District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Legacy Reserves, LP	Contact Kevin Bracey
Address P. O. Box 10848, Midland, Texas 79702	Telephone No. 432-238-2856
Facility Name **Chamberlain Historical**	Facility Type Tank Battery

Surface Owner Darr Angell	Mineral Owner	Lease No.

LOCATION OF RELEASE

API # 30-025-05312

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	14	15S	37E					Lea

Latitude 33° 01 16.7" North Longitude 103° 10 13.6" West

NATURE OF RELEASE

Type of Release Produced Water and crude oil	Volume of Release Unknown	Volume Recovered Unknown
Source of Release Unknown	Date and Hour of Occurrence Historical	Date and Hour of Discovery Historical
Was Immediate Notice Given? Yes No Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* WATER @ 57'

Describe Cause of Problem and Remedial Action Taken: Historical impact discovered during remediation of non-reportable release. The site will be remediated to NMOCD guidelines.

Describe Area Affected and Cleanup Action Taken. Release impacted approximately 20,000 square feet.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases, which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kevin Bracey	**OIL CONSERVATION DIVISION**
Printed Name: Kevin Bracey	ENV ENGINEER: Approved by ~~District Supervisor~~: Geoffrey Leking
Title: Production Foreman	Approval Date: 01/11/10 Expiration Date: 03/11/10
E-mail Address: kbracey@legacylp.com	Conditions of Approval: DELINEATE TO CLEAN +1, SUBMIT FINAL C-141 BY 03/11/10. IRP-10-1-2391
Date: 1/7/2010 Phone: 432-238-2856	

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1RP-2391

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Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Legacy Reserves, L.P.	Contact: Kevin Bracey
Address: P.O. Box 10848, Midland, TX 79702	Telephone No.: (432) 238-2856
Facility Name: Chamberlain Historical	Facility Type: Tank Battery

Surface Owner: Darr Angell	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	14	15S	37E					Lea

Latitude: N 33° 01' 16.7" Longitude: W 103° 10' 13.6"

NATURE OF RELEASE

Type of Release: Produced Water and Crude Oil	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Unknown	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: Historical
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Historic impact discovered during remediation of non-reportable quantity release from flow line. Soil was excavated to approximately 20 feet bgs and disposed at OCD permitted landfill/landfarm.

Describe Area Affected and Cleanup Action Taken.* Historic contamination believed to be from a pit was excavated to about 20 feet. Contaminated soil was disposed at OCD permitted landfill/landfarm. Excavation was filled to approximately 4 feet bgs where 20-mil polyethylene line was installed, per OCD approval. Remainder of excavation above liner was covered with topsoil. Location will be seeded per landowner's specification when adequate soil moisture is received.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kevin Bracey	OIL CONSERVATION DIVISION	
Printed Name: Kevin Bracey	Approved by District Supervisor: Environmental Specialist	
Title: Production Superintendent	Approval Date: 3/07/2014	Expiration Date: —
E-mail Address: kbracey@legacylp.com	Conditions of Approval: —	Attached ☐ IRP-10-1-2391
Date: 03/03/2014 Phone: (432) 238-2856		

* Attach Additional Sheets If Necessary

INVESTIGATION
AND REMEDIATION REPORT
Chamberlain Flow Line Leak
and Historic Contamination
#1RP-2391

Lea County, New Mexico

LAI Project No. 12-0126-01

July 25, 2013

Prepared for:

Legacy Reserves, L.P.
30 West Wall Street, Suite 1400
Midland, Texas 79701

Prepared by:

Larson & Associates, Inc.
507 North Marienfeld, Suite 200
Midland, Texas 79701

Mark J. Larson
Certified Professional Geologist No. 10490

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1.0 EXECUTIVE SUMMARY

This report has been prepared on behalf of Legacy Reserves, L.P. (Legacy) for submittal to the New Mexico Oil Conservation Division (OCD) to present the investigation and proposed remediation for an area of historic contamination located south of the Chamberlain Tank Battery (Site). In early 2009, while remediating a non-reportable flow line leak, a Legacy contractor exposed the historic contamination, which appears to be a former pit. Legacy notified the OCD District 1 office, in Hobbs, New Mexico, and submitted an initial C-141 on January 1, 2010. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6." The surface owner is Angell Ranch Co., LLC.

In May 2009, Legacy retained Basin Environmental Consulting, LLC (Basin), located in Lovington, New Mexico, to investigate the historic contamination. Basin installed a temporary monitoring well near the east side of the historic contamination area, among other things. A groundwater sample from the temporary well was analyzed and reported ethylbenzene and xylenes at 0.0021 milligrams per liter (mg/L) and 0.0058 mg/L, respectively. The ethylbenzene and xylenes were below the New Mexico Water Quality Control Commission (WQCC) human health standards of 0.75 and 0.62 mg/L, respectively.

In April 2012, Legacy retained Larson & Associates, Inc (LAI) to investigate the historic contamination and prepare a remediation plan. Historic aerial photographs were reviewed to determine that the historic contamination was likely from a pit that had been covered. LAI personnel supervised excavation of approximately 4,220 cubic yards of soil that was disposed along with soil excavated by the previous contactors at the Jay Dan, LLC Landfarm located west of Lovington, New Mexico.

Remediation action levels were calculated for benzene, BTEX and TPH using criteria established by the OCD (Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993):

Ranking Criteria	Result	Ranking Score
Depth-to-Groundwater	<50 feet	20
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
	Total Score:	**20**

Based on the total ranking score, the remediation action levels are:

Benzene:	**10 mg/kg**
BTEX:	**50 mg/kg**
TPH:	**100 mg/kg**

During May, October and November 2012, LAI personnel collected soil samples from the bottom and sides of the excavation. The samples were analyzed by laboratory methods for benzene, toluene, ethylbenzene, xylenes (BTEX) by method SW-846-8021B, total petroleum hydrocarbons (TPH) including diesel (DRO) and gasoline (GRO) range organics by method SW0846-8015, and chloride by method E300. TPH exceeded the OCD cleanup level in most of the soil samples and failed to determine the vertical and horizontal extent of contamination.

During April, March and June 2013 LAI personnel supervised drilling and collecting soil samples from 9 borings (BH-1 through BH-9) that were drilled in the bottom (BH-1, BH-2 and BH-4) and around the perimeter of the excavation. The borings were drilled using hollowstem augers and air rotary methods

by Precision Sampling, Inc. (Precision) located in Albuquerque, New Mexico and Scarborough Drilling, Inc. (SDI) located in Lamesa, Texas. Soil samples were collected and analyzed to delineate the vertical and horizontal extent of the historic contamination. Borings BH-1, BH-2 and BH-3 were drilled between approximately 43 (BH-1) and 55 (BH-3) feet below ground surface (bgs) and soil samples were collected using a continuous sampler. Discrete samples were collected from the remaining borings using a jam tube sampler every five (5, 10, 15, 20 and 25) and ten (30, 40 and 50) feet. Headspace samples were collected and analyzed with a Thermal Model 580 photoionization detector (PID). Samples exhibiting readings above 100 parts per million (ppm) were analyzed for BTEX in addition to TPH (SW-846-8015) and chloride (E300). The results of the investigation determined the extent of contamination.

Benzene and BTEX were below the OCD cleanup levels of 10 mg/Kg and 50 mg/Kg, respectively. The TPH is limited to the area of the current excavation and extends vertically to a depth of approximately 47 feet bgs near the center of the excavation. Chloride was reported to be 567 mg/Kg at approximately 55 feet bgs near the center of the excavation at boring BH-3.

On June 10, 2013, a temporary monitoring well (TMW-1) was installed about 100 feet southeast (down gradient) of the excavation. The boring was drilled to about 75 feet bgs using an air rotary rig. The well was constructed with 2 inch threaded schedule 40 PVC casing and about 20 feet of 0.010 inch factory slotted screen. The well screen was positioned across the groundwater surface observed during drilling between approximately 54.77 and 74.72 feet bgs. Groundwater stabilized in TMW-1 at 65.85 feet below top of casing or about 63.07 feet bgs.

On June 11, 2013, after developing the well by pumping with an electric submersible pump, LAI personnel collected groundwater samples using a dedicated disposable polyethylene bailer. The groundwater samples were analyzed by laboratory methods. BTEX was not reported in the samples above the method detection limits (MDL). Chloride and TDS were reported at 263 milligrams per liter (mg/L) and 1,180 mg/L, respectively, and do not suggest that a groundwater impact has occurred.

Legacy proposes to install an engineered cap by placing a geosynthetic liner of at least 20 mills thick at a depth of 4 feet bgs over the area of historic contamination and portion of the non-reportable leak. The geosynthetic liner will encompass an area measuring approximately 37,934 square feet or about .872 acres. The area for the proposed liner, including the current excavation, will be excavated and filled to a depth of about 4 feet bgs. The liner will be installed at a depth of about 4 feet bgs and the remainder of the excavation above the liner will be filled with clean soil to the surrounding topography. The center of the lined area will be crowned slightly for drainage. The surface will be seeded to the landowner's specification. Residual contaminated soil, if any, will be disposed at an OCD approved facility. The monitoring well will be plugged according to the New Mexico State Engineer rules. A final report and C-141 will be submitted to the OCD upon completion of the remediation.

2.0 INTRODUCTION

Legacy Reserves, L.P. (Legacy) submits this document to the New Mexico Oil Conservation Division (OCD) to report the investigation and propose a final remediation plan for a non-reportable spill and historical release south of the Chamberlain Tank Battery (Site) located in Lea County, New Mexico. The report was prepared by Larson & Associates, Inc. (LAI) as consultant to Legacy. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, and Range 37 East about 20 miles northeast of Lovington, New Mexico. The surface is owned by Angell Ranch Co., LLC. The geodetic position is north

33° 01’ 16.7” and west 103° 10’ 13.6”. Figure 1 presents a location and topographic map. Figure 2 presents an aerial photograph. Figure 3 presents a Site drawing.

2.1 Initial Response and Notification

In 2009, while remediating a non-reportable spill from a flow line south of the Site, a Legacy contractor encountered contamination from a historic release. The contractor excavated soil from the non-reportable spill to a depth of approximately 5 feet below ground surface (bgs) and between about 3 and 10 feet over an area measuring approximately 100 X 135 feet or 15,867 square feet (0.36 acres) in the historic area. About 200 cubic yards of soil was excavated from the non-reportable spill and retained on Site near the east side of the excavation (SP-3). The area of historic contamination is located north of the non-reportable spill area. It was estimated that approximately 1,100 cubic yards of soil was excavated from the historic contamination area. Soil excavated from the historic area was piled along the north side of the excavation.

