collected from the temporary sampling wells to the New Mexico WQCC *Groundwater Quality Standards (GQSs)*.

The results of the groundwater sample analyses are summarized in Table 2 of Appendix D.

Total Petroleum Hydrocarbons

The groundwater samples collected from monitoring wells MW-1 through MW-3, MW-6, and MW-8 through MW-11 exhibited TPH GRO concentrations ranging from below laboratory RLs to 2.3 µg/L. TPH DRO concentrations were not identified above the laboratory RLs.

Benzene, Toluene, Ethylbenzene, and Xylenes

The groundwater samples collected from the monitoring wells MW-1, MW-3, MW-8, MW-9, and MW-10 did not exhibit benzene concentrations above the laboratory RLs, which are below the WQCC *Groundwater Quality Standard* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 exhibited benzene concentrations of 330 µg/L, 230 µg/L, and 560 µg/L, respectively, which exceed the WQCC *Groundwater Quality Standard* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-11 did not exhibit toluene concentrations above the laboratory RLs, which are below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater sample collected from monitoring well MW-2 exhibited a toluene concentration of 41 µg/L, which is below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-11 did not exhibit ethylbenzene concentrations above the laboratory RLS, which are below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater sample collected from monitoring well MW-2 exhibited a ethylbenzene concentration of 2.5 µg/L, which is below the WQCC *Groundwater Quality Standard* of 750 µg/L.

The groundwater samples collected from monitoring wells MW-1, MW-3, MW-6, and MW-8 through MW-10 did not exhibit xylenes concentrations above the laboratory RLS, which are below the WQCC *Groundwater Quality Standard* of 620 µg/L.

The groundwater samples collected from monitoring wells MW-2 and MW-11 exhibited total xylene concentrations of 45 µg/L and 79 µg/L, respectively, which are below the WQCC *Groundwater Quality Standard* of 620 µg/L.

7.0 FINDINGS AND RECOMMENDATIONS

SWG has completed a SESI at the Federal 2E #1 Pipeline Release Site located in the NAPI Field 409A, off CR 7010, in Section 2, Township 27N, Range 12W San Juan County, Navajo Nation, New Mexico. The Site is an agricultural field irrigated by pivot irrigation. A 4-inch diameter Enterprise natural gas pipeline transects the NAPI field from southwest to northeast, where it ties into the Federal 2E #1 gas well operated by Energen Resources Corporation. The general depth of the pipeline is considered to be between 6 feet to 10 feet bgs beneath the cultivated field.

On March 15, 2012, a natural gas condensate release was discovered by NAPI personnel. Enterprise was immediately notified, and the pipeline was isolated. Between March 21, 2012 and March 23, 2012, Enterprise contractors excavated petroleum hydrocarbon affected soils from the site of the release, culminating in a 16 foot by 16 foot excavation with a depth of 12 feet bgs. Approximately 120 cubic yards of petroleum hydrocarbon affected soil from the excavation was transported to the nearby Envirotech, Inc. landfarm near Angel Peak for treatment/disposal.

Subsequent investigations performed between March 2012 and January 2013 identified potential groundwater impact from petroleum hydrocarbons.

Subsequent to consultation with NNEPA, SWG advanced eleven (11) soil borings (MW-1 through MW-11) at the Site during the completion of supplemental site investigation activities on April 11th through April 13th, 2013. Eight (8) of the soil borings (MW-1, MW-2, MW-3, MW-6, MW-8, MW-9, MW-10 and MW-11) were converted to permanent groundwater monitoring wells and two (2) of the soil borings (P-4 and P-5) were converted to piezometers. The monitoring wells were subsequently sampled utilizing low-flow sampling techniques.

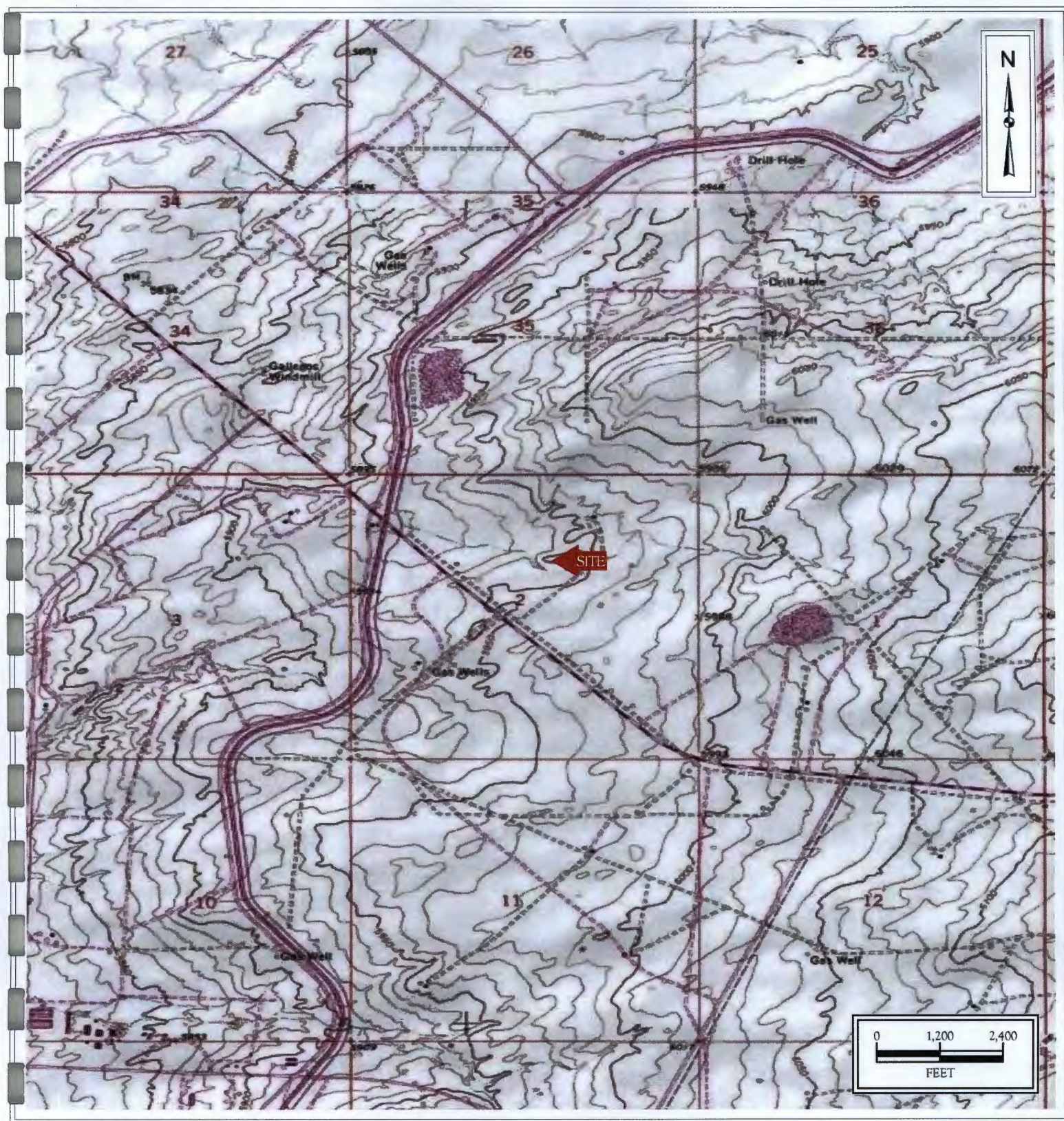
Based on the tasks completed, the following findings are reiterated:

- COC concentrations were not identified in soil above the OCD *Remediation Action Levels*.
- LNAPL was not observed in association with the initial groundwater-bearing unit during the groundwater sampling event.
- The two (2) piezometers, which were installed at total depths of 10 feet bgs near the pipeline in the vicinity of the release excavation, did not exhibit any fluid accumulations during the duration of the SESI activities.
- Groundwater samples collected from monitoring wells MW-2, MW-6, and MW-11 during April 2013 exhibited benzene concentrations of 330 µg/L, 230 µg/L, and 560 µg/L, respectively, which are above the New Mexico WQCC standard of 10 µg/L.

Based on the results of the SESI, petroleum hydrocarbon affected groundwater was identified in the vicinity of monitoring wells MW-2, MW-6, and MW-11 in exceedance of the New Mexico WQCC standard. Groundwater was encountered at the site at a minimum depth of approximately 15 feet bgs.

SWG has the following recommendations:

- Report the results of this investigation to the Navajo Nation Environmental Protection Agency, the Navajo Agricultural Products Industry, and the New Mexico OCD;
- As crop rotations allow, perform additional delineation activities to further define the extent of COCs in groundwater north/northwest of monitoring well MW-11;
- Perform quarterly groundwater monitoring of the existing monitoring well network to further evaluate the magnitude of COCs in groundwater;
- Gauge existing piezometers monthly, and sample the piezometers as part of the quarterly monitoring events if adequate fluids have accumulated;
- Evaluate technologies for effective groundwater remediation at the Site after delineation activities are complete.



Enterprise Field Services
 Federal 2E #1 Pipeline Release
 SW1/4 NE1/4 S2 T27N R12W
 N36° 36' 24.52"; W108° 04' 48.47"
 San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
 GEOSCIENCE

Figure 1
 Topographic Map
 Gallegos Trading Post
 New Mexico Quadrangle
 Contour Interval = 10 Feet
 1965

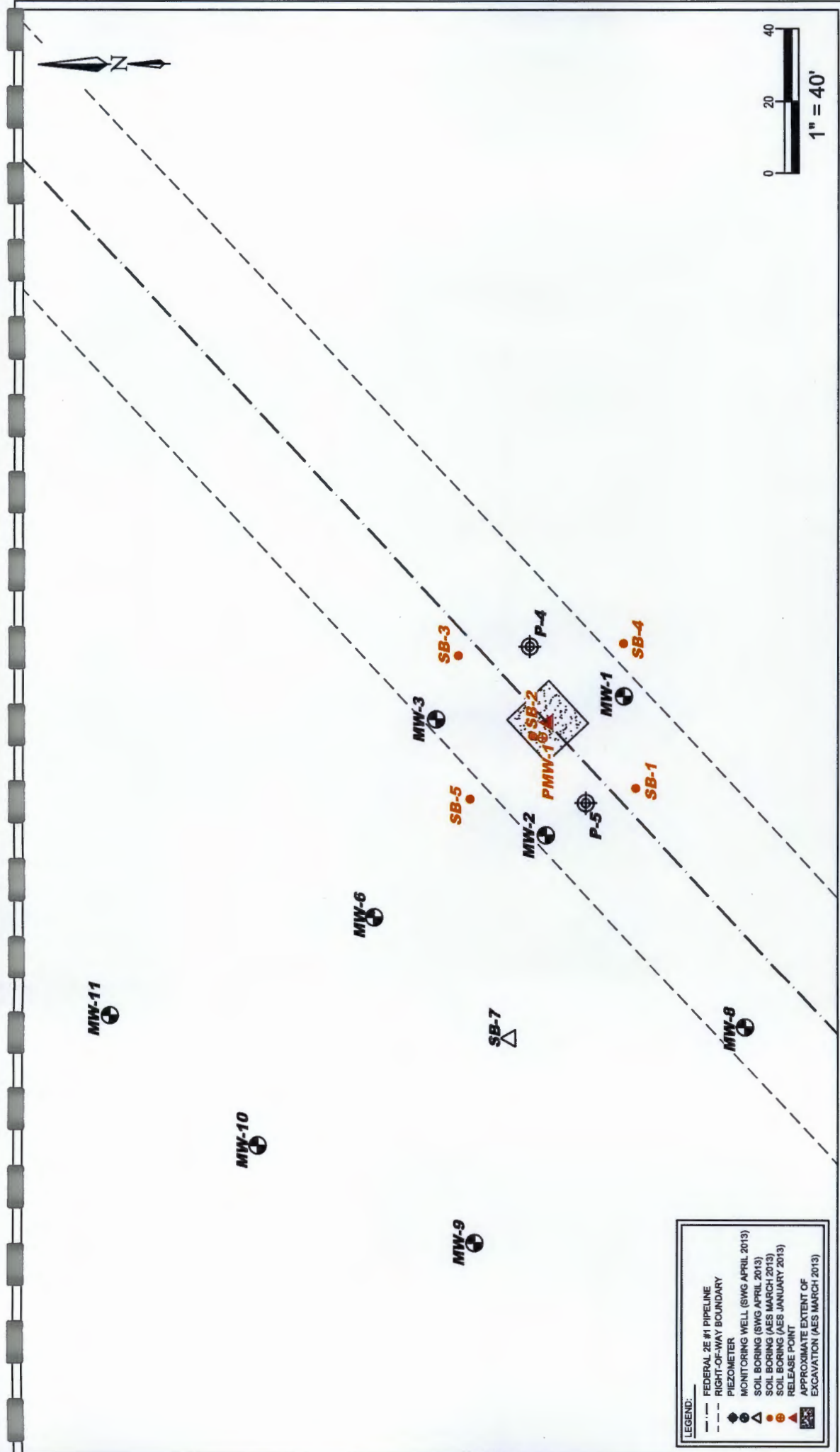


Enterprise Field Services
Federal 2E #1 Pipeline Release
SW1/4 NE1/4 S2 T27N R12W
N36° 36' 24.52"; W108° 04' 48.47"
San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
GEOSCIENCE