In May 2010, Legacy retained Basin Environmental Consulting, LLC (Basin) to perform assessment activities that included, among other things, collecting soil samples for laboratory testing from five (5) exploratory trenches (main, east, west, north and south) and six (6) soil borings (SB-1 through SB-6). Boring SB-1 was drilled to approximately 65 feet bgs near the east side of the historic contamination area and encountered groundwater at approximately 61 feet bgs. A temporary monitoring well (TMW-1) was installed in boring SB-1 for collecting groundwater samples. An analysis of the groundwater reported benzene and toluene below the method detection limit (MDL) of 0.001 milligrams per liter (mg/L) and 0.002 mg/L, respectively. Ethylbenzene (0.0021 mg/L) and xylenes (0.0058 mg/L) were below the New Mexico Water Quality Control Commission (WQCC) human health standards for drinking water. Chloride was 286 mg/L and above the WQCC domestic water quality standard (250 mg/L). Total dissolved solids (TDS) was 960 mg/L and below the WQCC domestic water quality standard (1,000 mg/L). Table 1 presents a groundwater analytical data summary for the Basin groundwater sample.

On January 7, 2010, Legacy submitted the initial C-141 for the historic contamination to the OCD District 1 office located in Hobbs, New Mexico. The OCD assigned remediation project number 1RP-2391 to the historic release. Figure 3 presents the non-reportable and historic spill excavation areas.

2.2 Setting

The surface elevation is approximately 3,791 feet above mean sea level (MSL) and slopes gently to the southeast. The soil is designated as “Kimbrough gravelly loam, 0 to 3 percent slopes (Kg)” which occurs on upland areas and is known locally as “scabland.” The soil has a surface layer approximately 6 inches thick of dark grayish brown gravelly loam which is underlain by indurated caliche. The unit is comprised of approximately 85% Kimbrough soil with the remainder being Lea, Sharvana, Stegall and Slaughter soils. The soil is too shallow for cropland therefore its main use is range and wildlife habitat.

According to the New Mexico Bureau of Geology and Mineral Resources, the site is located in the Southern High Plains physiographic province. The Site is underlain by a thin layer of silty clay (loam). The silty clay is underlain by a resilient layer of caliche or caprock. The caliche is a hard, erosion resistant, pedogenic calcrete that between approximately 25 and 30 feet thick. The caliche grades into the Pliocene to Miocene aged Ogallala formation which is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz sand. The Ogallala formation is underlain by the Triassic-age Chile formation of the

Dockum Group. Figures 4 and 5 present north (A) to south (A') and west (B) to east (B') geological cross sections, respectively. Figure 3 presents the site drawing and geological cross section locations.

LAI personnel supervised installing a temporary monitoring well (TMW-1) about 100 feet southeast of the Site where groundwater was encountered in the Ogallala formation at approximately 62 feet bgs. The Triassic-age Chinle formation is the lower confining unit for the Ogallala formation and occurs at a depth of approximately 120 feet bgs according to well records from the New Mexico Office of the State Engineer (OSE). A well used for livestock watering is located about 1,600 feet southeast of the Site. The regional groundwater flow direction is to the southeast (Nativ, 1988). The groundwater potentiometric surface is depicted on the north (A) to south (A') and west (B) to east (B') geological cross sections presented on Figure 4 and Figure 5, respectively.

2.3 Aerial Photographs

Historical aerial photographs were ordered through GeoSearch located in Austin, Texas. A review of the photographs is presented below in chronological order from most recent to oldest. Appendix A presents the historical aerial photographs.

2.3.1 2011 US Geological Survey Color Photograph

This 2011 color photograph has a scale of 1" to 700'. The photograph depicts the Site condition following the initial excavations in 2009. The photograph shows evidence of surface scarring from prior operations or releases at the Site. The surrounding area is similar to what was observed during the current investigation and remediation.

2.3.2 1996 US Geological Survey Black and White Photograph

This black and white photograph was taken in 1996, and has a scale of 1" to 700'. This photograph shows evidence of scarring from previous operations or releases at the Site. Adjoining properties to the north, south, east, and west are in similar configuration observed during the current investigations and remediation.

2.3.3 1983 US Geological Survey Color Photograph

This color photograph was taken on June 3, 1983, and has a scale of 1" to 700'. The photograph shows evidence of scarring from previous operations or releases at the Site. The square shape of the scarring suggests that release was from a pit. The adjoining properties to the north, south, east, and west are in similar configuration observed during the current investigations and remediation.

2.3.4 1978 USGS Black and White Photograph

This black and white photograph was taken on November 17, 1978, and has a scale of 1" to 700'. The photograph shows the Site in similar condition observed in the earlier photograph (June 3, 1983) with the square shape being more pronounced. The square shape of the area suggests that the Site was the location of a pit.

2.3.5 1968 USGS Black and White Photograph

This black and white photograph was taken on February 8, 1968, and has a scale of 1" to 700'. This photograph depicts the Site in similar condition observed in the earlier photograph (November 17, 1968) with a square shape that suggests the release was a pit that was covered. This is further supported by the presence of corner post which suggests the area was fenced.

3.0 INVESTIGATIONS AND REMEDIATION

The Site was ranked according to OCD criteria published in the document, *"Guidelines for Remediation of Leak, Spill and Releases, August 13, 1993"* to determine cleanup levels for benzene, BTEX (sum of benzene, toluene, ethylbenzene and xylenes) and total petroleum hydrocarbons (TPH). Depth to groundwater occurs at less than 50 feet below the lowest contaminants with a ranking score of 20. The nearest water well and surface water is located about 1,600 feet southeast of the Site with a ranking score of 0 therefore the total ranking score for the Site 20.

Ranking Criteria	Result	Ranking Score
Depth-to-Groundwater	<50 feet	20
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
	Total Score:	**20**

The following cleanup levels for benzene, BTEX and TPH as assigned to the Site based on the total ranking score (20):

Benzene:	**10 mg/kg**
BTEX:	**50 mg/kg**
TPH:	**100 mg/kg**

The OCD does not have a cleanup level for chloride but requires delineation to the equivalent of the WQCC domestic water quality limit (250 mg/Kg).

3.1 Non-Reportable (Flow Line) Leak Investigation

On April 12, 2013, LAI personnel used a stainless steel hand auger to collect soil samples at 4 locations (HA-1 through HA-4) in the bottom of the flow line excavation south of the historic area. The samples were collected at approximately 5 feet bgs and were analyzed by Trace Analysis, (Trace) located in Midland, Texas, for TPH by method SW-846-8015, including diesel (DRO), gasoline (GRO) and oil (ORO) range organics, and chloride by method E300. Table 2 presents a summary of the laboratory analysis. Appendix B presents the laboratory reports.

Referring to Table 2, TPH was detected in samples HA-1 (144 mg/Kg) and HA-2 (95.5 mg/Kg). The TPH in sample HA-1 exceeds the OCD cleanup level of 100 ppm. Chloride ranges from 45.8 mg/Kg (HA-3) to 5,540 mg/Kg (HA-1). Figure 6 presents the sample locations and chloride concentrations.

3.2 Historic Contamination Area

LAI personnel performed an initial evaluation of the historic area by removing loose soil and rock from the bottom and sides of the excavation and collecting soil samples for laboratory analysis. Approximately 2,320 cubic yards of soil, including soil excavated by the previous contractor, was disposed at the Jay Dan Landfarm, LLC (NM-01-0045) located west of Lovington, New Mexico.

On May 24, 2012, LAI personnel collected discrete soil samples from the sidewalls (SW-A through SW-G) and 5-part composite samples at 3 and 7 feet bgs from the bottom of the excavation. Trace analyzed the samples for BTEX by method SW-846-8021B, TPH, including DRO, GRO and ORO by method SW-846-

8015, and chloride by method E300. Table 3 presents the soil sample analytical data summary for May 24, 2012. Figure 7a presents the excavation and soil sample locations on May 24, 2013. Appendix B presents the laboratory reports.

Referring to Table 3, benzene and BTEX were below the MDL in all samples except sidewall sample SW-A, 2.5 feet which were below the OCD recommended cleanup levels of 10 and 50 milligrams per kilogram (mg/Kg), respectively. Samples SW-A, 2.5 feet and SW-E, 1 and 3.5 feet, exceeded the OCD recommended cleanup level for TPH (100 mg/Kg). The extent of chloride contamination was not determined.

During September and October 2012 LAI personnel supervised excavation of additional soil from the bottom and sides of the excavation. The excavation was deepened to approximately 15 feet bgs. October 4, 2012, LAI personnel collected 19 grab samples from the bottom (BS-1 through BS-19) and 12 grab samples from the sidewalls (SW-1 through SW-12) of the excavation at depths ranging from about 1 (SW-11) to 15 (SB-15) feet bgs (BS-15). In November 2012 soil was excavated to 16 (BS-1, BS-2, BS-3 and BS-4) and 20 (BS-15 and BS-17) feet bgs, respectively. The soil was stockpiled west of the excavation pending disposal. Xenco Laboratories, located in Odessa, Texas, analyzed the samples for BTEX (SW-846-8021B, TPH (SW-846-8015) and chloride (E300).

On November 12, 2012, LAI personnel collected samples from the bottom (BS-1, BS-2, BS-3 and BS-4, BS-15, BS-17) and sidewall (SW-5) and analyzed the samples using a Wilks TPH analyzer and equivalent method to 418.1. Table 4 presents the soil sample analytical data summary for October 4, 2012 and November 12, 2012. Figure 7b presents the excavation and sample locations on October 4 and November 12, 2012. Figure 8a presents TPH concentrations in excavation soil samples on October 4 and November 12, 2012s. Figure 8b presents chloride concentrations in excavation soil samples on October 4 and November 12, 2012. Appendix B presents the laboratory reports.

Referring to Figure 8a, TPH was above the OCD recommended cleanup level in the bottom samples except BS-19 (23.8 mg/Kg). Chloride in the bottom samples ranged from 59 mg/Kg (BS-4) at approximately 10 feet bgs to 3,170 mg/Kg (BS-2) at approximately 8 feet bgs (Figure 8b). The extent of TPH and chloride were not delineated. Benzene was below the MDL and BTEX was below the OCD recommended cleanup level. Approximately 1,900 cubic yards of soil was hauled to the Jay Dan Landfarm, LLC. Appendix C presents photographs.

3.3 Soil Borings

During March, April and June 2013, LAI personnel collected soil samples from nine (9) borings (BH-1 through BH-9) which were drilled to delineate the vertical and horizontal extent of benzene, BTEX, TPH and chloride from the historic release. Precision Sampling, Inc., located in Albuquerque, New Mexico, drilled BH-1, BH-2 and BH-3 in the bottom of the excavation with a CME Model 750 all-terrain hollowstem auger rig and 5-foot long continuous sampler. The continuous sampler collected a 5-foot long soil core from which discrete samples were collected in 1 and 2 foot increments depending on sample recovery. The borings were drilled to approximately 45 (BH-1), 43 (BH-2) and 55 (BH-3) feet bgs. Scarborough Drilling, Inc., located in Lamesa, Texas, used a truck-mounted air rotary rig to drill borings BH-4 through BH-9 around the perimeter of the excavation. Discrete samples were collected at 5 (0, 5, 10, 15, 20 and 25) and 10 (30, 40 and 50 feet) foot intervals using a jam tube sampler. The samples were collected in 4-ounce glass jars and submitted under preservation and chain of custody to Trace. Figure 3 presents the site drawing and soil boring locations. Appendix D presents the boring logs.

Duplicate samples were collected for field headspace analysis. The headspace jars were filled approximately 1/3 full and the opening was sealed with a layer of aluminum foil. The samples were tested by inserting the probe of a calibrated Thermal Model 580 photoionization detector (PID) through the aluminum foil after the samples equilibrated near the ambient temperature. Laboratory samples with field headspace readings above 100 parts per million (ppm) were analyzed for BTEX by method SW-846-8021B. Trace analyzed the samples for TPH, including DRO and GRO, by method SW-846-8015 and chloride by method E300. Table 5 presents the soil boring sample analytical data summary. Appendix B presents the laboratory reports.

Referring to Table 5, none of the samples exceeded the remediation action level for benzene (10 mg/kg) or BTEX (50 mg/kg).TPH in the subsurface is shaped like a T, with the highest levels extending out from BH-3 (2186 mg/Kg) at about 20 feet bgs in a northwest to southeast trend. The area of elevated TPH extends northwest of BH-5 (281.44) and southeast of BH-2 (872 mg/Kg). The TPH plume has a cone-like shape near the center of the area at a depth of 30 feet bgs and becomes concentrated in the vicinity of BH-3 (724 mg/Kg) and BH-1 (163 mg/Kg) where TPH exceeds the OCD cleanup level (100 mg/Kg) to a depth of approximately 50 feet bgs. Figures 9a, 9b and 9c present the TPH concentrations in the soil samples at 20, 30 and 50 feet bgs, respectively.

Chloride was above 250 mg/Kg in the samples collected at approximately 50 feet bgs from BH-3 (455 mg/Kg), BH-5 (1,530 mg/Kg), BH-6 (848 mg/Kg) and BH-7 (582 mg/Kg). Figures 10a, 10b, 10c, and 10d present the chloride concentrations in the soil at 20, 30, 40 and 50 feet bgs.

On April 12 and June 11, 2013, LAI personnel collected 5-part composite samples from three (3) soil piles (SP-1, SP-2 and SP-3). The soil was from excavations performed during May 2009 (SP-3) and October and November 2012 (SP-1 and SP-2). The samples were analyzed for TPH and chloride. TPH ranged from less than the MDL (SP-1) to 2,340 mg/Kg (SP-3). Chloride ranged from 205 mg/Kg (SP-1) to 5,480 mg/Kg (SP-3). Table 5 presents the soil pile analytical data summary. Appendix B presents the laboratory reports.

3.4 Monitoring Well

On June 10, 2013, LAI personnel supervised installing a temporary monitoring well (TMW-1) about 100 feet southeast (down gradient) of the historic area excavation. Scarborough Drilling, Inc., used an air rotary rig to advance the boring to approximately 75 feet bgs. The temporary well was constructed with 2-inch threaded schedule 40 PVC casing and approximately 20 feet of 0.010-inch factory-slotted screen. The screen was installed across the groundwater surface observed during drilling between approximately 54.77 and 74.72 feet bgs. The screen was surrounded with graded silica sand to approximately 2 feet above the screen. A layer of bentonite chips approximately 2 feet thick was placed above the sand and hydrated with potable water. Figure 3 presents the site drawing and well location. Table 6 presents the well drilling and completion summary. Appendix D presents the well completion diagram.

On June 11, 2013, LAI personnel measured the static groundwater in TMW-1 at 65.85 feet below top of casing or approximately 63.07 feet bgs. The well developed by pumping with an electric submersible pump until the water was visibly free of suspended sediment. The purged water was disposed at the Chamberlin Tank Battery. Groundwater samples were collected using a dedicated polyethylene bailer following development. Permian Basin Environmental Lab, located in Midland, Texas, analyzed the

samples for BTEX, anions, cations and total dissolved solids (TDS). Table 7 presents the BTEX analytical data summary. Table 8 presents the anion, cation and TDS analytical data summary. Appendix B presents the laboratory report.

BTEX was below the MDL and WQCC human health standards. Nitrate and sulfate were 8.53 milligrams per liter (mg/L) and 206 mg/L, respectively, and were below the WQCC domestic water quality standards of 10 and 600 mg/L, respectively. Chloride (263 mg/L) and TDS (1,180 mg/L) exceeded the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. Calcium, magnesium, potassium and sodium had values of 94 mg/L, 230 mg/L, 7.20 mg/L and 51 mg/L, respectively.

4.0 CONCLUSIONS

- Benzene and BTEX in soil are below the OCD clean-up levels of 10 mg/Kg and 50 mg/Kg, respectively;
- TPH exceeds the OCD cleanup standard of 100 mg/Kg and is concentrated around boring BH-3 between about 20 and 40 feet bgs and extends laterally to the northwest near BH-5 (281.44) to southeast of BH-2 (872 mg/Kg) ;
- Chloride exceeds 250 mg/Kg in samples from 50 feet at locations BH-3 (455 mg/Kg), BH-5 (1,530 mg/Kg), BH-6 (848 mg/Kg) and BH-7 (582 mg/Kg);
- BTEX was below the MDL and WQCC human health standards in groundwater from temporatry monitoring well TMW-1 installed about 100 feet southeast of the historic contamination area;
- Chloride (263 mg/L) and TDS (1,180 mg/L) were slightly above the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/, respectively, and do not suggest a groundwater impact.

5.0 RECOMMENDATIONS

Legacy proposes to install a geosynthetic liner (barrier) of at least 20 mills thick at a depth of about 4 feet bgs over the historic contamination area and a portion of the flow line leak as shown on Figure 11. The area proposed for geosynthetic lining equals approximately 37,934 square feet or approximately 0.87 acres. Soil will be excavated from the area outside the current excavation and used to fill the excavation to a depth of about 4 feet bgs. Additional soil may be required to fill the excavation before installing the liner and will be acquired from an area determined by the landowner, if necessary. The soil will be compacted as the excavation is filled to prevent settling. Once the liner is installed the remainder of the excavation will be filled with clean soil acquired from a location determined by the landowner. The excavation will be filled to the surrounding topography and crowned slightly near the center for drainage. The area will be seeded to the landowner's specifications. Residual contaminated soil, if any, will be disposed at an OCD approved facility.

The monitoring well will be plugged according to New Mexico State Engineer rules. A final remediation report including global positioning system (GPS) measurements of the liner and final C-141 will be submitted to the OCD District 1 office, located in Hobbs, New Mexico, following completion of remediation activities. Appendix E presents the initial C-141.

6.0 REFERENCES

Nativ, R. (1988). Hydrogeology and Hydrochemistry of the Ogallala Aquifer, Southern High Plains, Texas Panhandle and Eastern New Mexico. Bureau of Economic Geology (Report of Investigations No. 177).

TABLES

Table 1
Basin Environmental, LLC Groundwater Analytical Data Summary
Leagacy Reserves - Chamberlin Site
Lea County, New Mexico
1RP-2391

Sample	Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)
NMWQCC Standard:		**0.01**	**0.75**	**0.75**	**0.62**	**250**	**1,000**
SB-1	03/11/2010	<0.0010	<0.0020	**0.0021**	**0.0058**	**286**	**960**

Notes: Groundwater sample collected from temorary monitoring well (SB-1) by Basin Environmental Consulting, LLC, Lovington, New Mexico
All concentrations are in milligrams per liter (mg/Lg) equivalent to parts per million (ppm).
Bold denotes analyte detected

Table 2
Flow Line Leak Soil Sample Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site (1RP-2391)
Lea County, New Mexico

Sample	Location	Date	Depth (Feet BGS)	Status	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg
OCD Limit:						**10**	**50**	**100**	
HA-1	South Excavation	04-12-2013	0.5	In-situ	0.0	--	--	**144**	**5,540**
HA-2	South Excavation	04-12-2013	0.5	In-Situ	0.0	--	--	**95.5**	**306**
HA-3	South Excavation	04-12-2013	0.5	In-Situ	0.0	--	--	<54	**45.8**
HA-4	South Excavation	04-12-2013	0.5	In-Situ	0.0	--	--	<54	**47.5**

Notes: Analysis performed by Trace Analysis, Midland and Lubbock, Texas
Depth is in feet below ground surface
mg/Kg denotes concentration in milligrams per kilogram equivalent to parts per million (ppm)
Exceeds OCD Recommended Remediation Action Level (RRAL)