Figure 2
Site Vicinity
Map



Enterprise Field Services, LLC
 Federal 2E #1 Pipeline Release
 SW1/4 NE 1/4 S2 T27N R12W
 N36° 36' 24.52"; W108° 04' 48.47"
 San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
 GEOSCIENCE

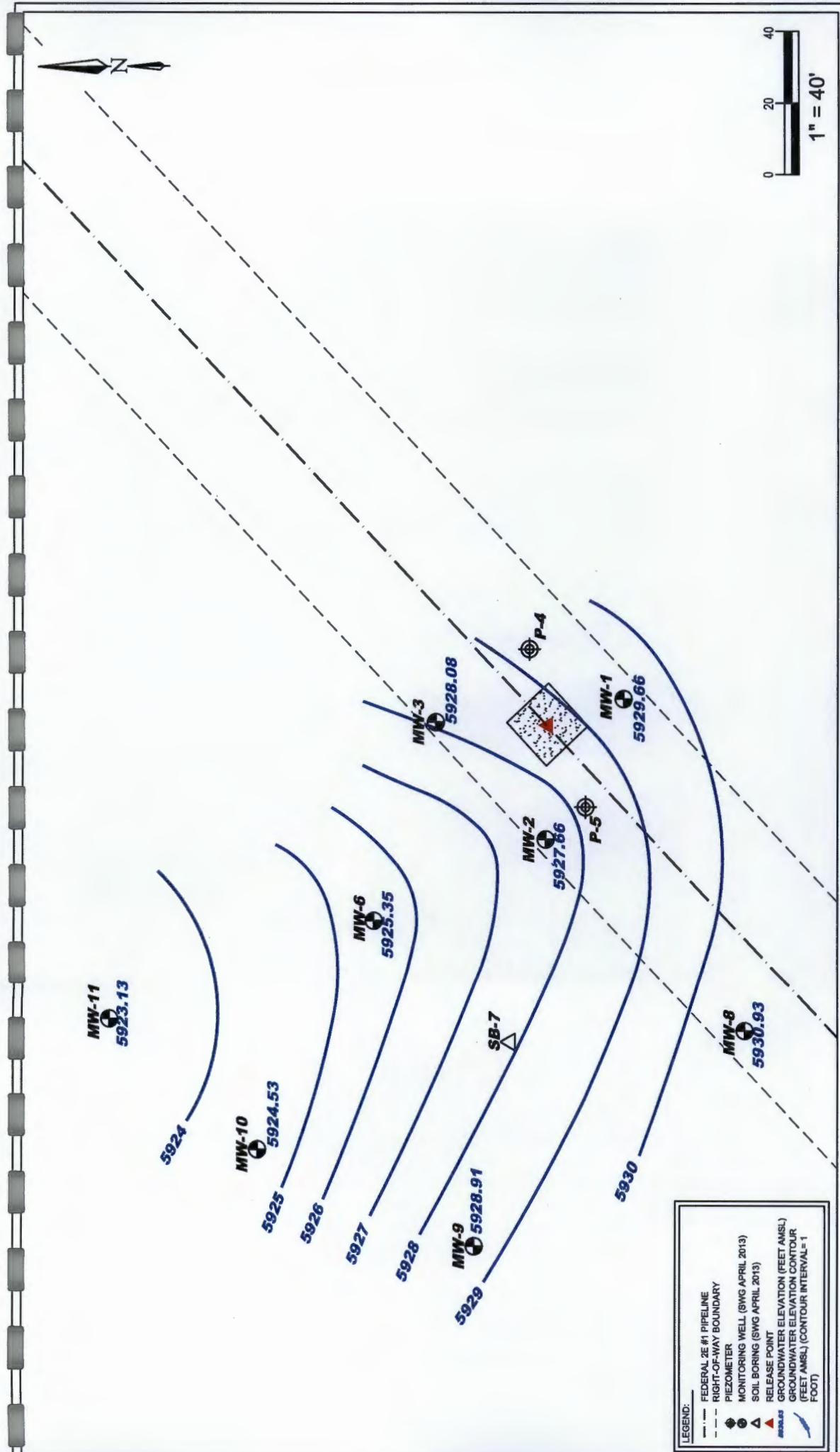
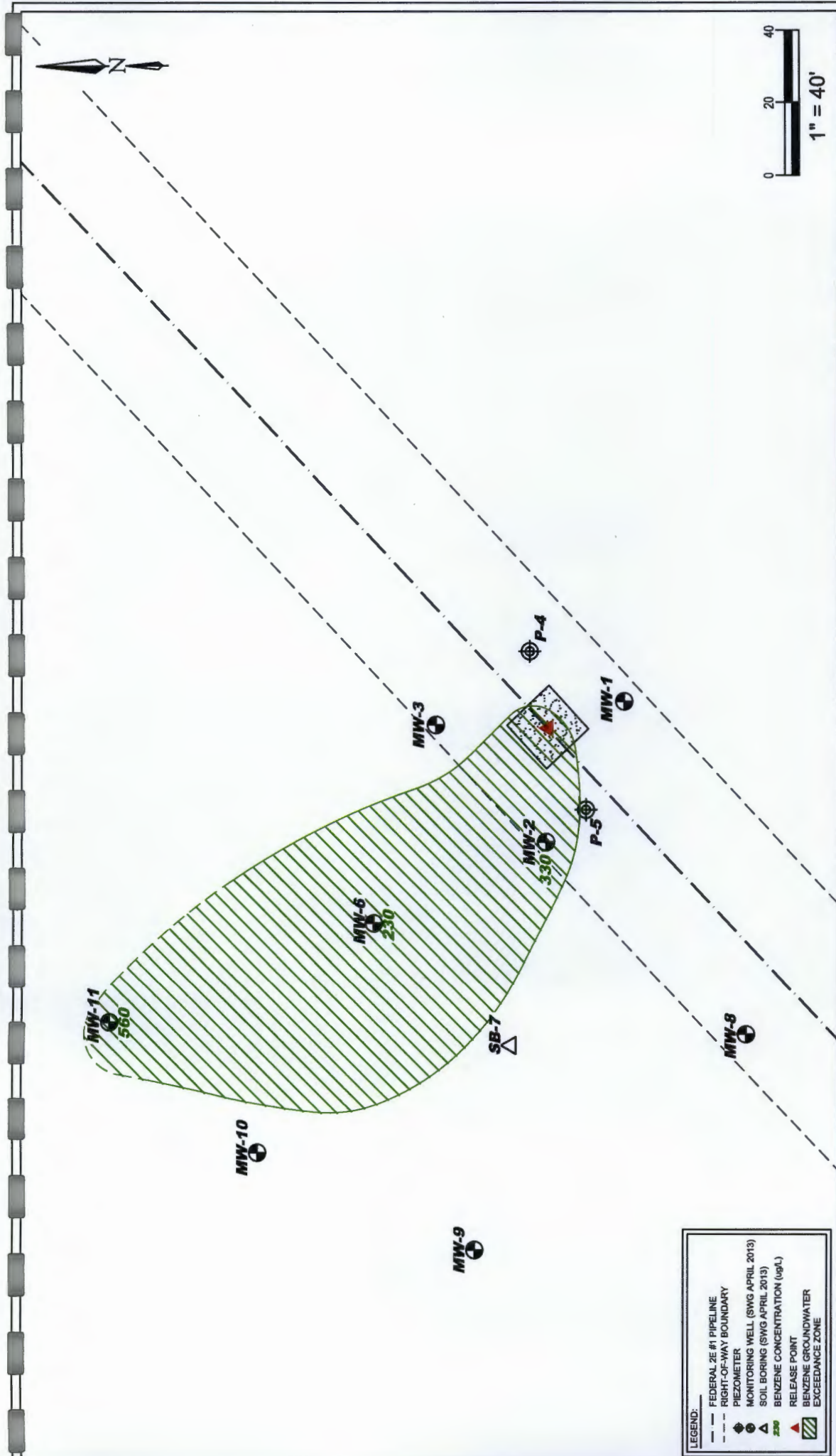


Figure 4
Groundwater
Gradient Map
April 2013

Southwest
GEO SCIENCE

Enterprise Field Services, LLC
Federal 2E #1 Pipeline Release
SW1/4 NE 1/4 S2 T27N R12W
N36° 36' 24.52"; W108° 04' 48.47"
San Juan County, New Mexico

SWG Project No. 0413G002



Enterprise Field Services, LLC
 Federal 2E #1 Pipeline Release
 SW1/4 NE 1/4 S2 T27N R12W
 N36° 36' 24.52", W108° 04' 48.47"
 San Juan County, New Mexico

SWG Project No. 0413G002

Southwest
 GEOSCIENCE

Figure 5
 Benzene Groundwater
 Exceedance Zone



1.) General view of hydro-vac activities to "day light" the pipeline prior to drilling.



2.) Representative view of soil boring advancement.



3.) General view of monitoring well installation activities.



4.) General view of bollard placement.



5.) Representative view of monitoring Well surface completion.



6.) General view of Bollard placement and completion.

MONITORING WELL/SOIL BORING LOG

DRILLING & SAMPLING INFORMATION

WELL CONSTRUCTION INFORMATION

GROUNDWATER DEPTH

Well Diameter:	2"
Screen Size:	0.010"
Screen Length:	15'
Casing Length:	10'
Surface Completion:	Above Ground

NOTE: This log is not to be used outside the original report.

MONITORING WELL/SOIL BORING LOG

DRILLING & SAMPLING INFORMATION

WELL CONSTRUCTION INFORMATION

GROUNDWATER DEPTH

- Depth at Completion
- Depth at Stabilization

Well Diameter:	2"
Screen Size:	0.010"
Screen Length:	15'
Casing Length:	10'
Surface Completion:	Above Ground

NOTE: This log is not to be used outside the original report.

MONITORING WELL/SOIL BORING LOG

WELL CONSTRUCTION INFORMATION

Date Started: 4/11/2013
Date Completed: 4/11/2013
Drilling Company: Kyvek
Driller: Kelly Padia
Boring Method: Hollow Stem Auger
Geologist: K. Summers
Bore Hole Diamter: 8"
Sampler Type: NA

GROUNDWATER DEPTH

- ▼ Depth at Completion
- ⚙ Depth at Stabilization

NOTE: This log is not to be used outside the original report.

Client: Enterprise Field Services
 Project: Federal 2E #1 Pipeline Release
 Project Location: San Juan County, NM
 Project Manager: K. Summers

MONITORING WELL/SOIL BORING LOG

Soil Boring Number: P4
 Project Number: 0413G002
 Drawn By: RDH
 Approved by: KS

DRILLING & SAMPLING INFORMATION

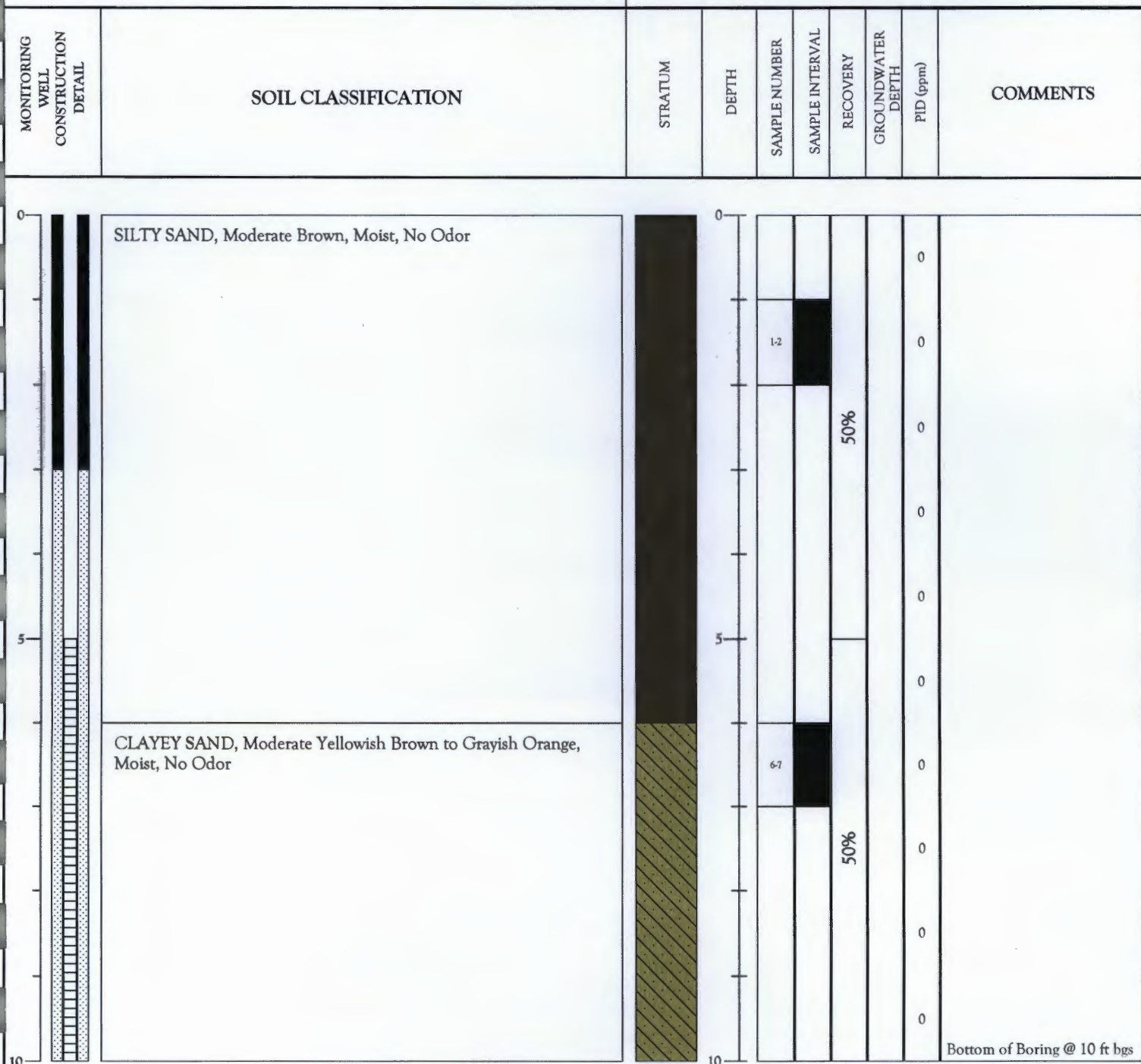
Date Started: 4/12/2013
 Date Completed: 4/12/2013
 Drilling Company: Kyvek
 Driller: Kelly Padia
 Boring Method: Hollow Stem Auger
 Geologist: K. Summers
 Bore Hole Diameter: 8"
 Sampler Type: NA

GROUNDWATER DEPTH

☒ Depth at Completion
 ☒ Depth at Stabilization

WELL CONSTRUCTION INFORMATION

Well Diameter: 2"
 Screen Size: 0.010"
 Screen Length: 10'
 Casing Length: 15'
 Surface Completion: Above Ground



NOTE: This log is not to be used outside the original report.

MONITORING WELL/SOIL BORING LOG

Soil Boring Number: P-5
Project Number: 0413G002
Drawn By: RDH
Approved by: KS

- Depth at Completion
- Depth at Stabilization

Well Diameter:	2"
Screen Size:	0.010"
Screen Length:	10'
Casing Length:	15'
Surface Completion:	Above Ground

MONITORING WELL CONSTRUCTION DETAIL

SOIL CLASSIFICATION

STRATUM

DEPTH

SAMPLE NUMBER

SAMPLE INTERVAL

RECOVERY

OUNDWAT

COMMENTS

SILTY SAND, Moderate Brown, Moist, No Odor

SANDY CLAY, Moderate Yellowish Brown to Pale Yellowish Brown, Moist, No Odor

CLAYEY SAND, Moderate Yellowish Brown to Pinkish Gray,
Moist, No Odor

0-1

1

50%

50%

Bottom of Boring @ 10 ft bgs

NOTE: This log is not to be used outside the original report.

Southwest GEOSCIENCE

MONITORING WELL/SOIL BORING LOG

DRILLING & SAMPLING INFORMATION

WELL CONSTRUCTION INFORMATION

GROUNDWATER DEPTH

- Depth at Completion
- Depth at Stabilization

Well Diameter:	2"
Screen Size:	0.010"
Screen Length:	10'
Casing Length:	15'
Surface Completion:	Above Ground

NOTE: This log is not to be used outside the original report.

Client: Enterprise Field Services
 Project: Federal 2E #1 Pipeline Release
 Project Location: San Juan County, NM
 Project Manager: K. Summers

DRILLING & SAMPLING INFORMATION

Date Started: 4/12/2013
 Date Completed: 4/12/2013
 Drilling Company: Kyvek
 Driller: Kelly Padia
 Boring Method: Hollow Stem Auger
 Geologist: K. Summers
 Bore Hole Diameter: 8"
 Sampler Type: NA

GROUNDWATER DEPTH

☒ Depth at Completion
 ☒ Depth at Stabilization

SOIL BORING LOG

Soil Boring Number: SB-7
 Project Number: 0413G002
 Drawn By: RDH
 Approved by: KS

WELL CONSTRUCTION INFORMATION

Well Diameter: NA
 Screen Size: NA
 Screen Length: NA
 Casing Length: NA
 Surface Completion: NA

MONITORING WELL CONSTRUCTION DETAIL	SOIL CLASSIFICATION	STRATUM	DEPTH	SAMPLE NUMBER	SAMPLE INTERVAL	RECOVERY	GROUNDWATER DEPTH	PID (ppm)	COMMENTS
	SILTY SAND, Moderate Brown, Moist, No Odor		0	0-1		50%		3	
								3	
								3	
								3	
								4	
			5	4-5		50%		1	
								1	
								1	
								1	
								1	
			10			50%		4	
								7	
								6	
								5	
								4	
			15			50%		6	
								8	
								11	
								57	
			20	19-20		50%		83	
								26	
								15	
								18	
								10	
								18	
			25						Bottom of Boring @ 25 ft bgs

NOTE: This log is not to be used outside the original report.

Client: Enterprise Field Services
 Project: Federal 2E #1 Pipeline Release
 Project Location: San Juan County, NM
 Project Manager: K. Summers

MONITORING WELL/SOIL BORING LOG

Soil Boring Number: MW-8
 Project Number: 0413G002
 Drawn By: RDH
 Approved by: KS

DRILLING & SAMPLING INFORMATION

Date Started: 4/13/2013
 Date Completed: 4/13/2013
 Drilling Company: Kyvek
 Driller: Kelly Padia
 Boring Method: Hollow Stem Auger
 Geologist: K. Summers
 Bore Hole Diameter: 8"
 Sampler Type: NA

GROUNDWATER DEPTH

✕ Depth at Completion
 ✕ Depth at Stabilization

WELL CONSTRUCTION INFORMATION

Well Diameter: 2"
 Screen Size: 0.010"
 Screen Length: 10'
 Casing Length: 15'
 Surface Completion: Above Ground

MONITORING
WELL
CONSTRUCTION
DETAIL

SOIL CLASSIFICATION

STRATUM

DEPTH

SAMPLE NUMBER

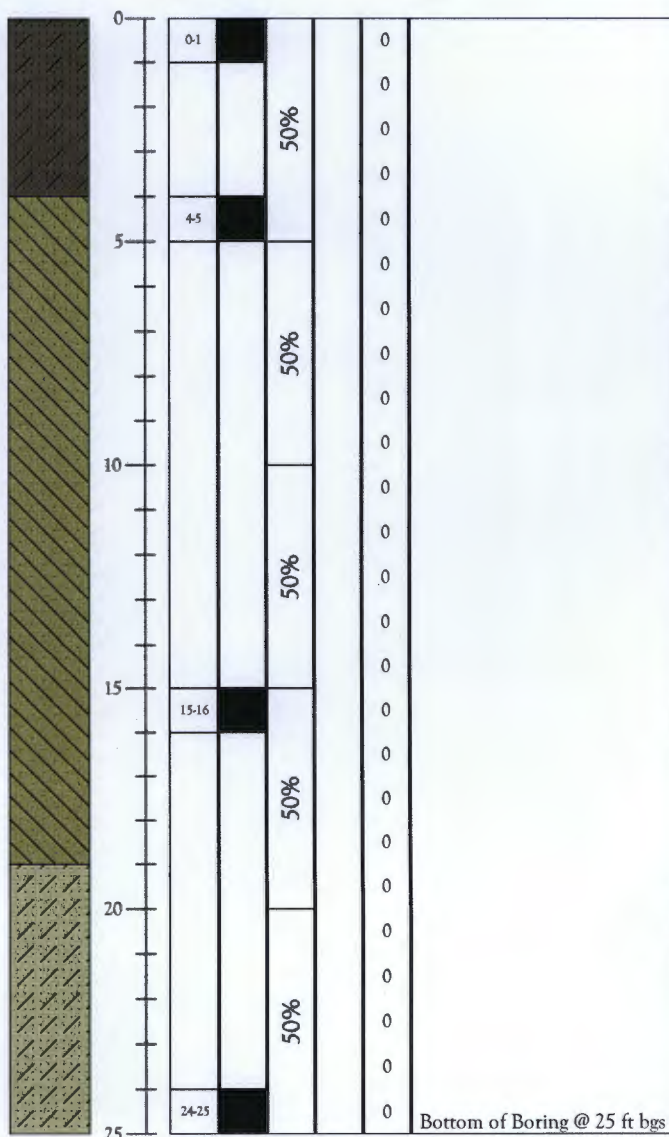
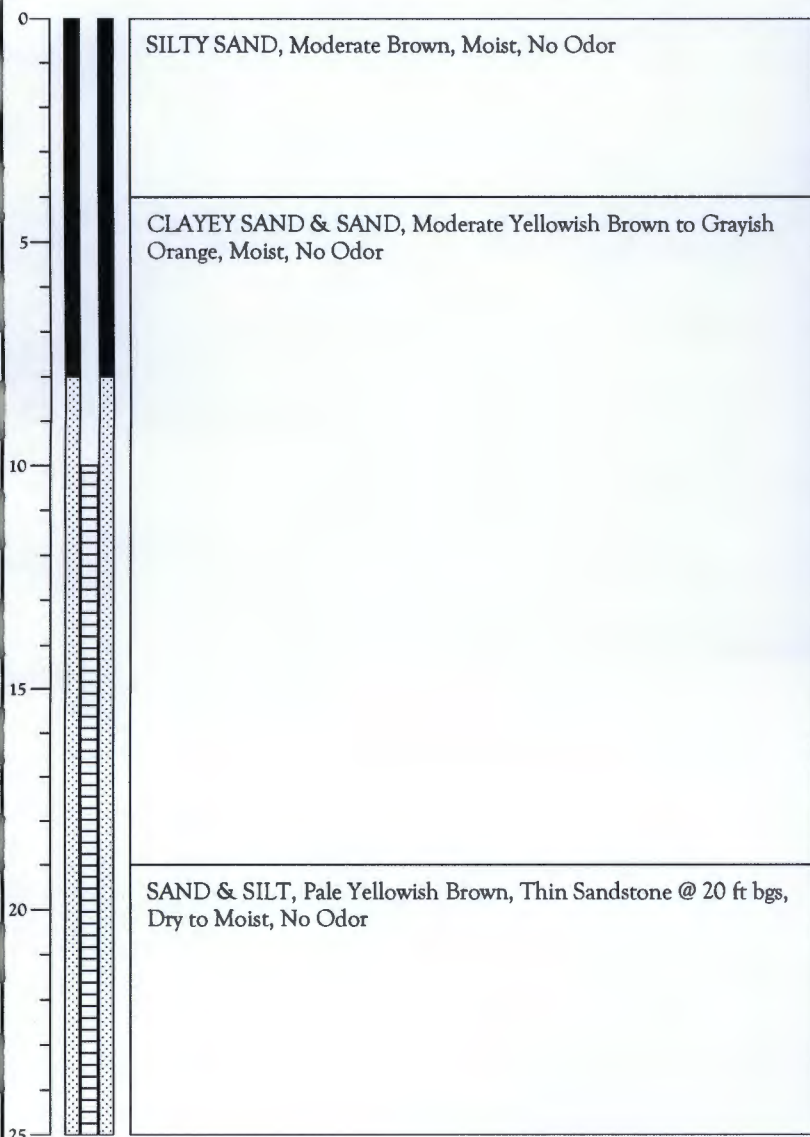
SAMPLE INTERVAL

RECOVERY

GROUNDWATER
DEPTH

PID (ppm)

COMMENTS



NOTE: This log is not to be used outside the original report.

Southwest
GEOSCIENCE

MONITORING WELL/SOIL BORING LOG

WELL CONSTRUCTION INFORMATION

Well Diameter:	2"
Screen Size:	0.010"
Screen Length:	10'
Casing Length:	15'
Surface Completion:	Above Ground

Date Started:	4/13/2013
Date Completed:	4/13/2013
Drilling Company:	Kyvek
Driller:	Kelly Padia
Boring Method:	Hollow Stem Auger
Geologist:	K. Summers
Bore Hole Diamter:	8"
Sampler Type:	NA

GROUNDWATER DEPTH

- Depth at Completion
- Depth at Stabilization

NOTE: This log is not to be used outside the original report.