Table 3
Historic Contamination Area Soil Samples Analytical Summary
Legacy Reserves, L.P. Chamberlin Site
Lea County, New Mexico

sample	Date	Depth Feet BGS	Location	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)	ORO	TPH (mg/Kg)	Chloride (mg/Kg)
OCD Recommended Cleanup Level:					**10**	**50**				**100**	
SW-A	05-24-2012	2.5	Sidewall	Excavated	**0.534**	**12.183**	**20,100**	**342**	**5,050**	**25,492**	**1,970**
	05-24-2012	4	Sidewall	Excavated	<0.02	<0.08	<50	**<2.0**	<50	<50	**1,350**
SW-B	05-24-2012	2	Sidewall	Excavated	<0.02	<0.08	<250	<2.0	<85.5	<250	**4,310**
	05-24-2012	4.5	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**664**
SW-C	05-24-2012	1	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**7,690**
	05-24-2012	3	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**783**
SW-D	05-24-2012	1	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**784**
	05-24-2012	3	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**582**
SW-E	05-24-2012	1	Sidewall	Excavated	<0.02	<0.08	**7,340**	**68.4**	**893**	**8,301.4**	**7,340**
	05-24-2012	3.5	Sidewall	Excavated	<0.02	<0.08	**3,280**	**55.7**	<17.1	**3,335.7**	**1,640**
SW-F	05-24-2012	1	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**207**
SW-G	05-24-2012	1	Sidewall	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**500**
PB	05-24-2012	3	Bottom	Excavated	<0.02	<0.08	<50	**5.28**	<17.1	**5.28**	**252**
		7	Bottom	Excavated	<0.02	<0.08	<50	<2.0	<17.1	<50	**161**
Soil Pile SP-E	05-24-2012	--	--	Excavated	<0.02	<0.08	**1,110**	**4.36**	**315**	**1,429.36**	**929**

Notes: Samples were analyzed by Xenco Laboratories, Inc., Odessa, Texas and Trace Analysis, Inc., Midland, Texas
Samples analyzed via EPA method SW-8021B (BTEX), SW-8015M (TPH) and E-300 (chloride).
Depth measurements are in feet below ground surface (bgs).
All concentrations are in milligrams per kilogram (mg/Kg) equivalent to parts per million (ppm).

Bold denotes analyte detected
Bold and highlighted denotes analyte detected above OCD recommended cleanup level

Table 4
Historic Contamination Area Soil Sample Analytical Summary
Legacy Reserves, L.P. Chamberlin Site, 1RP-2391
Lea County, New Mexico

sample	Date	Depth	Status	Benzene	BTEX	GRO (C6 - C10)	DRO (>C10 - C28)	TPH (C6 - C28)	Chloride
OCD Recommended Cleanup Level:				**10**	**50**			**100**	
Bottom Samples									
BS-1	10-04-2012	8	Excavated	<0.00109	**0.0303**	**117**	**10800**	**11600**	**1480**
	11-12-2012	16	In-Situ	--	**--**	**---**	**--**	***2438**	**--**
BS-2	10-04-2012	8	Excavated	<0.00108	**0.141**	<80.9	**14200**	**14200**	**3170**
	11-12-2012	16	In-Situ	--	--	--	--	***2,465**	**--**
BS-3	10-04-2012	14	Excavated	<0.217	**16.4**	**525**	**4310**	**4990**	**1,510**
	11-12-2012	16	In-Situ	--	--	--	--	--	--
BS-4	10-04-2012	10	Excavated	<0.00113	**0.0135**	**68.8**	**5730**	**6020**	**59**
	11-12-2012	16	In-Situ	--	--	--	--	***2,483**	**--**
BS-5	10-04-2012	8	In-Situ	<0.00117	<0.00117	<17.7	**109**	**109**	**152**
BS-6	10-04-2012	6	In-Situ	<0.00116	<0.00116	<17.4	<17.4	<17.4	**178**
BS-7	10-04-2012	4	In-Situ	<0.00123	<0.00123	<18.4	<18.4	<18.4	**18.2**
BS-8	10-04-2012	6	In-Situ	<0.00116	<0.00116	<17.5	**1260**	**1260**	**131**
BS-9	10-04-2012	8	In-Situ	<0.00117	**0.0115**	**28.3**	**3170**	**3400**	**664**
BS-10	10-04-2012	8	Excavated	<0.00113	**0.0276**	**103**	**7700**	**8210**	**2420**
	11-12-2012	10	In-Situ	--	--	--	--	***2,523**	**--**
BS-11	10-04-2012	4	In-Situ	<0.00117	<0.00117	<17.6	**1430**	**1430**	**739**
BS-12	10-04-2012	5	In-Situ	<0.00116	<0.0016	<17.4	**662**	**662**	**340**
BS-13	10-04-2012	3	In-Situ	<0.00116	<0.00116	<17.4	**813**	**813**	**2190**
BS-14	10-04-2012	9	In-Situ	<0.00114	<0.00114	<17.1	**1020**	**1020**	**260**
BS-15	10-04-2012	15	Excavated	<0.00111	**0.00116**	**19.7**	**2690**	**2810**	**369**
	11-12-2012	20	In-Situ	--	--	--	--	***2,237**	**--**
BS-16	10-04-2012	6	In-Situ	<0.00.119	<0.00119	<17.9	<17.9	<17.9	**1900**
BS-17	10-04-2012	10	Excavated	<0.0243	**20.7**	**1220**	**9510**	**11200**	**181**
	11-12-2012	20	In-Situ	--	--	--	--	***2,177**	--
BS-18	10-04-2012	4	In-Situ	<0.00111	<0.00111	<16.6	**111**	**111**	**114**

Table 4
Historic Contamination Area Soil Sample Analytical Summary
Legacy Reserves, L.P. Chamberlin Site, 1RP-2391
Lea County, New Mexico

sample	Date	Depth	Status	Benzene	BTEX	GRO (C6 - C10)	DRO (>C10 - C28)	TPH (C6 - C28)	Chloride
OCD Recommended Cleanup Level:				**10**	**50**			**100**	
BS-19	10-04-2012	4	In-Situ	<0.00121	<0.00121	<18.1	**23.8**	**23.8**	**247**
Sidewall Samples									
SW-1	10-04-2012	4	In-Situ	<0.00106	<0.00106	<16.0	**115**	**115**	**540**
SW-2	10-04-2012	4	In-Situ	<0.00115	<0.00115	<17.4	**72.3**	**72.3**	**1650**
SW-3	10-04-2012	4	In-Situ	<0.00111	<0.00111	<16.7	**26.8**	**26.8**	**417**
SW-4	10-04-2012	4	In-Situ	<0.00110	<0.00110	<16.6	**30.4**	**30.4**	**48.5**
SW-5	10-04-2012	4	Excavated	<0.00115	<0.00115	<17.2	**94.9**	**94.9**	**369**
	11-12-2012	5	In-Situ	--	--	--	--	**109**	--
SW-6	10-04-2012	4	In-Situ	<0.00121	<0.00121	<18.2	**19.4**	<19.4	**531**
SW-7	10-04-2012	4	In-Situ	<0.00108	<0.00108	**16.8**	**23.7**	**40.5**	**3680**
SW-8	10-04-2012	4	In-Situ	<0.00103	<0.00103	<15.5	<15.5	<15.5	**22**
SW-9	10-04-2012	4	In-Situ	<0.00114	<0.00114	<17.2	**39.8**	**39.8**	**2620**
SW-10	10-04-2012	3	In-Situ	<0.00100	**0.0397**	**66.2**	**4270**	**4500**	**1780**
SW-11	10-04-2012	1	In-Situ	<0.00106	<0.00106	**22.5**	**1400**	**1530**	**859**
SW-12	10-04-2012	4	In-Situ	<0.00108	<0.00108	<16.2	**1870**	**1870**	**3520**

Notes: Samples were analyzed by Xenco Laboratories, Inc., Odessa, Texas)
Samples analyzed via EPA method SW-8021B (BTEX), SW-8015M (TPH), 418.1 equivelent (TPH) on 11-12-2012 and E-300 (chloride).
* Denotes field analysis by method 418.1 (equivelent).
Depth measurements are in feet below ground surface (bgs).
All concentrations are in milligrams per kilogram (mg/Kg) equivalent to parts per million (ppm).
Bold denotes analyte detected
Bold and highlighted denotes analyte detected above OCD recommended cleanup level

Table 5
Soil Boring Sample Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site (1RP-2391)
Lea County, New Mexico

Sample	Location	Date	Depth (Feet BGS)	Status	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg
OCD Limit:						**10**	**50**	**100**	
BH-1	Bottom West	03-12-2013	15 - 16	In-Situ	54	<0.01	**2.945**	**264**	**7,220**
	Bottom West	03-12-2013	20 - 22	In-Situ	373	<0.1	**22.69**	**505**	**856**
	Bottom West	03-12-2013	22 - 23	In-Situ	164	<0.2	**17.136**	**629**	**2,590**
	Bottom West	03-13-2013	25 - 26	In-Situ	20	<0.04	**0.495**	**66.1**	**561**
	Bottom West	03-13-2013	30 - 32	In-Situ	280	<0.2	**2.751**	**163**	**2,550**
	Bottom West	03-13-2013	32 - 34	In-Situ	167	<0.02	**0.1586**	**53.7**	**3,050**
	Bottom West	03-13-2013	34 - 35	In-Situ	27	<0.02	**0.0255**	<54	**2,550**
	Bottom West	03-13-2013	35 - 37	In-Situ	108	--	--	**123**	**2,060**
	Bottom West	03-13-2013	37 - 38	In-Situ	193	--	--	**453.8**	**2,270**
	Bottom West	03-13-2013	40 - 42	In-Situ	53	--	--	<54	**2,360**
	Bottom West	03-13-2013	42 - 43	In-Situ	0.1	--	--	**42.8**	**2,380**
BH-2	Bottom East	03-13-2013	17 - 18	In-Situ	87	<0.02	**0.02**	**59.1**	**1,150**
	Bottom East	03-13-2013	18 - 20	In-Situ	182	<0.1	**26.59**	**879**	**1,250**
	Bottom East	03-13-2013	23 - 25	In-Situ	217	<0.1	**6.091**	**306**	**1,020**
	Bottom East	03-13-2013	28 - 30	In-Situ	37.2	<0.02	**0.1065**	<54	**778**
	Bottom East	03-13-2013	30 - 31.5	In-Situ	2.8	<0.02	<0.02	<54	**576**
	Bottom East	03-13-2013	33 - 35	In-Situ	5.7	<0.02	<0.02	<54	**920**
	Bottom East	03-13-2013	35 - 37	In-Situ	57	--	--	**62.1**	**1,310**
	Bottom East	03-13-2013	38 - 40	In-Situ	1.4	--	--	<54	**1,240**
BH-3	Bottom Center	03-14-2013	5 - 7	In-Situ	163	<0.1	**0.745**	**2,404**	**1,270**
	Bottom Center	03-14-2013	10 - 12	In-Situ	571	<0.1	**16.94**	**5,867**	**1,280**
	Bottom Center	03-14-2013	20 - 21	In-Situ	650	<0.1	**15.529**	**2,186**	**1.58**
	Bottom Center	03-14-2013	25 - 26	In-Situ	885	<0.2	**32.675**	**3,901**	**1,420**
	Bottom Center	03-14-2013	30 - 32	In-Situ	929	<0.1	**10.606**	**724**	**758**
	Bottom Center	03-14-2013	32 - 34	In-Situ	580	<0.1	**14.715**	**1,064**	**913**
	Bottom Center	03-14-2013	35 - 37	In-Situ	1500	<0.1	**10.11**	**1,579**	**838**
	Bottom Center	03-14-2013	40 - 42	In-Situ	1484	<0.1	**16.692**	**1,059**	**250**
	Bottom Center	03-14-2013	45 - 47	In-Situ	965	<0.2	**8.357**	**1,286**	**1,300**
	Bottom Center	03-14-2013	47 - 48	In-Situ	153	<0.04	<0.04	**53**	**1,540**
	Bottom Center	03-14-2013	50 - 52	In-Situ	20	<0.02	<0.02	<54	**455**
	Bottom Center	03-14-2013	52 - 54	In-Situ	12.7	<0.02	<0.02	<54	**1,060**
	Bottom Center	03-14-2013	54 - 55	In-Situ	8	<0.02	<0.02	<54	**567**