Client: Enterprise Field Services
 Project: Federal 2E #1 Pipeline Release
 Project Location: San Juan County, NM
 Project Manager: K. Summers

MONITORING WELL/SOIL BORING LOG

Soil Boring Number: MW-10
 Project Number: 0413G002
 Drawn By: RDH
 Approved by: KS

DRILLING & SAMPLING INFORMATION

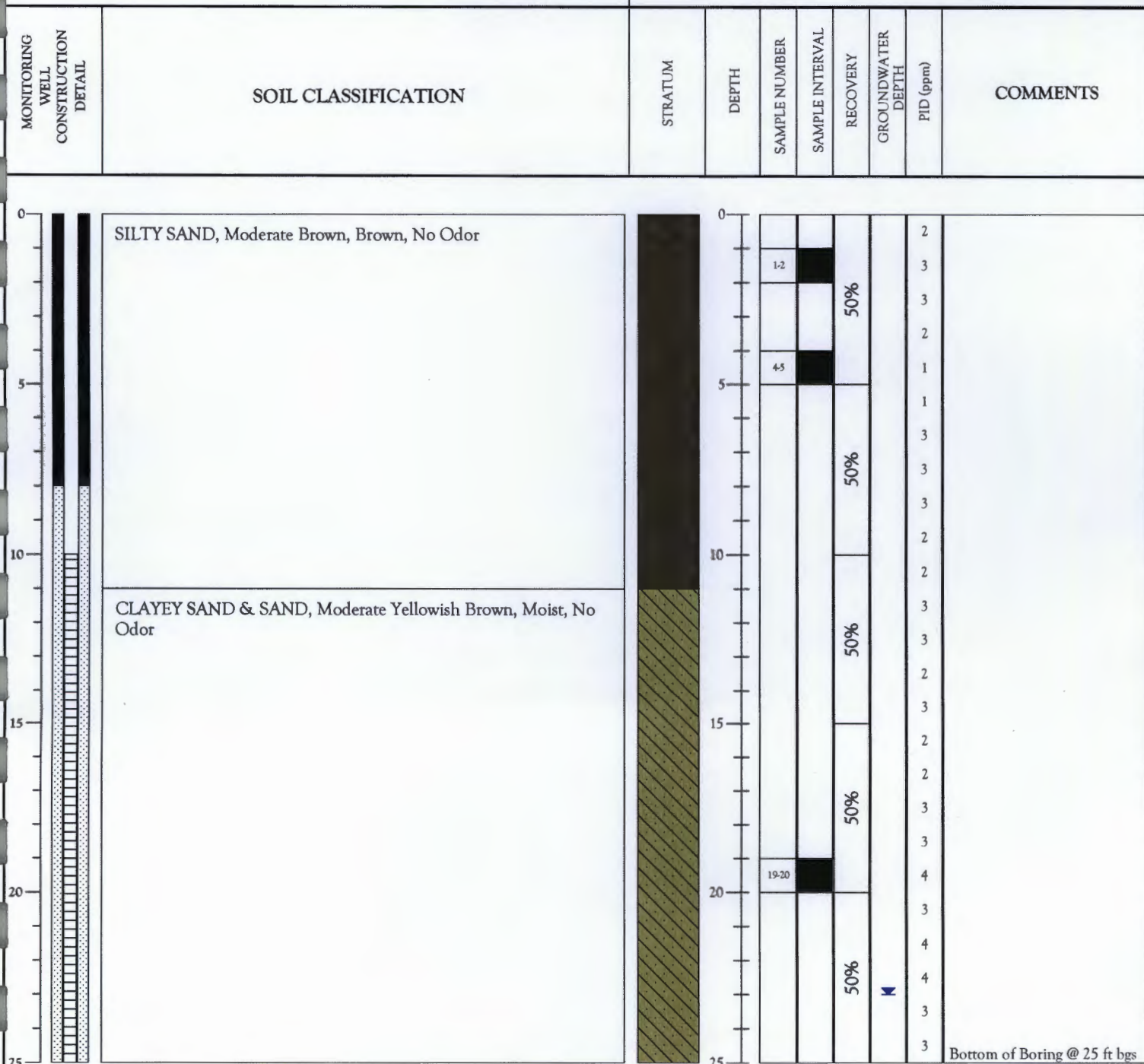
Date Started: 4/13/2013
 Date Completed: 4/13/2013
 Drilling Company: Kyvek
 Driller: Kelly Padia
 Boring Method: Hollow Stem Auger
 Geologist: K. Summers
 Bore Hole Diameter: 8"
 Sampler Type: NA

GROUNDWATER DEPTH

▼ Depth at Completion
 ▼ Depth at Stabilization

WELL CONSTRUCTION INFORMATION

Well Diameter: 2"
 Screen Size: 0.010"
 Screen Length: 10'
 Casing Length: 15'
 Surface Completion: Above Ground



NOTE: This log is not to be used outside the original report.

Client: Enterprise Field Services
 Project: Federal 2E #1 Pipeline Release
 Project Location: San Juan County, NM
 Project Manager: K. Summers

MONITORING WELL/SOIL BORING LOG

Soil Boring Number: MW-11
 Project Number: 0413G002
 Drawn By: RDH
 Approved by: KS

DRILLING & SAMPLING INFORMATION

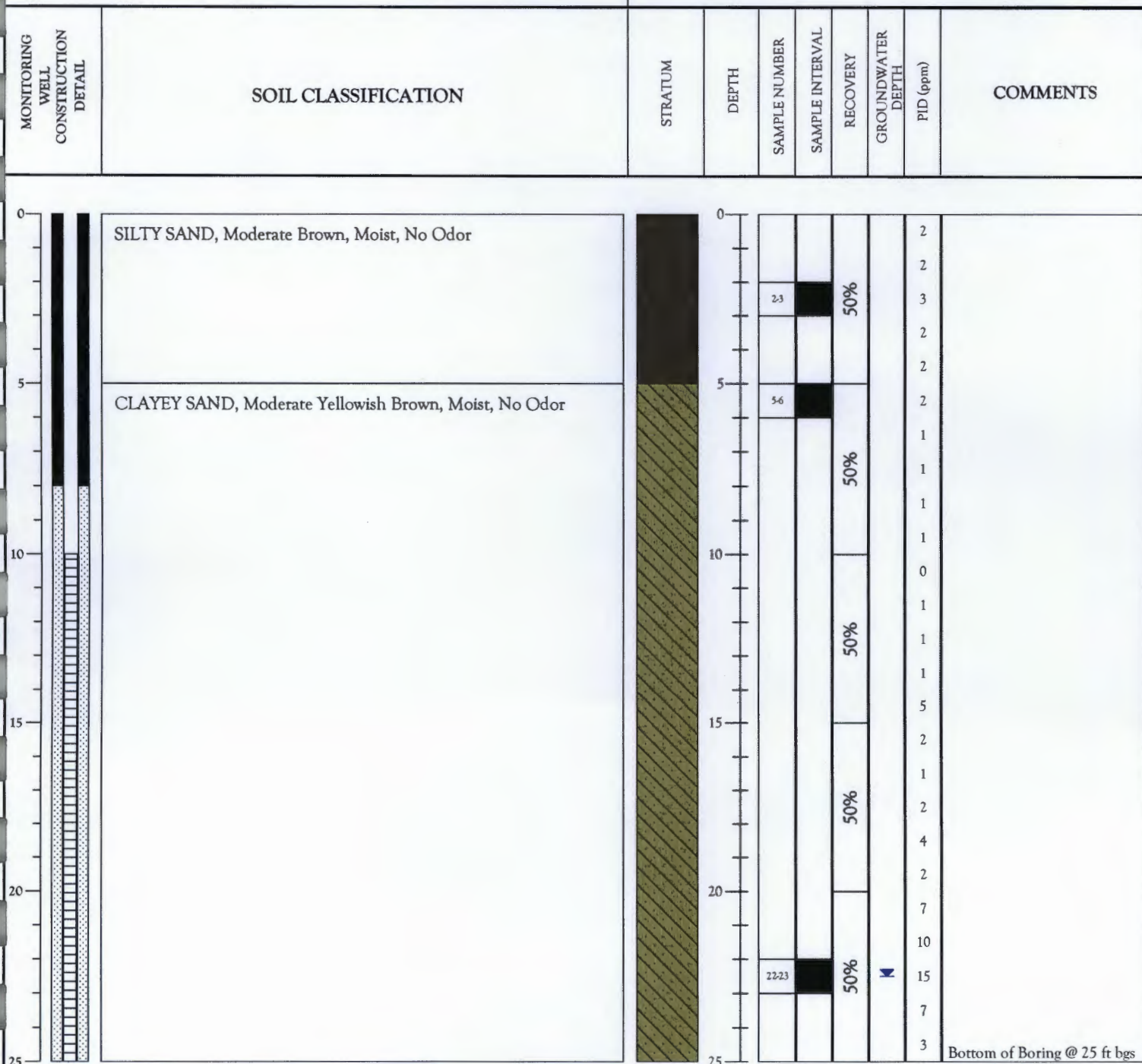
Date Started: 4/13/2013
 Date Completed: 4/13/2013
 Drilling Company: Kyvek
 Driller: Kelly Padia
 Boring Method: Hollow Stem Auger
 Geologist: K. Summers
 Bore Hole Diameter: 8"
 Sampler Type: NA

GROUNDWATER DEPTH

☒ Depth at Completion
 ☒ Depth at Stabilization

WELL CONSTRUCTION INFORMATION

Well Diameter: 2"
 Screen Size: 0.010"
 Screen Length: 10'
 Casing Length: 15'
 Surface Completion: Above Ground



NOTE: This log is not to be used outside the original report.

TABLE 1
Federal 2E # 1
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100	
MW-1	4/11/2013	2	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<10
MW-1	4/11/2013	7	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<9.9
MW-1	4/11/2013	15	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-2	4/11/2013	2	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-2	4/11/2013	5	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-2	4/11/2013	17	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<9.9
MW-3	4/11/2013	1	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
MW-3	4/11/2013	5	<0.047	<0.047	<0.047	<0.093	ND	<4.7	<10
MW-3	4/11/2013	15	<0.048	<0.048	<0.048	<0.097	ND	<4.8	<10
P-4	4/12/2013	2	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<10
P-4	4/12/2013	7	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
P-5	4/12/2013	1	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
P-5	4/12/2013	8	<0.047	<0.047	<0.047	<0.094	ND	<4.7	<10
MW-6	4/12/2013	3	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<9.9
MW-6	4/12/2013	9	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-6	4/12/2013	25	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<10
SB-7	4/12/2013	1	<0.047	<0.047	<0.047	<0.094	ND	<4.7	<10
SB-7	4/12/2013	5	<0.048	<0.048	<0.048	<0.096	ND	<4.8	<10
SB-7	4/12/2013	20	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<9.9
MW-8	4/13/2013	1	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<9.9
MW-8	4/13/2013	5	<0.047	<0.047	<0.047	<0.094	ND	<4.7	<10
MW-8	4/13/2013	16	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<10
MW-8	4/13/2013	25	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-9	4/13/2013	1	<0.046	<0.046	<0.046	<0.092	ND	<4.6	<10
MW-9	4/13/2013	5	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<10
MW-9	4/13/2013	22	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<10

TABLE 1
Federal 2E #1
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			10	NE	NE	NE	50	100	
MW-10	4/13/2013	2	<0.047	<0.047	<0.047	<0.093	ND	<4.7	<10
MW-10	4/13/2013	5	<0.048	<0.048	<0.048	<0.095	ND	<4.8	<10
MW-10	4/13/2013	20	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<10
MW-11	4/13/2013	3	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<10
MW-11	4/13/2013	6	<0.046	<0.046	<0.046	<0.093	ND	<4.6	<10
MW-11	4/13/2013	23	<0.047	<0.047	<0.047	<0.095	ND	<4.7	<9.9

NE = Not Established

TABLE 2
Federal 2E. #1
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10	750	750	620	NE	NE
MW-1	4/17/2013	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-2	4/18/2013	330	41	2.5	45	1.4	<1.0
MW-3	4/18/2013	<1.0	<1.0	<1.0	<2.0	0.093	<1.0
MW-6	4/18/2013	230	<1.0	<1.0	<2.0	2.3	<1.0
MW-8	4/18/2013	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-9	4/18/2013	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-10	4/18/2013	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
MW-11	4/18/2013	560	<1.0	<1.0	79	1.9	<1.0

NE = Not Established

Bold and yellow highlights indicate concentrations in excess of applicable regulatory limits

TABLE 3
Federal 2E #1
Groundwater Elevations

Monitoring Well ID	Measurement Date	Top-of-Casing Elevation (feet)	Depth to PSH (feet)	Depth to Water (feet)	PSH Thickness (feet)	Corrected Groundwater Elevation ¹
MW-1	4.18.13	5947.56	ND	17.90	0.0	5929.66
MW-2	4.18.13	5947.13	ND	19.47	0.0	5927.66
MW-3	4.18.13	5947.99	ND	19.91	0.0	5928.08
P-4	4.18.13	5947.92	ND	dry		NA
P-5	4.18.13	5947.46	ND	dry		NA
MW-6	4.18.13	5946.23	ND	20.88	0.0	5925.35
MW-8	4.18.13	5947.99	ND	17.06	0.0	5930.93
MW-9	4.18.13	5949.04	ND	20.13	0.0	5928.91
MW-10	4.18.13	5947.14	ND	22.61	0.0	5924.53
MW-11	4.18.13	5945.73	ND	22.60	0.0	5923.13

NA - Not Applicable

ND - Not Detected



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

April 30, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX (214) 350-2914

RE: Fed 2E #1

OrderNo.: 1304702

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 32 sample(s) on 4/17/2013 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. 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. 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.

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-1 (2')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 4:30:00 PM**Lab ID:** 1304702-001**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 2:27:09 PM
Surr: DNOP	106	63-147		%REC	1	4/19/2013 2:27:09 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2013 12:22:23 PM
Surr: BFB	88.1	80-120		%REC	1	4/23/2013 12:22:23 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/23/2013 12:22:23 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2013 12:22:23 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2013 12:22:23 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2013 12:22:23 PM
Surr: 4-Bromofluorobenzene	99.7	80-120		%REC	1	4/23/2013 12:22:23 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-1(7')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 4:35:00 PM**Lab ID:** 1304702-002**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 4:19:04 PM
Surr: DNOP	99.8	63-147		%REC	1	4/19/2013 4:19:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/23/2013 12:50:59 PM
Surr: BFB	89.5	80-120		%REC	1	4/23/2013 12:50:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/23/2013 12:50:59 PM
Toluene	ND	0.046		mg/Kg	1	4/23/2013 12:50:59 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/23/2013 12:50:59 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/23/2013 12:50:59 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/23/2013 12:50:59 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-1(15')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 5:00:00 PM**Lab ID:** 1304702-003**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 4:40:38 PM
Surr: DNOP	99.7	63-147		%REC	1	4/19/2013 4:40:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/23/2013 1:19:40 PM
Surr: BFB	90.6	80-120		%REC	1	4/23/2013 1:19:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/23/2013 1:19:40 PM
Toluene	ND	0.046		mg/Kg	1	4/23/2013 1:19:40 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/23/2013 1:19:40 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/23/2013 1:19:40 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/23/2013 1:19:40 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-2 (2')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 2:30:00 PM**Lab ID:** 1304702-004**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 5:02:18 PM
Surr: DNOP	101	63-147		%REC	1	4/19/2013 5:02:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/23/2013 1:48:22 PM
Surr: BFB	91.0	80-120		%REC	1	4/23/2013 1:48:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/23/2013 1:48:22 PM
Toluene	ND	0.046		mg/Kg	1	4/23/2013 1:48:22 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/23/2013 1:48:22 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/23/2013 1:48:22 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/23/2013 1:48:22 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-2 (5')

Project: Fed 2E #1

Collection Date: 4/11/2013 2:45:00 PM

Lab ID: 1304702-005

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 5:23:52 PM
Surr: DNOP	105	63-147		%REC	1	4/19/2013 5:23:52 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/23/2013 2:17:09 PM
Surr: BFB	90.3	80-120		%REC	1	4/23/2013 2:17:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/23/2013 2:17:09 PM
Toluene	ND	0.046		mg/Kg	1	4/23/2013 2:17:09 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/23/2013 2:17:09 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/23/2013 2:17:09 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/23/2013 2:17:09 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-2 (17')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 3:00:00 PM**Lab ID:** 1304702-006**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 5:45:32 PM
Surr: DNOP	105	63-147		%REC	1	4/19/2013 5:45:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/23/2013 6:35:16 PM
Surr: BFB	93.2	80-120		%REC	1	4/23/2013 6:35:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/23/2013 6:35:16 PM
Toluene	ND	0.048		mg/Kg	1	4/23/2013 6:35:16 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2013 6:35:16 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/23/2013 6:35:16 PM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/23/2013 6:35:16 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-3 (1')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 8:30:00 AM**Lab ID:** 1304702-007**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 6:07:08 PM
Surr: DNOP	109	63-147		%REC	1	4/19/2013 6:07:08 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/23/2013 7:03:56 PM
Surr: BFB	89.0	80-120		%REC	1	4/23/2013 7:03:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/23/2013 7:03:56 PM
Toluene	ND	0.048		mg/Kg	1	4/23/2013 7:03:56 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2013 7:03:56 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/23/2013 7:03:56 PM
Surr: 4-Bromofluorobenzene	99.4	80-120		%REC	1	4/23/2013 7:03:56 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-3 (5')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 9:00:00 AM**Lab ID:** 1304702-008**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 6:28:54 PM
Surr: DNOP	112	63-147		%REC	1	4/19/2013 6:28:54 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2013 7:32:33 PM
Surr: BFB	89.4	80-120		%REC	1	4/23/2013 7:32:33 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/23/2013 7:32:33 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2013 7:32:33 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2013 7:32:33 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/23/2013 7:32:33 PM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/23/2013 7:32:33 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-3(15')**Project:** Fed 2E #1**Collection Date:** 4/11/2013 9:30:00 AM**Lab ID:** 1304702-009**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 6:50:28 PM
Surr: DNOP	102	63-147		%REC	1	4/19/2013 6:50:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/23/2013 8:01:18 PM
Surr: BFB	90.2	80-120		%REC	1	4/23/2013 8:01:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/23/2013 8:01:18 PM
Toluene	ND	0.048		mg/Kg	1	4/23/2013 8:01:18 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/23/2013 8:01:18 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/23/2013 8:01:18 PM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/23/2013 8:01:18 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order **1304702**

Date Reported: **4/30/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: P-4 (2')

Project: Fed 2E #1

Collection Date: 4/12/2013 10:50:00 AM

Lab ID: 1304702-010

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 7:12:07 PM
Surr: DNOP	105	63-147		%REC	1	4/19/2013 7:12:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/23/2013 8:29:53 PM
Surr: BFB	89.2	80-120		%REC	1	4/23/2013 8:29:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/23/2013 8:29:53 PM
Toluene	ND	0.047		mg/Kg	1	4/23/2013 8:29:53 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/23/2013 8:29:53 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/23/2013 8:29:53 PM
Surr: 4-Bromofluorobenzene	99.2	80-120		%REC	1	4/23/2013 8:29:53 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** P-4 (7')**Project:** Fed 2E #1**Collection Date:** 4/12/2013 11:00:00 AM**Lab ID:** 1304702-011**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 7:55:27 PM
Surr: DNOP	100	63-147		%REC	1	4/19/2013 7:55:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 12:47:46 AM
Surr: BFB	89.0	80-120		%REC	1	4/24/2013 12:47:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 12:47:46 AM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 12:47:46 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 12:47:46 AM
Xylenes, Total	ND	0.092		mg/Kg	1	4/24/2013 12:47:46 AM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/24/2013 12:47:46 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: P-5 (1')

Project: Fed 2E #1

Collection Date: 4/12/2013 12:00:00 PM

Lab ID: 1304702-012

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 8:17:06 PM
Surr: DNOP	107	63-147		%REC	1	4/19/2013 8:17:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/24/2013 1:16:19 AM
Surr: BFB	88.9	80-120		%REC	1	4/24/2013 1:16:19 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/24/2013 1:16:19 AM
Toluene	ND	0.048		mg/Kg	1	4/24/2013 1:16:19 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/24/2013 1:16:19 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/24/2013 1:16:19 AM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/24/2013 1:16:19 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** P-5 (8')**Project:** Fed 2E #1**Collection Date:** 4/12/2013 12:05:00 PM**Lab ID:** 1304702-013**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 8:38:47 PM
Surr: DNOP	110	63-147		%REC	1	4/19/2013 8:38:47 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 1:44:52 AM
Surr: BFB	90.2	80-120		%REC	1	4/24/2013 1:44:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 1:44:52 AM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 1:44:52 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 1:44:52 AM
Xylenes, Total	ND	0.094		mg/Kg	1	4/24/2013 1:44:52 AM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/24/2013 1:44:52 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-6 (3')**Project:** Fed 2E #1**Collection Date:** 4/12/2013 1:30:00 PM**Lab ID:** 1304702-014**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 9:00:23 PM
Surr: DNOP	101	63-147		%REC	1	4/19/2013 9:00:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/24/2013 2:13:38 AM
Surr: BFB	90.8	80-120		%REC	1	4/24/2013 2:13:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/24/2013 2:13:38 AM
Toluene	ND	0.048		mg/Kg	1	4/24/2013 2:13:38 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/24/2013 2:13:38 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/24/2013 2:13:38 AM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/24/2013 2:13:38 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-6 (9')

Project: Fed 2E #1

Collection Date: 4/12/2013 1:35:00 PM

Lab ID: 1304702-015

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 9:22:01 PM
Surr: DNOP	108	63-147		%REC	1	4/19/2013 9:22:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 2:42:16 AM
Surr: BFB	90.3	80-120		%REC	1	4/24/2013 2:42:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 2:42:16 AM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 2:42:16 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 2:42:16 AM
Xylenes, Total	ND	0.092		mg/Kg	1	4/24/2013 2:42:16 AM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/24/2013 2:42:16 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-6 (25')**Project:** Fed 2E #1**Collection Date:** 4/12/2013 2:10:00 PM**Lab ID:** 1304702-016**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 9:43:37 PM
Surr: DNOP	102	63-147		%REC	1	4/19/2013 9:43:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 3:10:56 AM
Surr: BFB	90.6	80-120		%REC	1	4/24/2013 3:10:56 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 3:10:56 AM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 3:10:56 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 3:10:56 AM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 3:10:56 AM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/24/2013 3:10:56 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: SB-7 (1')

Project: Fed 2E #1

Collection Date: 4/12/2013 3:40:00 PM

Lab ID: 1304702-017

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 10:05:24 PM
Surr: DNOP	109	63-147		%REC	1	4/19/2013 10:05:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 8:07:15 AM
Surr: BFB	89.0	80-120		%REC	1	4/24/2013 8:07:15 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 8:07:15 AM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 8:07:15 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 8:07:15 AM
Xylenes, Total	ND	0.094		mg/Kg	1	4/24/2013 8:07:15 AM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/24/2013 8:07:15 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** SB-7 (5')**Project:** Fed 2E #1**Collection Date:** 4/12/2013 3:50:00 PM**Lab ID:** 1304702-018**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/19/2013 10:27:04 PM
Surr: DNOP	109	63-147		%REC	1	4/19/2013 10:27:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/24/2013 2:03:25 PM
Surr: BFB	87.9	80-120		%REC	1	4/24/2013 2:03:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/24/2013 2:03:25 PM
Toluene	ND	0.048		mg/Kg	1	4/24/2013 2:03:25 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/24/2013 2:03:25 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/24/2013 2:03:25 PM
Surr: 4-Bromofluorobenzene	97.8	80-120		%REC	1	4/24/2013 2:03:25 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: SB-7 (20')

Project: Fed 2E #1

Collection Date: 4/12/2013 4:20:00 PM

Lab ID: 1304702-019

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 10:48:45 PM
Surr: DNOP	102	63-147		%REC	1	4/19/2013 10:48:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 2:32:05 PM
Surr: BFB	89.8	80-120		%REC	1	4/24/2013 2:32:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 2:32:05 PM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 2:32:05 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 2:32:05 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/24/2013 2:32:05 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/24/2013 2:32:05 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Southwest Geoscience

Client Sample ID: MW-8 (1')

Project: Fed 2E #1

Collection Date: 4/13/2013 8:40:00 AM

Lab ID: 1304702-020

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/19/2013 11:32:07 PM
Surr: DNOP	108	63-147		%REC	1	4/19/2013 11:32:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 3:00:47 PM
Surr: BFB	90.4	80-120		%REC	1	4/24/2013 3:00:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 3:00:47 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 3:00:47 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 3:00:47 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 3:00:47 PM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/24/2013 3:00:47 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-8 (5')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 8:50:00 AM**Lab ID:** 1304702-021**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 12:37:00 AM
Surr: DNOP	105	63-147		%REC	1	4/20/2013 12:37:00 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 3:29:21 PM
Surr: BFB	90.8	80-120		%REC	1	4/24/2013 3:29:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 3:29:21 PM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 3:29:21 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 3:29:21 PM
Xylenes, Total	ND	0.094		mg/Kg	1	4/24/2013 3:29:21 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/24/2013 3:29:21 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-8 (16')

Project: Fed 2E #1

Collection Date: 4/13/2013 9:20:00 AM

Lab ID: 1304702-022

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 12:58:41 AM
Surr: DNOP	104	63-147		%REC	1	4/20/2013 12:58:41 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 3:57:56 PM
Surr: BFB	90.0	80-120		%REC	1	4/24/2013 3:57:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 3:57:56 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 3:57:56 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 3:57:56 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 3:57:56 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/24/2013 3:57:56 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-8 (25')

Project: Fed 2E #1

Collection Date: 4/13/2013 9:30:00 AM

Lab ID: 1304702-023

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 1:20:17 AM
Surr: DNOP	103	63-147		%REC	1	4/20/2013 1:20:17 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 4:26:38 PM
Surr: BFB	89.5	80-120		%REC	1	4/24/2013 4:26:38 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 4:26:38 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 4:26:38 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 4:26:38 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/24/2013 4:26:38 PM
Surr: 4-Bromofluorobenzene	99.7	80-120		%REC	1	4/24/2013 4:26:38 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-9 (1')