Table 5
Soil Boring Sample Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site (1RP-2391)
Lea County, New Mexico

Sample	Location	Date	Depth (Feet BGS)	Status	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg
OCD Limit:						**10**	**50**	**100**	
BH-4	South	04-11-2013	0	In-Situ	0.0	--	--	**307**	<25
	South	04-11-2013	5	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	10	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	15	In-Situ		--	--	<54	<25
	South	04-11-2013	20	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	25	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	30	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	40	In-Situ	0.0	--	--	<54	<25
	South	04-11-2013	50	In-Situ	0.0	--	--	<54	<25
BH-5	West	04-11-2013	0	In-Situ	0.0	--	--	<58	**37.2**
	West	04-11-2013	5	In-Situ	0.0	--	--	<54	**1,990**
	West	04-11-2013	10	In-Situ	0.0	--	--	**255**	**2,670**
	West	04-11-2013	15	In-Situ	14.3	--	--	**479**	**2,210**
	West	04-11-2013	20	In-Situ	67.2	<0.100	<0.400	**281.44**	**1,610**
	West	04-11-2013	25	In-Situ	140.5	<0.04	**0.69**	**857.7**	**884**
	West	04-11-2013	30	In-Situ	1.4	--	--	<54	**1,140**
	West	04-11-2013	40	In-Situ	0.0	--	--	<54	**1,430**
	West	04-11-2013	50	In-Situ	0.0	--	--	<54	**1,530**
BH-6	North	04-11-2013	0	In-Situ	0.0	--	--	**140**	**1,900**
	North	04-11-2013	5	In-Situ	0.0	--	--	<54	**1,200**
	North	04-11-2013	10	In-Situ	0.0	--	--	<54	**3,870**
	North	04-11-2013	15	In-Situ	0.0	--	--	<54	**4,570**
	North	04-11-2013	20	In-Situ	0.0	--	--	<54	**2,310**
	North	04-11-2013	25	In-Situ	0.0	--	--	<54	**2,010**
	North	04-11-2013	30	In-Situ	0.0	--	--	<54	**2,310**
	North	04-11-2013	40	In-Situ	0.0	--	--	<54	**1,810**
	North	04-11-2013	50	In-Situ	0.0	--	--	<54	**848**
BH-7	East	04-11-2013	0	In-Situ	0.0	--	--	<58	**126**
	East	04-11-2013	5	In-Situ	0.0	--	--	<54	**42.5**
	East	04-11-2013	10	In-Situ	0.0	--	--	<54	**315**
	East	04-11-2013	15	In-Situ	0.0	--	--	<54	**115**

Table 5
Soil Boring Sample Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site (1RP-2391)
Lea County, New Mexico

Sample	Location	Date	Depth (Feet BGS)	Status	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg
OCD Limit:						**10**	**50**	**100**	
	East	04-11-2013	20	In-Situ	0.0	--	--	<54	**627**
	East	04-11-2013	25	In-Situ	0.0	--	--	<54	**850**
	East	04-11-2013	30	In-Situ	0.0	--	--	<54	**536**
	East	04-11-2013	40	In-Situ	0.0	--	--	<54	**523**
	East	04-11-2013	50	In-Situ	0.0	--	--	<54	**582**
BH-8	West of BH-5	04-12-2013	0	In-Situ	0.0	--	--	<54	**30.1**
		04-12-2013	5	In-Situ	0.0	--	--	<54	**65.7**
		04-12-2013	10	In-Situ	0.0	--	--	<54	**1,150**
		04-12-2013	15	In-Situ	0.0	--	--	<54	**2,370**
		04-12-2013	20	In-Situ	0.0	--	--	<54	**935**
		04-12-2013	25	In-Situ	0.0	--	--	<54	**853**
		04-12-2013	30	In-Situ	0.0	--	--	<54	**1,650**
		04-12-2013	40	In-Situ	0.0	--	--	<54	**945**
		04-12-2013	50	In-Situ	0.0	--	--	<54	**118**
BH-9	West of BH-8	6/11/2013	0	In-Situ	1.4	--	--	--	<25.0
		6/11/2013	5	In-Situ	0.0	--	--	--	**418**
		6/11/2013	10	In-Situ	0.0	--	--	--	**1,460**
		6/11/2013	15	In-Situ	0.0	--	--	--	156
		6/11/2013	20	In-Situ	0.0	--	--	--	187
		6/11/2013	25	In-Situ	0.0	--	--	--	80.8
		6/11/2013	30	In-Situ	0.0	--	--	--	51.8
		6/11/2013	40	In-Situ	0.0	--	--	--	32.8
		6/11/2013	50	In-Situ	0.0	--	--	--	<25.0
TMW-1	Southeast	6/10/2013	0	In-Situ	1.0	--	--	--	83.7
	Southeast	6/10/2013	5	In-Situ	1.0	--	--	--	38.2
	Southeast	6/10/2013	10	In-Situ	0.0	--	--	--	189
	Southeast	6/10/2013	15	In-Situ	0.0	--	--	--	<25.0
	Southeast	6/10/2013	20	In-Situ	0.0	--	--	--	<25.0
	Southeast	6/10/2013	25	In-Situ	0.0	--	--	--	**309**
	Southeast	6/10/2013	30	In-Situ	0.0	--	--	--	<25.0
	Southeast	6/10/2013	40	In-Situ	0.0	--	--	--	<25.0

Table 5
Soil Boring Sample Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site (1RP-2391)

Sample	Location	Date	Depth (Feet BGS)	Status	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg
OCD Limit:						**10**	**50**	**100**	
	Southeast	6/10/2013	50	In-Situ	0.0	--	--	--	<25.0
Soil Pile						--	--		
SP-1	South	04-12-2013	--	Excavated	0.0	--	--	<54	**205**
SP-2	North	04-12-2013	--	Excavated	0.0	--	--	**85.2**	**1,440**
SP-3	Southeast	6/11/2013	--	Excavated	--	--	--	**2340**	**5,480**

Notes: Analysis performed by Trace Analysis, Midland and Lubbock, Texas
Depth is in feet below ground surface
mg/Kg denotes concentration in milligrams per kilogram equivalent to parts per million (ppm)
Exceeds OCD Recommended Remediation Action Level (RRAL)

Table 6
Monitoring Well Drilling and Completion Summary
Legacy Reserves, L.P., Chamberlin Site , 1RP-2391
Lea County, New Mexico

Well Information									Groundwater Data		
Well ID	Date Drilled	Drilled Depth (feet bgs)	Well Depth (feet TOC)	Well Diameter (inches)	Surface Elevation	Screen Interval (feet bgs)	Casing Stickup (feet)	TOC Elevation	Date Gauged	Depth to Water (TOC)	Groundwater Elevation
TMW-1	6/10/2013	75.42	78.40	2	--	54.77 - 74.72	2.78	--	06/10/2013 06/11/2013	65.82 65.85	-- --

Notes: Monitoring well drilled using air rotary rig by Scarborough Drilling, Inc., Lamesa, Texas and constructed with 2-inch threaded schedule 40 PVC casing and screen
All values are in feet, unless otherwise noted.
bgs - below ground surface
TOC - top of casing

Table 7
Groundwater Organic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Limit:		**0.01**	**0.75**	**0.75**	**0.62**
TMW-1	06/11/2013	<0.001	<0.001	<0.001	<0.003

Notes: Analysis performed by Permian Basin Environmental Lab, Midland, Texas

All values except pH reported in milligrams per Liter - (mg/L, parts per million).