Project: Fed 2E #1

Collection Date: 4/13/2013 10:45:00 AM

Lab ID: 1304702-024

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 1:42:01 AM
Surr: DNOP	107	63-147		%REC	1	4/20/2013 1:42:01 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 4:55:22 PM
Surr: BFB	90.3	80-120		%REC	1	4/24/2013 4:55:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 4:55:22 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 4:55:22 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 4:55:22 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/24/2013 4:55:22 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/24/2013 4:55:22 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-9 (5')

Project: Fed 2E #1

Collection Date: 4/13/2013 11:00:00 AM

Lab ID: 1304702-025

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 2:03:43 AM
Surr: DNOP	101	63-147		%REC	1	4/20/2013 2:03:43 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 5:24:00 PM
Surr: BFB	89.4	80-120		%REC	1	4/24/2013 5:24:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 5:24:00 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 5:24:00 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 5:24:00 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 5:24:00 PM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/24/2013 5:24:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-9 (22')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 11:30:00 AM**Lab ID:** 1304702-026**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 2:47:06 AM
Surr: DNOP	103	63-147		%REC	1	4/20/2013 2:47:06 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/24/2013 5:52:42 PM
Surr: BFB	90.1	80-120		%REC	1	4/24/2013 5:52:42 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/24/2013 5:52:42 PM
Toluene	ND	0.048		mg/Kg	1	4/24/2013 5:52:42 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/24/2013 5:52:42 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/24/2013 5:52:42 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/24/2013 5:52:42 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-10 (2')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 1:10:00 PM**Lab ID:** 1304702-027**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 3:08:46 AM
Surr: DNOP	105	63-147		%REC	1	4/20/2013 3:08:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 10:10:24 PM
Surr: BFB	88.0	80-120		%REC	1	4/24/2013 10:10:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 10:10:24 PM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 10:10:24 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 10:10:24 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 10:10:24 PM
Surr: 4-Bromofluorobenzene	97.9	80-120		%REC	1	4/24/2013 10:10:24 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-10 (5')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 1:20:00 PM**Lab ID:** 1304702-028**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 3:30:28 AM
Surr: DNOP	104	63-147		%REC	1	4/20/2013 3:30:28 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/24/2013 10:39:03 PM
Surr: BFB	88.0	80-120		%REC	1	4/24/2013 10:39:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	4/24/2013 10:39:03 PM
Toluene	ND	0.048		mg/Kg	1	4/24/2013 10:39:03 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/24/2013 10:39:03 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/24/2013 10:39:03 PM
Surr: 4-Bromofluorobenzene	98.9	80-120		%REC	1	4/24/2013 10:39:03 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-10 (20')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 1:50:00 PM**Lab ID:** 1304702-029**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 3:52:16 AM
Surr: DNOP	104	63-147		%REC	1	4/20/2013 3:52:16 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/24/2013 11:07:36 PM
Surr: BFB	88.6	80-120		%REC	1	4/24/2013 11:07:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/24/2013 11:07:36 PM
Toluene	ND	0.046		mg/Kg	1	4/24/2013 11:07:36 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/24/2013 11:07:36 PM
Xylenes, Total	ND	0.093		mg/Kg	1	4/24/2013 11:07:36 PM
Surr: 4-Bromofluorobenzene	99.3	80-120		%REC	1	4/24/2013 11:07:36 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304702**Date Reported: **4/30/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-11 (3')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 3:35:00 PM**Lab ID:** 1304702-030**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 4:14:02 AM
Surr: DNOP	105	63-147		%REC	1	4/20/2013 4:14:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/24/2013 11:36:11 PM
Surr: BFB	89.3	80-120		%REC	1	4/24/2013 11:36:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/24/2013 11:36:11 PM
Toluene	ND	0.047		mg/Kg	1	4/24/2013 11:36:11 PM
Ethylbenzene	ND	0.047		mg/Kg	1	4/24/2013 11:36:11 PM
Xylenes, Total	ND	0.095		mg/Kg	1	4/24/2013 11:36:11 PM
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/24/2013 11:36:11 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-11 (6')**Project:** Fed 2E #1**Collection Date:** 4/13/2013 3:40:00 PM**Lab ID:** 1304702-031**Matrix:** SOIL**Received Date:** 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2013 4:35:52 AM
Surr: DNOP	105	63-147		%REC	1	4/20/2013 4:35:52 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/25/2013 12:04:42 AM
Surr: BFB	90.7	80-120		%REC	1	4/25/2013 12:04:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.046		mg/Kg	1	4/25/2013 12:04:42 AM
Toluene	ND	0.046		mg/Kg	1	4/25/2013 12:04:42 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/25/2013 12:04:42 AM
Xylenes, Total	ND	0.093		mg/Kg	1	4/25/2013 12:04:42 AM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	4/25/2013 12:04:42 AM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304702

Date Reported: 4/30/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-11 (23')

Project: Fed 2E #1

Collection Date: 4/13/2013 4:10:00 PM

Lab ID: 1304702-032

Matrix: SOIL

Received Date: 4/17/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: GSA
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/20/2013 4:57:33 AM
Surr: DNOP	105	63-147		%REC	1	4/20/2013 4:57:33 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/25/2013 12:33:26 AM
Surr: BFB	90.3	80-120		%REC	1	4/25/2013 12:33:26 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.047		mg/Kg	1	4/25/2013 12:33:26 AM
Toluene	ND	0.047		mg/Kg	1	4/25/2013 12:33:26 AM
Ethylbenzene	ND	0.047		mg/Kg	1	4/25/2013 12:33:26 AM
Xylenes, Total	ND	0.095		mg/Kg	1	4/25/2013 12:33:26 AM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	4/25/2013 12:33:26 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	LCS-7056		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	LCSS		Batch ID:	7056		RunNo:	9993			
Prep Date:	4/18/2013		Analysis Date:	4/19/2013		SeqNo:	284769		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.9	47.4	122			
Surr: DNOP	5.7		5.000		114	63	147			

Sample ID	MB-7056		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	7056		RunNo:	9993			
Prep Date:	4/18/2013		Analysis Date:	4/19/2013		SeqNo:	284770		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	9.8		10.00		98.4	63	147			

Sample ID	MB-7029		SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	PBS		Batch ID:	7029		RunNo:	9993			
Prep Date:	4/17/2013		Analysis Date:	4/19/2013		SeqNo:	284815		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	12		10.00		119	63	147			

Sample ID	LCS-7029		SampType:	LCS		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	LCSS		Batch ID:	7029		RunNo:	9993			
Prep Date:	4/17/2013		Analysis Date:	4/19/2013		SeqNo:	284933		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	108	47.4	122			
Surr: DNOP	5.9		5.000		118	63	147			

Sample ID	1304702-001AMS		SampType:	MS		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	MW-1 (2')		Batch ID:	7029		RunNo:	9993			
Prep Date:	4/17/2013		Analysis Date:	4/19/2013		SeqNo:	284934		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	49.95	0	109	12.6	148			
Surr: DNOP	5.8		4.995		116	63	147			

Sample ID	1304702-020AMS		SampType:	MS		TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	MW-8 (1')		Batch ID:	7056		RunNo:	9993			
Prep Date:	4/18/2013		Analysis Date:	4/19/2013		SeqNo:	285139		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	50.00	0	112	12.6	148			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	1304702-020AMS	SampType:	MS	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	MW-8 (1')	Batch ID:	7056	RunNo:	9993					
Prep Date:	4/18/2013	Analysis Date:	4/19/2013	SeqNo:	285139	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.8		5.000		116	63	147			

Sample ID	1304702-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	MW-1 (2')	Batch ID:	7029	RunNo:	9993					
Prep Date:	4/17/2013	Analysis Date:	4/19/2013	SeqNo:	285140	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	49.80	0	104	12.6	148	4.32	22.5	
Surr: DNOP	5.6		4.980		112	63	147	0	0	

Sample ID	1304702-020AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Diesel Range Organics					
Client ID:	MW-8 (1')	Batch ID:	7056	RunNo:	9993					
Prep Date:	4/18/2013	Analysis Date:	4/20/2013	SeqNo:	285141	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.05	0	110	12.6	148	1.66	22.5	
Surr: DNOP	5.8		5.005		116	63	147	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	MB-7033		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	PBS		Batch ID:	7033		RunNo:	10080			
Prep Date:	4/17/2013		Analysis Date:	4/23/2013		SeqNo:	286972		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	900		1000		90.0	80	120			

Sample ID	LCS-7033		SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	LCSS		Batch ID:	7033		RunNo:	10080			
Prep Date:	4/17/2013		Analysis Date:	4/23/2013		SeqNo:	286973		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	62.6	136			
Surr: BFB	970		1000		97.3	80	120			

Sample ID	MB-7046		SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	PBS		Batch ID:	7046		RunNo:	10080			
Prep Date:	4/18/2013		Analysis Date:	4/23/2013		SeqNo:	286991		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	890		1000		89.4	80	120			

Sample ID	LCS-7046		SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	LCSS		Batch ID:	7046		RunNo:	10080			
Prep Date:	4/18/2013		Analysis Date:	4/23/2013		SeqNo:	286992		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.8	62.6	136			
Surr: BFB	950		1000		95.2	80	120			

Sample ID	1304702-002AMS		SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	MW-1(7')		Batch ID:	7033		RunNo:	10095			
Prep Date:	4/17/2013		Analysis Date:	4/24/2013		SeqNo:	287481		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.6	23.08	0	97.8	70	130			
Surr: BFB	890		923.4		96.8	80	120			

Sample ID	1304702-002AMSD		SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range			
Client ID:	MW-1(7')		Batch ID:	7033		RunNo:	10095			
Prep Date:	4/17/2013		Analysis Date:	4/24/2013		SeqNo:	287482		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.6	23.11	0	99.4	70	130	1.67	22.1	

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	1304702-002AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-1(7')	Batch ID:	7033	RunNo:	10095					
Prep Date:	4/17/2013	Analysis Date:	4/24/2013	SeqNo:	287482	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	890		924.2		96.3	80	120	0	0	

Sample ID	1304702-022AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-8 (16')	Batch ID:	7046	RunNo:	10095					
Prep Date:	4/18/2013	Analysis Date:	4/25/2013	SeqNo:	287488	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.7	23.36	0	95.4	70	130			
Surr: BFB	900		934.6		96.5	80	120			

Sample ID	1304702-022AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-8 (16')	Batch ID:	7046	RunNo:	10095					
Prep Date:	4/18/2013	Analysis Date:	4/25/2013	SeqNo:	287489	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.7	23.36	0	89.7	70	130	6.22	22.1	
Surr: BFB	890		934.6		95.5	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	MB-7033		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	7033		RunNo:	10080			
Prep Date:	4/17/2013		Analysis Date:	4/23/2013		SeqNo:	286997		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	1.0		1.000		101	80	120			

Sample ID	LCS-7033		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	7033		RunNo:	10080			
Prep Date:	4/17/2013		Analysis Date:	4/23/2013		SeqNo:	286998		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	105	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID	MB-7046		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	7046		RunNo:	10080			
Prep Date:	4/18/2013		Analysis Date:	4/23/2013		SeqNo:	287016		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	0.99		1.000		99.2	80	120			

Sample ID	LCS-7046		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	7046		RunNo:	10080			
Prep Date:	4/18/2013		Analysis Date:	4/23/2013		SeqNo:	287017		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	100	80	120			
Toluene	0.99	0.050	1.000	0	98.9	80	120			
Ethylbenzene	0.98	0.050	1.000	0	97.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	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
P Sample pH greater than 2	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#: 1304702

30-Apr-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	1304702-021AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-8 (5')	Batch ID:	7046	RunNo:	10080					
Prep Date:	4/18/2013	Analysis Date:	4/23/2013	SeqNo:	287018	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
3enzene	0.87	0.046	0.9191	0	94.3	67.2	113			
Toluene	0.87	0.046	0.9191	0	94.8	62.1	116			
Ethylbenzene	0.88	0.046	0.9191	0	95.6	67.9	127			
xylenes, Total	2.6	0.092	2.757	0	94.9	60.6	134			
Surr: 4-Bromofluorobenzene	0.97		0.9191		106	80	120			

Sample ID	1304702-021AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-8 (5')	Batch ID:	7046	RunNo:	10080					
Prep Date:	4/18/2013	Analysis Date:	4/23/2013	SeqNo:	287019	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.046	0.9191	0	97.2	67.2	113	3.07	14.3	
Toluene	0.88	0.046	0.9191	0	96.2	62.1	116	1.48	15.9	
Ethylbenzene	0.88	0.046	0.9191	0	96.0	67.9	127	0.470	14.4	
Xylenes, Total	2.6	0.092	2.757	0	95.6	60.6	134	0.717	12.6	
Surr: 4-Bromofluorobenzene	0.98		0.9191		107	80	120	0	0	

Sample ID	1304702-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-1 (2')	Batch ID:	7033	RunNo:	10095					
Prep Date:	4/17/2013	Analysis Date:	4/24/2013	SeqNo:	287508	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.048	0.9579	0	96.1	67.2	113			
Toluene	0.92	0.048	0.9579	0.003884	95.4	62.1	116			
Ethylbenzene	0.91	0.048	0.9579	0	95.1	67.9	127			
Xylenes, Total	2.7	0.096	2.874	0	94.7	60.6	134			
Surr: 4-Bromofluorobenzene	1.0		0.9579		107	80	120			

Sample ID	1304702-001AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-1 (2')	Batch ID:	7033	RunNo:	10095					
Prep Date:	4/17/2013	Analysis Date:	4/24/2013	SeqNo:	287509	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.048	0.9597	0	95.7	67.2	113	0.140	14.3	
Toluene	0.91	0.048	0.9597	0.003884	94.3	62.1	116	0.914	15.9	
Ethylbenzene	0.90	0.048	0.9597	0	94.1	67.9	127	0.837	14.4	
Xylenes, Total	2.7	0.096	2.879	0	94.1	60.6	134	0.434	12.6	
Surr: 4-Bromofluorobenzene	1.0		0.9597		108	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87106
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Southwest Geoscience

Work Order Number: 1304702

RcptNo: 1

Received by/date:

[Signature]

04/17/13

Logged By: Ashley Gallegos

4/17/2013 10:00:00 AM

[Signature]

Completed By: Ashley Gallegos

4/17/2013 1:57:17 PM

[Signature]

Reviewed By:

[Signature]

04/17/13

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? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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 ☐ # of preserved bottles checked for pH: ☐
(<2 or >12 unless noted)
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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

<h2 style="margin: 0;">Southwest GEOSCIENCE</h2> <p style="margin: 0; font-size: small;">Environmental & Hydrogeologic Consultants</p>				<p style="margin: 0; font-size: x-large;">Laboratory: <u>Hall</u></p> <p style="margin: 0; font-size: x-large;">Address: <u>ABQ</u></p> <p style="margin: 0; font-size: x-large;">Contact: <u>Andy Freeman</u></p> <p style="margin: 0; font-size: x-large;">Phone: _____</p> <p style="margin: 0; font-size: x-large;">PO/ISO #: <u>0413G002</u></p> <p style="margin: 0; font-size: x-large;">Sampler's Signature: <u>[Signature]</u></p>				<p style="margin: 0; font-size: x-large;">Office Location: <u>Aztec</u></p> <p style="margin: 0; font-size: x-large;">Project Manager: <u>Summers</u></p> <p style="margin: 0; font-size: x-large;">Sampler's Name: <u>Ryle Summers</u></p>		<p style="margin: 0; font-size: x-large;">Project Name: <u>Fed 2E #1</u></p> <p style="margin: 0; font-size: x-large;">Project No.: <u>0413G002</u></p>		<p style="margin: 0; font-size: x-large;">Analysis Requested: <u>BTEX 8021 TPH CAD/ROD 8015</u></p>		<p style="margin: 0; font-size: x-large;">Lab use only</p> <p style="margin: 0; font-size: x-large;">Due Date: _____</p> <p style="margin: 0; font-size: x-large;">Temp. of coolers when received (C°): <u>1.0</u></p> <p style="margin: 0; font-size: x-large;">1 2 3 4 5</p> <p style="margin: 0; font-size: x-large;">Page <u>1</u> of <u>4</u></p>	
Matrix	Date	Time	Identifying Marks of Sample(s)	No/Type of Containers	VOA	AG	250 ml	P/O	Lab Sample ID (Lab Use Only)						
S	4/11/13	1630	X MW-1 (2')	1 2				1	1304702-13040 -001						
		1635	MW-1 (7')	6 7					-002						
		1700	MW-1 (15')	14 15					-003						
		1430	MW-2 (2')	1 2					-004						
		1445	MW-2 (5')	4 5					-005						
		1500	MW-2 (17')	16 17					-006						
		0830	MW-3 (1')	0 1					-007						
		0900	MW-3 (5')	4 5					-008						
		0930	MW-3 (15')	14 15					-009						
	4/12/13	1050	P-4 (2')	1 2					-010						

<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): <u>[Signature]</u></p> <p style="margin: 0; font-size: x-large;">Date: <u>4/16/13</u> Time: <u>1603</u></p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): <u>[Signature]</u></p> <p style="margin: 0; font-size: x-large;">Date: <u>4/16/13</u> Time: <u>1603</u></p>		<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): <u>[Signature]</u></p> <p style="margin: 0; font-size: x-large;">Date: <u>4/16/13</u> Time: <u>1729</u></p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): <u>[Signature]</u></p> <p style="margin: 0; font-size: x-large;">Date: <u>4/17/13</u> Time: <u>1000</u></p>		<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>	
<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Relinquished by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>		<p style="margin: 0; font-size: x-large;">Received by (Signature): _____</p> <p style="margin: 0; font-size: x-large;">Date: _____ Time: _____</p>	

Matrix Container: WW - Wastewater

VOA - 40 ml vial

W - Water

AG - Amber / Or Glass 1 Liter

S - Soil

SD - Solid

L - Liquid

250 ml - Glass wide mouth

A - Air Bag

P/O - Plastic or other

C - Charcoal tube

SL - sludge

O - Oil

CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE Environmental & Hydrogeologic Consultants Office Location <u>Artec</u>		Laboratory: <u>Nall</u> Address: <u>ABQ</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); position: relative; top: 50px; left: 50px;"> BTEX 8021 TPH GRO/ORD 8015 </div>		Lab use only Due Date:				
		Contact: <u>Freeman</u> Phone: _____ PO/ISO #: <u>04136002</u> Sampler's Signature: <u>[Signature]</u>				Temp. of coolers when received (C°): <u>1.0</u> <div style="display: flex; justify-content: space-around;"> 12345 </div> Page <u>2</u> of <u>4</u>				
Project Manager <u>Summers</u> Sampler's Name <u>Ryle Summers</u>		Project Name <u>Fed 2E #1</u>								
Matrix	Date	Time	Identifying Marks of Sample(s)	Dep't	End	VOA	AVG 1 LI.	250 ml	P/O	Lab Sample ID (Lab Use Only)
S	4/12/13	1100	P-4 (7')	6	7					1304702-011
		1200	P-5 (1')	0	1					-012
		1205	P-5 (8')	7	8					-013
		1330	MW-6 (3')	2	3					-014
		1335	MW-6 (9')	8	9					-015
		1410	MW-6 (25')	24	25					-016
		1540	SB-7 (1')	0	1					-017
		1550	SB-7 (5')	4	5					-018
		1620	SB-7 (20')	19	20					-019
	4/13/13	0840	MW-8 (1')	0	1					-020

Turn around time ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/12/13</u> Time: <u>1603</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>4/16/13</u> Time: <u>1603</u>
Relinquished by (Signature) <u>[Signature]</u>	Date: <u>4/16/13</u> Time: <u>1725</u>	Received by (Signature) <u>[Signature]</u>	Date: <u>4/17/13</u> Time: <u>1800</u>
Relinquished by (Signature) _____	Date: _____ Time: _____	Received by (Signature) _____	Date: _____ Time: _____
Relinquished by (Signature) _____	Date: _____ Time: _____	Received by (Signature) _____	Date: _____ Time: _____

NOTES: _____

Matrix Container	WW - Wastewater VOA - 40 ml vial	S - Soil SD - Solid A/G - Amber / Or Glass 1 Liter	L - Liquid 250 ml - Glass wide mouth	A - Air Bag	C - Charcoal tube P/O - Plastic or other	SL - sludge	O - Oil
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CHAIN OF CUSTODY RECORD

Southwest GEOSCIENCE Environmental & Hydrogeologic Consultants		Laboratory: <u>Hall</u> Address: <u>ABQ</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); position: relative; top: -20px; left: -20px;"> BTEX TPH GRO/PRO 8021 8015 </div>		Lab use only Due Date:				
		Office Location: <u>Aztec</u> Project Manager: <u>Summers</u> Sampler's Name: <u>Ryle Summers</u>				Temp. of coolers when received (C°): <u>10</u> Page <u>3</u> of <u>4</u>				
Contact: <u>Freeman</u> Phone: _____ PO/ISO #: <u>04136002</u> Sampler's Signature: _____		Project Name: <u>Fed 2 E #1</u>								
Matrix	Date	Time	Identifying Marks of Sample(s)	Start	End	VOA	AVG 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
S	4/13/13	0850	MW-8 (5')	4	5				1	1304702-021
		0920	MW-8 (16')	15	16					-022
		0930	MW-8 (25')	24	25					-023
		1045	MW-9 (1')	0	1					-024
		1100	MW-9 (5')	4	5					-025
		1130	MW-9 (22')	21	22					-026
		1310	MW-10 (3')	1	2					-028 027
		1320	MW-10 (5')	4	5					-028
		1350	MW-10 (20')	19	20					-029
		1535	MW-11 (3')	2	3					-030

Turn around time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> 25% Rush <input type="checkbox"/> 50% Rush <input type="checkbox"/> 100% Rush		NOTES:	
Relinquished by (Signature): _____	Date: <u>4/16/13</u>	Received by (Signature): _____	Date: <u>4/16/13</u>
Relinquished by (Signature): _____	Date: <u>4/16/13</u>	Received by (Signature): _____	Date: <u>4/17/13</u>
Relinquished by (Signature): _____	Date: _____	Received by (Signature): _____	Date: _____
Relinquished by (Signature): _____	Date: _____	Received by (Signature): _____	Date: _____



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

May 03, 2013

Kyle Summers

Southwest Geoscience
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (903) 821-5603
FAX (214) 350-2914

RE: Fed 2E #1

OrderNo.: 1304837

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/20/2013 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. 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. 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.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical ReportLab Order **1304837**Date Reported: **5/3/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-1**Project:** Fed 2E #1**Collection Date:** 4/17/2013 11:05:00 AM**Lab ID:** 1304837-001**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2013 8:50:36 PM
Surr: DNOP	101	75.4-146		%REC	1	4/22/2013 8:50:36 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/27/2013 1:25:04 AM
Surr: BFB	91.2	51.9-148		%REC	1	4/27/2013 1:25:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/27/2013 1:25:04 AM
Toluene	ND	1.0		µg/L	1	4/27/2013 1:25:04 AM
Ethylbenzene	ND	1.0		µg/L	1	4/27/2013 1:25:04 AM
Xylenes, Total	ND	2.0		µg/L	1	4/27/2013 1:25:04 AM
Surr: 4-Bromofluorobenzene	94.7	69.4-129		%REC	1	4/27/2013 1:25:04 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304837**Date Reported: **5/3/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-2**Project:** Fed 2E #1**Collection Date:** 4/18/2013 3:05:00 PM**Lab ID:** 1304837-002**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2013 9:12:28 PM
Surr: DNOP	96.9	75.4-146		%REC	1	4/22/2013 9:12:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	1.4	0.050		mg/L	1	4/27/2013 2:55:30 AM
Surr: BFB	102	51.9-148		%REC	1	4/27/2013 2:55:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	330	10		µg/L	10	4/29/2013 5:32:30 PM
Toluene	41	1.0		µg/L	1	4/27/2013 2:55:30 AM
Ethylbenzene	2.5	1.0		µg/L	1	4/27/2013 2:55:30 AM
Xylenes, Total	45	2.0		µg/L	1	4/27/2013 2:55:30 AM
Surr: 4-Bromofluorobenzene	108	69.4-129		%REC	1	4/27/2013 2:55:30 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304837**Date Reported: **5/3/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-3**Project:** Fed 2E #1**Collection Date:** 4/18/2013 9:45:00 AM**Lab ID:** 1304837-003**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/22/2013 9:55:59 PM
Surr: DNOP	105	75.4-146		%REC	1	4/22/2013 9:55:59 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	0.093	0.050		mg/L	1	4/27/2013 3:25:43 AM
Surr: BFB	94.6	51.9-148		%REC	1	4/27/2013 3:25:43 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/27/2013 3:25:43 AM
Toluene	ND	1.0		µg/L	1	4/27/2013 3:25:43 AM
Ethylbenzene	ND	1.0		µg/L	1	4/27/2013 3:25:43 AM
Xylenes, Total	ND	2.0		µg/L	1	4/27/2013 3:25:43 AM
Surr: 4-Bromofluorobenzene	102	69.4-129		%REC	1	4/27/2013 3:25:43 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304837

Date Reported: 5/3/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-9**Project:** Fed 2E #1**Collection Date:** 4/18/2013 1:35:00 PM**Lab ID:** 1304837-004**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/23/2013 5:35:21 AM
Surr: DNOP	113	75.4-146		%REC	1	4/23/2013 5:35:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/27/2013 3:56:03 AM
Surr: BFB	92.2	51.9-148		%REC	1	4/27/2013 3:56:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/27/2013 3:56:03 AM
Toluene	ND	1.0		µg/L	1	4/27/2013 3:56:03 AM
Ethylbenzene	ND	1.0		µg/L	1	4/27/2013 3:56:03 AM
Xylenes, Total	ND	2.0		µg/L	1	4/27/2013 3:56:03 AM
Surr: 4-Bromofluorobenzene	98.9	69.4-129		%REC	1	4/27/2013 3:56:03 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1304837