Table 8
Groundwater Inorganic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

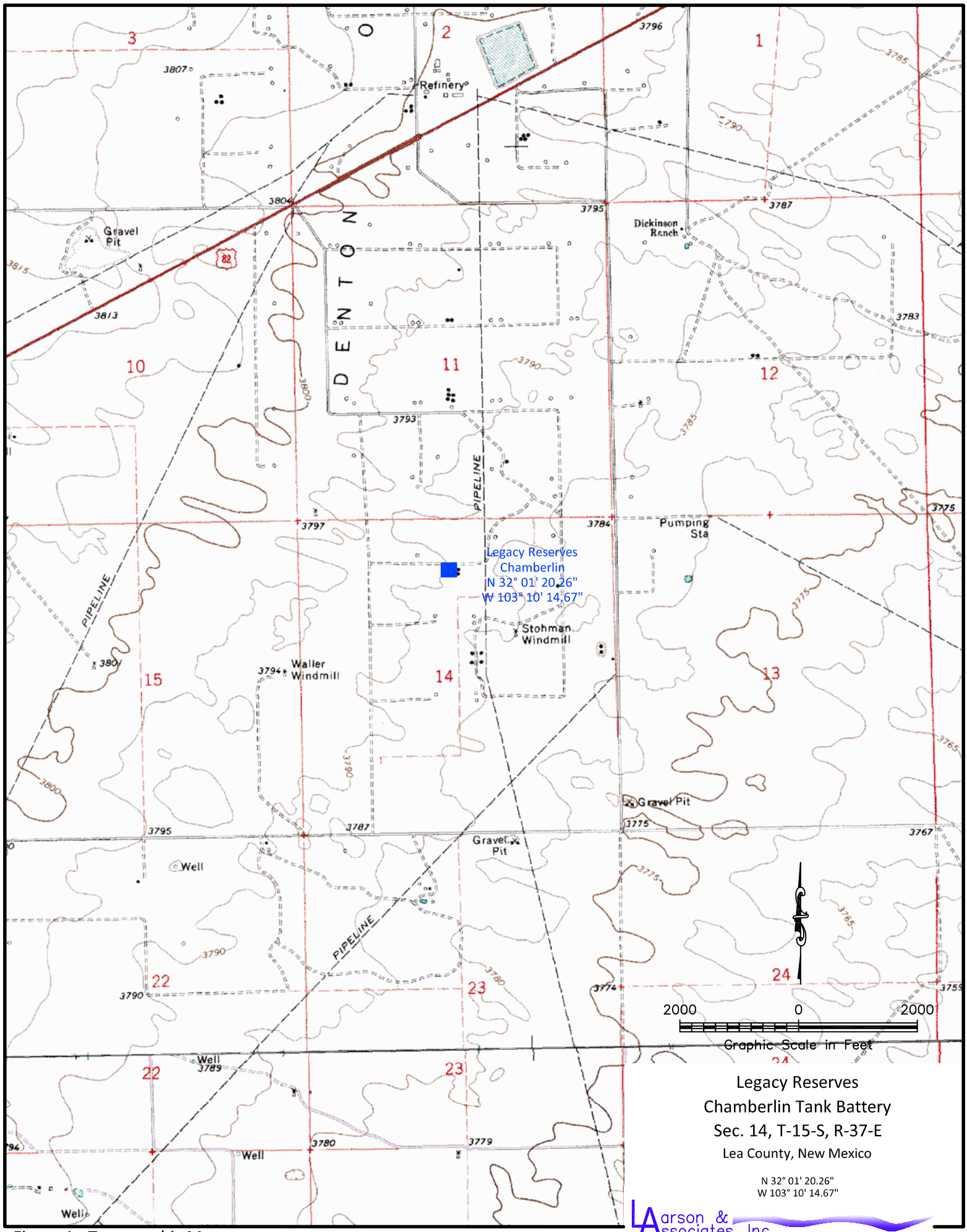
Sample ID	Date	Alkalinity (mg/L)	Chloride (mg/L)	Nitrate - N (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
WQCC Limit:			**250**	**10**	**1000**	**600**				
TMW-1	06/11/2013	272	**263**	8.53	1,180	206	94	230	7.20	51

Notes: Analysis performed by Permian Basin Environmental Lab, Midland, Texas

All values except pH reported in milligrams per Liter - (mg/L, parts per million).

Blue indicates the value exceeds WQCC Domestic Water Quality Standard

FIGURES



Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 32° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map

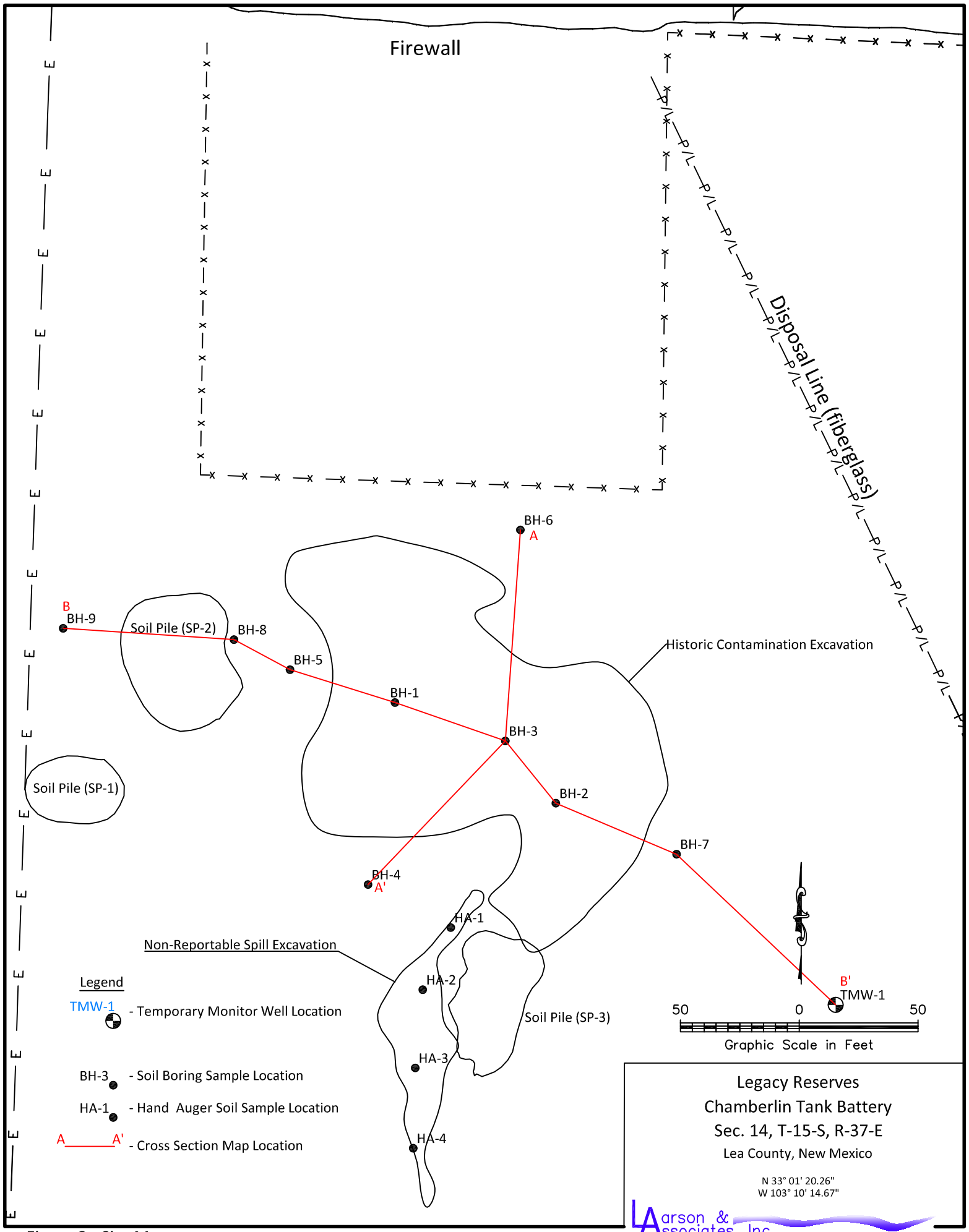
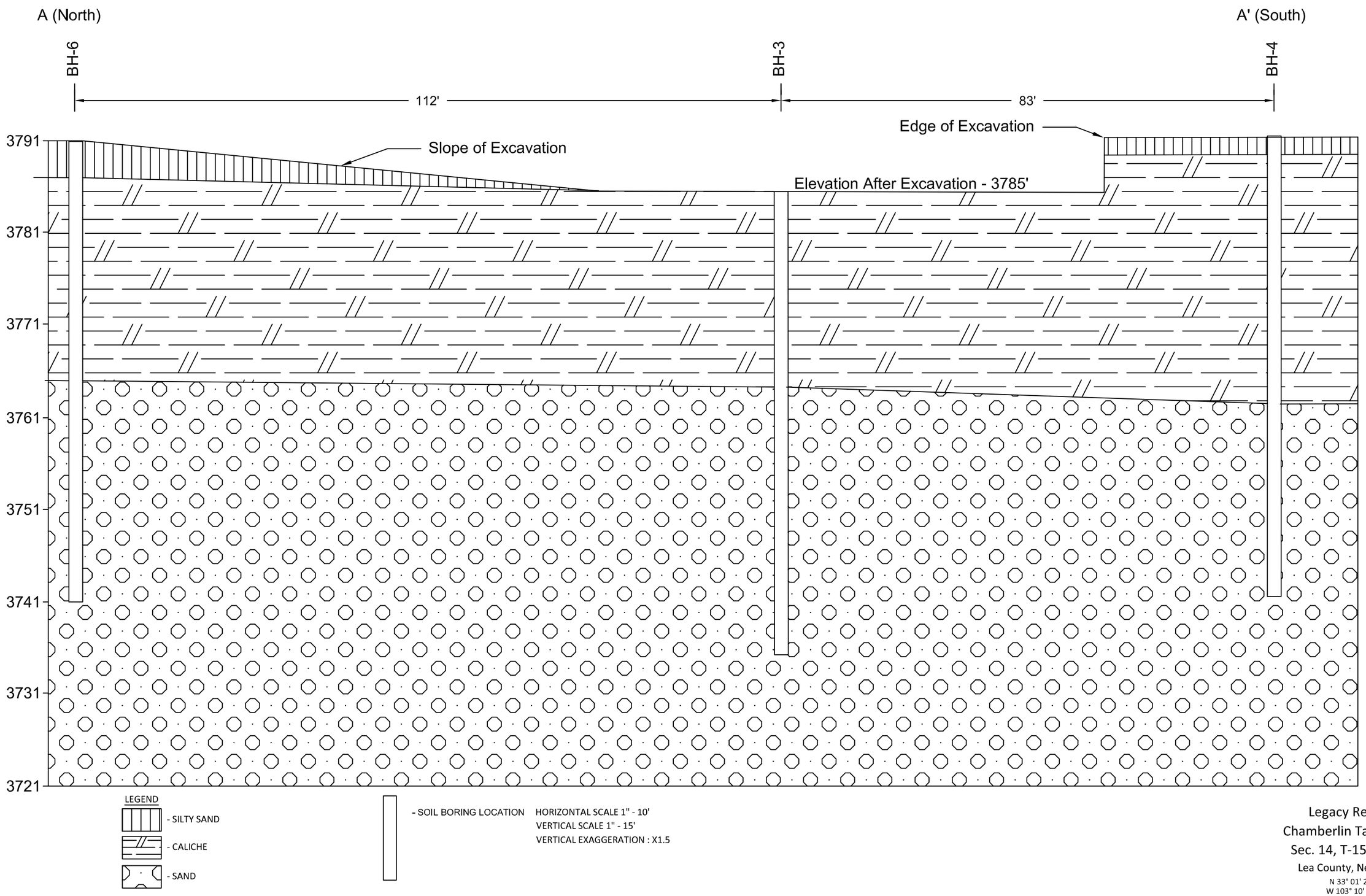