Date Reported: 5/3/2013

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Southwest Geoscience**Client Sample ID:** MW-6**Project:** Fed 2E #1**Collection Date:** 4/18/2013 10:45:00 AM**Lab ID:** 1304837-005**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/23/2013 5:56:56 AM
Surr: DNOP	109	75.4-146		%REC	1	4/23/2013 5:56:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	2.3	0.050		mg/L	1	4/27/2013 4:26:12 AM
Surr: BFB	117	51.9-148		%REC	1	4/27/2013 4:26:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	230	10		µg/L	10	4/29/2013 6:02:44 PM
Toluene	ND	1.0		µg/L	1	4/27/2013 4:26:12 AM
Ethylbenzene	ND	1.0		µg/L	1	4/27/2013 4:26:12 AM
Xylenes, Total	110	2.0		µg/L	1	4/27/2013 4:26:12 AM
Surr: 4-Bromofluorobenzene	114	69.4-129		%REC	1	4/27/2013 4:26:12 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1304837

Date Reported: 5/3/2013

CLIENT: Southwest Geoscience

Client Sample ID: MW-8

Project: Fed 2E #1

Collection Date: 4/18/2013 2:20:00 PM

Lab ID: 1304837-006

Matrix: AQUEOUS

Received Date: 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/23/2013 6:18:34 AM
Surr: DNOP	115	75.4-146		%REC	1	4/23/2013 6:18:34 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/29/2013 6:33:04 PM
Surr: BFB	92.8	51.9-148		%REC	1	4/29/2013 6:33:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/29/2013 6:33:04 PM
Toluene	ND	1.0		µg/L	1	4/29/2013 6:33:04 PM
Ethylbenzene	ND	1.0		µg/L	1	4/29/2013 6:33:04 PM
Xylenes, Total	ND	2.0		µg/L	1	4/29/2013 6:33:04 PM
Surr: 4-Bromofluorobenzene	99.2	69.4-129		%REC	1	4/29/2013 6:33:04 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304837**Date Reported: **5/3/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-10**Project:** Fed 2E #1**Collection Date:** 4/18/2013 12:45:00 PM**Lab ID:** 1304837-007**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/23/2013 6:40:08 AM
Surr: DNOP	109	75.4-146		%REC	1	4/23/2013 6:40:08 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	4/29/2013 8:03:54 PM
Surr: BFB	90.4	51.9-148		%REC	1	4/29/2013 8:03:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	1	4/29/2013 8:03:54 PM
Toluene	ND	1.0		µg/L	1	4/29/2013 8:03:54 PM
Ethylbenzene	ND	1.0		µg/L	1	4/29/2013 8:03:54 PM
Xylenes, Total	ND	2.0		µg/L	1	4/29/2013 8:03:54 PM
Surr: 4-Bromofluorobenzene	99.6	69.4-129		%REC	1	4/29/2013 8:03:54 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical ReportLab Order **1304837**Date Reported: **5/3/2013****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Southwest Geoscience**Client Sample ID:** MW-11**Project:** Fed 2E #1**Collection Date:** 4/18/2013 11:50:00 AM**Lab ID:** 1304837-008**Matrix:** AQUEOUS**Received Date:** 4/20/2013 10:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015D: DIESEL RANGE						Analyst: GSA
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	4/23/2013 7:01:49 AM
Surr: DNOP	113	75.4-146		%REC	1	4/23/2013 7:01:49 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	1.9	0.050		mg/L	1	4/29/2013 8:34:09 PM
Surr: BFB	109	51.9-148		%REC	1	4/29/2013 8:34:09 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	560	20		µg/L	20	4/30/2013 5:27:55 PM
Toluene	ND	1.0		µg/L	1	4/29/2013 8:34:09 PM
Ethylbenzene	ND	1.0		µg/L	1	4/29/2013 8:34:09 PM
Xylenes, Total	79	2.0		µg/L	1	4/29/2013 8:34:09 PM
Surr: 4-Bromofluorobenzene	113	69.4-129		%REC	1	4/29/2013 8:34:09 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	MB-7084	SampType:	MBLK		TestCode:	EPA Method 8015D: Diesel Range				
Client ID:	PBW	Batch ID:	7084		RunNo:	10035				
Prep Date:	4/22/2013	Analysis Date:	4/22/2013		SeqNo:	285943	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Surr: DNOP	0.82		1.000		82.2	75.4	146			

Sample ID	LCS-7084		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range					
Client ID:	LCSW		Batch ID: 7084		RunNo: 10035					
Prep Date:	4/22/2013		Analysis Date: 4/22/2013		SeqNo: 285944		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.6	1.0	5.000	0	111	89.1	151			
Surr: DNOP	0.55		0.5000		111	75.4	146			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/26/2013	SeqNo:	289273	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		88.6	51.9	148			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/26/2013	SeqNo:	289274	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	108	73.2	124			
Surr: BFB	19		20.00		96.0	51.9	148			

Sample ID	1304837-001AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-1	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/27/2013	SeqNo:	289285	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.55	0.050	0.5000	0	109	65.2	137			
Surr: BFB	20		20.00		101	51.9	148			

Sample ID	1304837-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-1	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/27/2013	SeqNo:	289286	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.54	0.050	0.5000	0	107	65.2	137	1.92	20	
Surr: BFB	20		20.00		100	51.9	148	0	0	

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290482	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	18		20.00		89.5	51.9	148			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290483	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.56	0.050	0.5000	0	113	73.2	124			

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 |
| P Sample pH greater than 2 | 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#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290483	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	19		20.00		97.4	51.9	148			

Sample ID	1304837-006AMS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-8	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290494	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	114	65.2	137			
Surr: BFB	20		20.00		101	51.9	148			

Sample ID	1304837-006AMSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	MW-8	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290495	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.57	0.050	0.5000	0	114	65.2	137	0.175	20	
Surr: BFB	21		20.00		103	51.9	148	0	0	

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	R10219	RunNo:	10219					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	291478	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	18		20.00		90.6	51.9	148			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	R10219	RunNo:	10219					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	291479	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	20		20.00		99.4	51.9	148			

Sample ID	1304B13-008BMDS	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	BatchQC	Batch ID:	R10219	RunNo:	10219					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	291491	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	160		100.0		163	51.9	148	0	0	S

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/26/2013	SeqNo:	289297	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		98.4	69.4	129			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R10148	RunNo:	10148					
Prep Date:		Analysis Date:	4/26/2013	SeqNo:	289298	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	20	2.5	20.00	0	99.4	76.9	115			
Benzene	20	1.0	20.00	0	98.0	80	120			
Toluene	20	1.0	20.00	0	98.3	80	120			
Ethylbenzene	20	1.0	20.00	0	97.5	80	120			
Xylenes, Total	61	2.0	60.00	0	102	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	98.8	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		100	69.4	129			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/29/2013	SeqNo:	290576	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		99.2	69.4	129			

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 |
| P Sample pH greater than 2 | 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#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID		100NG BTEX LCS		SampType: LCS		TestCode: EPA Method 8021B: Volatiles				
Client ID:		LCSW		Batch ID: R10193		RunNo: 10193				
Prep Date:		Analysis Date: 4/29/2013		SeqNo: 290578		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	22	2.5	20.00	0	108	76.9	115			
Benzene	20	1.0	20.00	0	99.2	80	120			
Toluene	20	1.0	20.00	0	98.5	80	120			
Ethylbenzene	20	1.0	20.00	0	97.8	80	120			
Xylenes, Total	60	2.0	60.00	0	101	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	98.2	80	120			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	99.1	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		104	69.4	129			

Sample ID	1304837-007AMS	SampType:	MS	TestCode: EPA Method 8021B: Volatiles						
Client ID:	MW-10	Batch ID:	R10193	RunNo: 10193						
Prep Date:		Analysis Date:	4/29/2013	SeqNo: 290591			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	21	2.5	20.00	0	105	65.6	125			
Benzene	20	1.0	20.00	0	101	80	120			
Toluene	20	1.0	20.00	0.3700	99.9	80	120			
Ethylbenzene	20	1.0	20.00	0	102	80	120			
Xylenes, Total	62	2.0	60.00	0.7060	103	80	120			
1,2,4-Trimethylbenzene	20	1.0	20.00	0.2280	101	74	128			
1,3,5-Trimethylbenzene	21	1.0	20.00	0	105	75.5	130			
Surr: 4-Bromofluorobenzene	21		20.00		104	69.4	129			

Sample ID	1304837-007AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW-10	Batch ID:	R10193	RunNo:	10193					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	290592	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	21	2.5	20.00	0	106	65.6	125	0.655	20	
Benzene	20	1.0	20.00	0	100	80	120	0.477	20	
Toluene	20	1.0	20.00	0.3700	99.0	80	120	0.839	20	
Ethylbenzene	20	1.0	20.00	0	101	80	120	0.601	20	
Xylenes, Total	62	2.0	60.00	0.7060	102	80	120	0.878	20	
1,2,4-Trimethylbenzene	20	1.0	20.00	0.2280	99.2	74	128	1.35	20	
1,3,5-Trimethylbenzene	21	1.0	20.00	0	104	75.5	130	0.821	20	
Surr: 4-Bromofluorobenzene	21		20.00		105	69.4	129	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1304837

03-May-13

Client: Southwest Geoscience

Project: Fed 2E #1

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R10219	RunNo:	10219					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	291518	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 4-Bromofluorobenzene	20		20.00		99.0	69.4	129			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R10219	RunNo:	10219					
Prep Date:		Analysis Date:	4/30/2013	SeqNo:	291519	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		107	69.4	129			

Qualifiers:

* Value exceeds Maximum Contaminant Level.

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH greater than 2

RL Reporting Detection Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S Spike Recovery outside accepted recovery limits



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4101
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Southwest Geoscience

Work Order Number: 1304837

RcptNo: 1

Received by/date: LM 04/20/13
Logged By: Michelle Garcia 4/20/2013 10:15:00 AM *Michelle Garcia*
Completed By: Michelle Garcia 4/22/2013 8:56:21 AM *Michelle Garcia*
Reviewed By: IO 04/22/2013

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? Courier

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? Yes ☒ No ☐
(Note discrepancies on chain of custody)
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? Yes ☒ No ☐
(If no, notify customer for authorization.)

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	1.4	Good	Yes			

CHAIN OF CUSTODY RECORD

<h1 style="margin:0;">Southwest</h1> <h2 style="margin:0;">GEOSCIENCE</h2> <p style="margin:0; font-size: small;">Environmental & Hydrogeologic Consultants</p>		Office Location <u>Artec</u>		Laboratory: <u>Hall</u> Address: <u>Artec</u>		ANALYSIS REQUESTED <div style="transform: rotate(-45deg); position: relative; height: 100px;"> BTEX 8021 TPH GAD/ORD 8015 </div>		Temp. of coolers when received (C°): <u>1.4</u> 1 2 3 4 5		Lab use only Due Date:	
		Project Manager <u>R. Summers</u> Sampler's Name <u>Kyle Summers</u>		Contact: <u>Andy Freeman</u> Phone: _____ PO/ISO #: <u>04136002</u> Sampler's Signature: _____				Page <u>1</u> of <u>1</u>			

Proj. No.		Project Name		No/Type of Containers				Identifying Marks of Sample(s)		No/Type of Containers		Lab Sample ID (Lab Use Only)	
Matrix	Date	Time	C o m p	G a d	Identifying Marks of Sample(s)	Start	Stop	VOA	AG	250 ml	P/O	Lab Sample ID (Lab Use Only)	
W	4/17/13	1105	X		MW-1			5				1304837-001	
	4/18/13	1505			MW-2							-002	
		0945			MW-3							-003	
		1335			MW-9							-004	
		1045			MW-6							-005	
		1420			MW-8							-006	
		1245			MW-10							-007	
		1150			MW-11							-008	
<u>NS</u> <u>AKES</u>													

Turn around time		Normal		25% Rush		50% Rush		100% Rush		NOTES:	
Relinquished by (Signature)	Date/Time	Received by (Signature)	Date/Time	Relinquished by (Signature)	Date/Time	Received by (Signature)	Date/Time	Relinquished by (Signature)	Date/Time	Received by (Signature)	Date/Time
<u>[Signature]</u>	<u>4/17/13 1105</u>	<u>[Signature]</u>	<u>4/19/13 164</u>	<u>[Signature]</u>	<u>4/19/13 104</u>	<u>[Signature]</u>	<u>4/19/13 1015</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1015</u>
<u>[Signature]</u>	<u>4/18/13 1505</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 0945</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 1335</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 1045</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 1420</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 1245</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>
<u>[Signature]</u>	<u>4/18/13 1150</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>	<u>[Signature]</u>	<u>4/19/13 1747</u>