Figure 3 - Site Map



Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 4 - Geological Cross Section Map A-A'

V:\PROJECTS\Legacy\Cross Section 2013.dwg, 8/1/2013 9:49:58 AM

B (West)

B' (East)

BH-9 | BH-8 | BH-5 | BH-1 | BH-3 | BH-2 | BH-7 | TMW-1

73' | 27' | 48' | 50' | 35' | 56' | 94'

3791
3781
3771
3761
3751
3741
3731
3721
3711

Excavated Soil

Bench

Fill

Fill

LEGEND

- SILTY SAND
- BACKFILL
- CALICHE
- SAND
- SOIL BORING LOCATION
- WELL SCREEN LOCATION

HORIZONTAL SCALE 1" - 10'
VERTICAL SCALE 1" - 26'
VERTICAL EXAGGERATION : X2.6

- GROUNDWATER POTENTIOMETRIC SURFACE
- ESTIMATED GROUNDWATER POTENTIOMETRIC SURFACE

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

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Figure 5 - Geological Cross Section Map B-B'

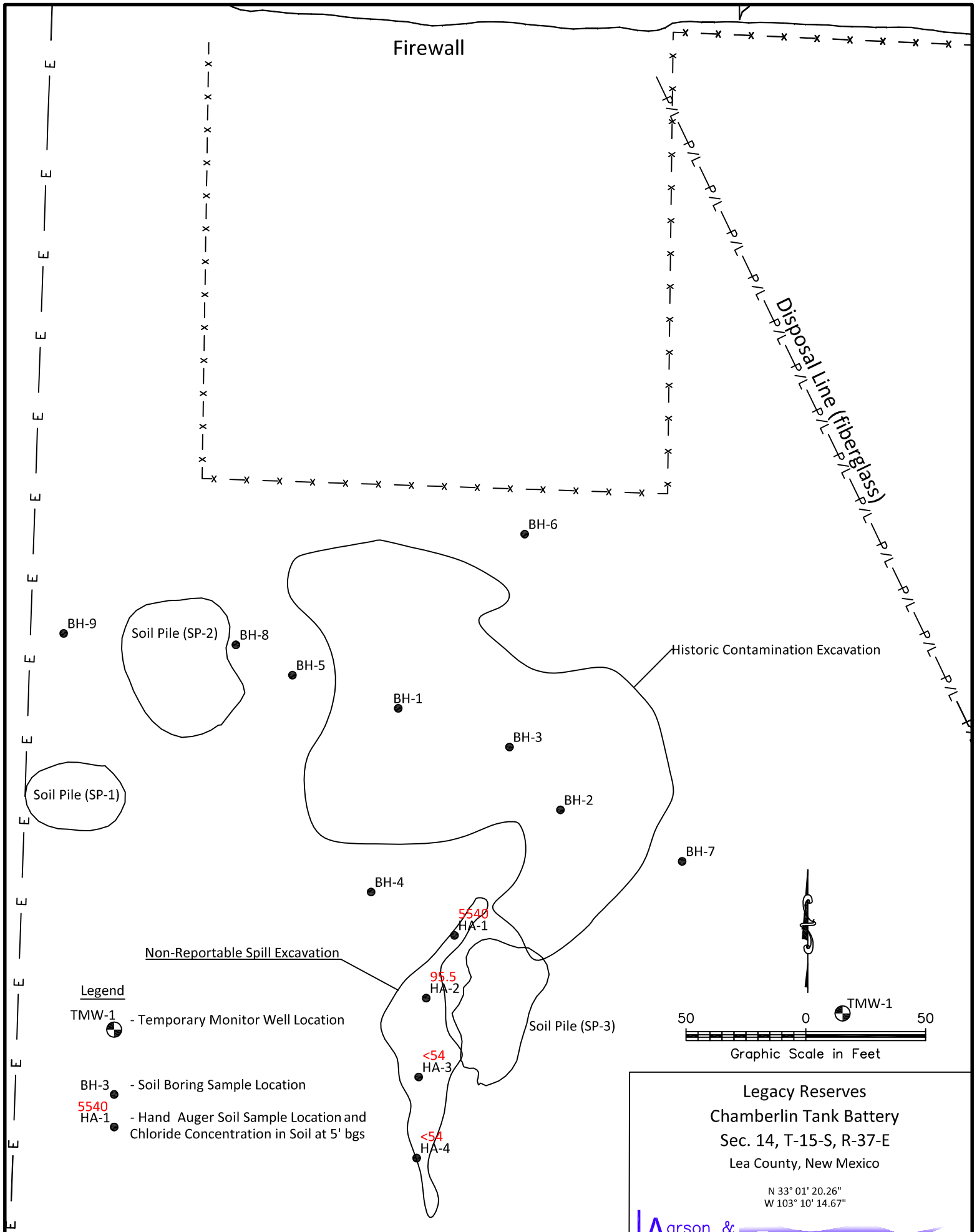


Figure 6 - Chloride Concentrations in Soil at 5' bgs

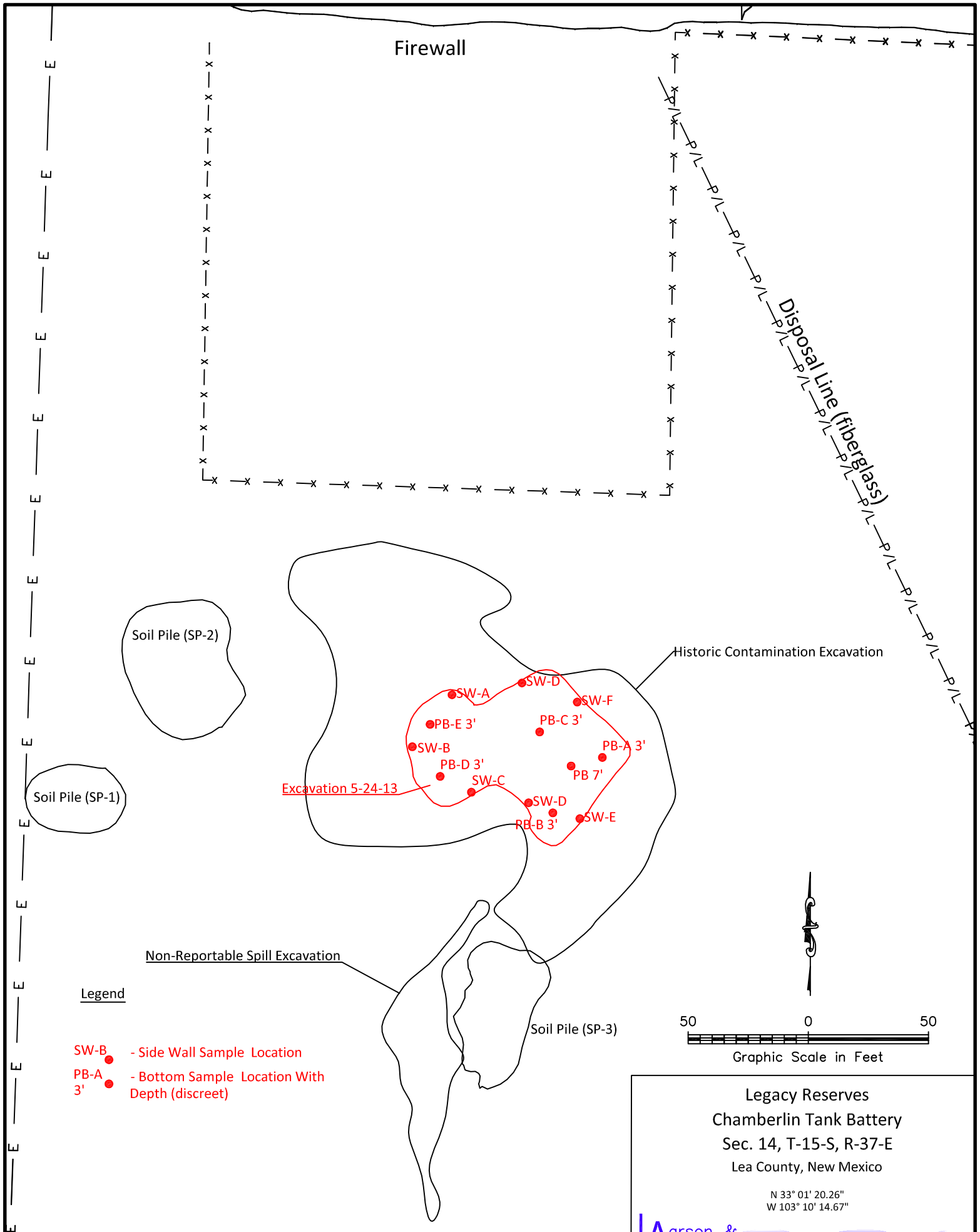


Figure 7a - Excavation Sample Locations Map, May 24, 2012

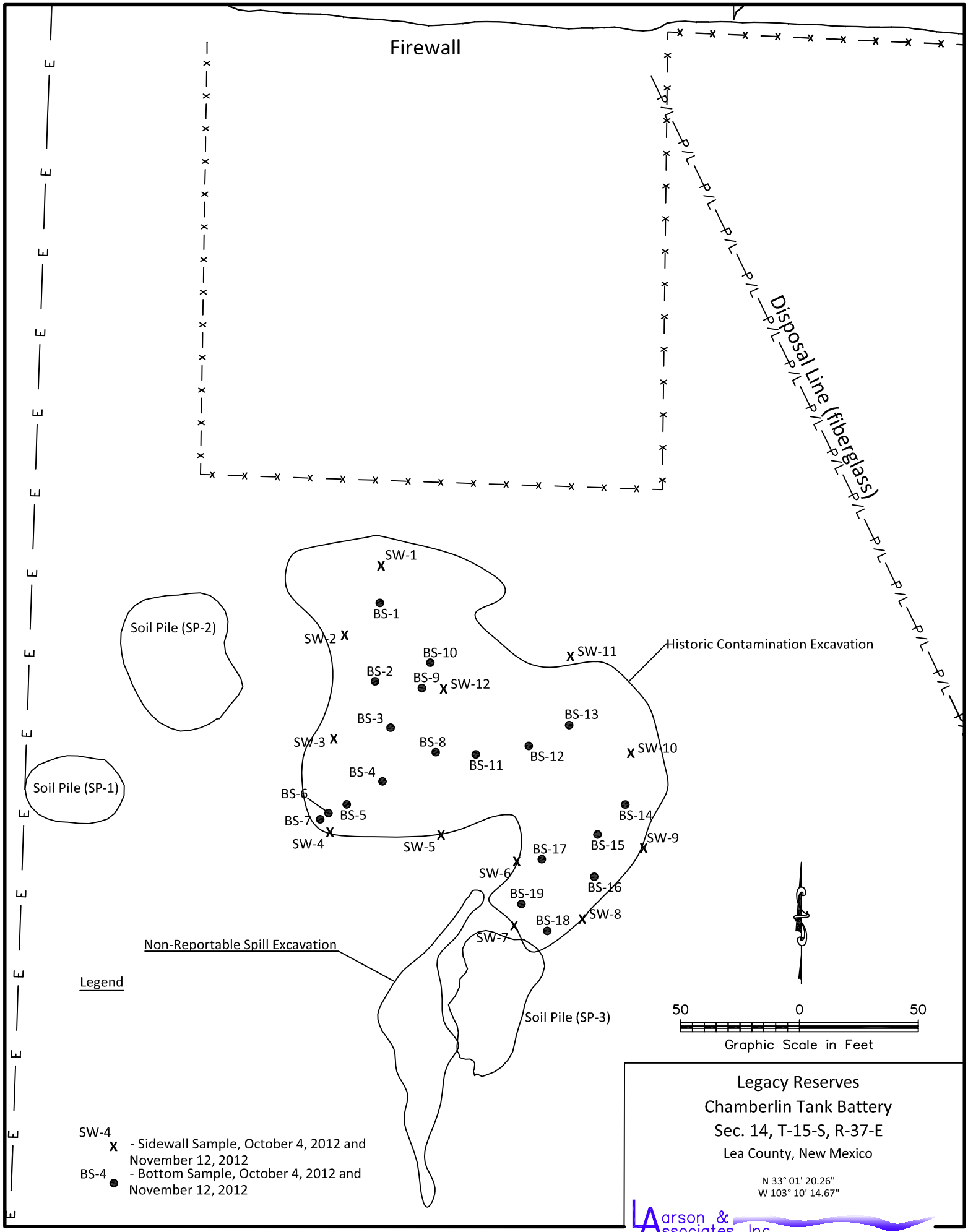


Figure 7b - Excavation Sample Locations Map, October 4, 2012 and November 12, 2012

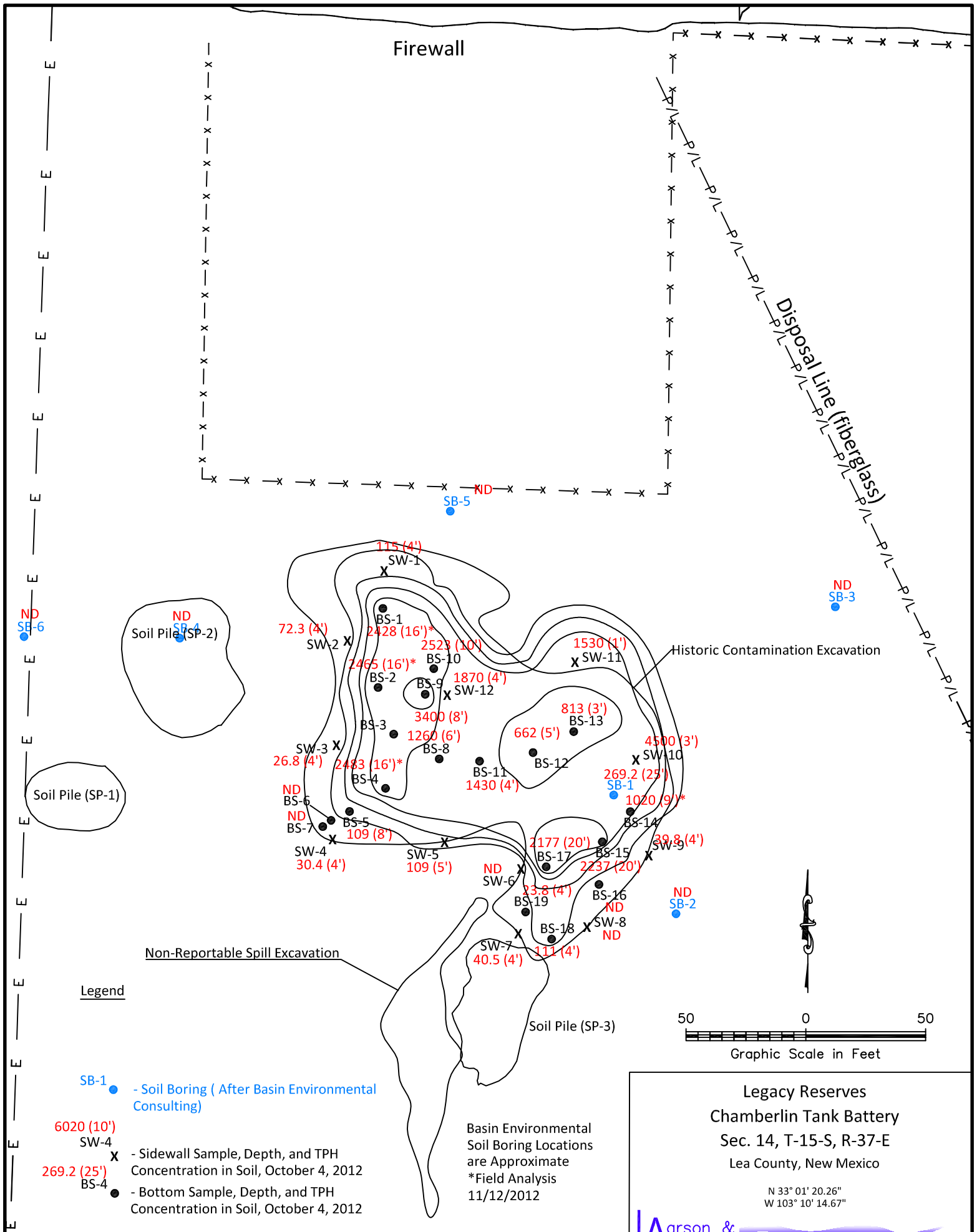


Figure 8a - TPH Concentrations in Excavation Samples, October 4, 2012

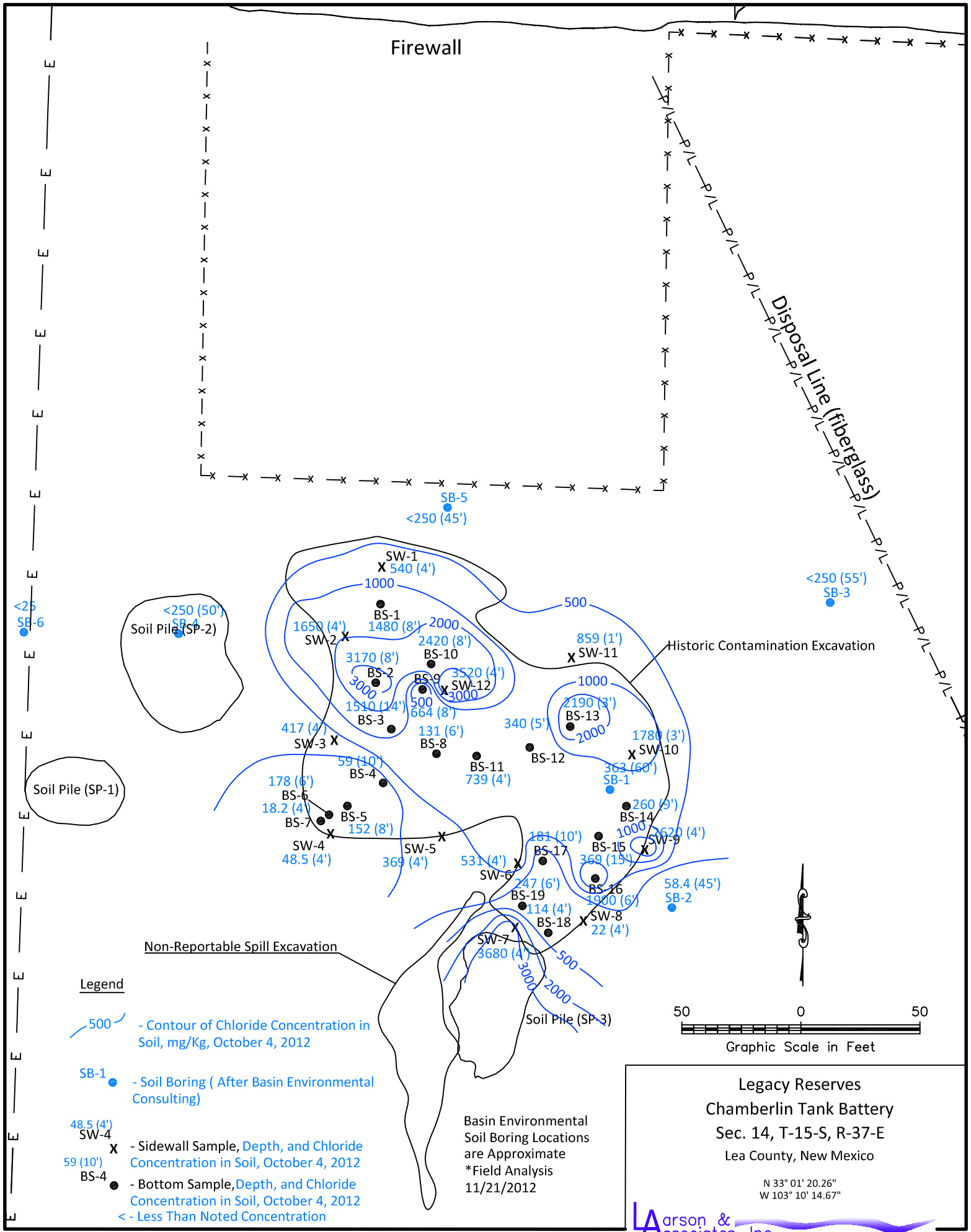


Figure 8b - Chloride Concentrations in Excavation Samples, October 4, 2012

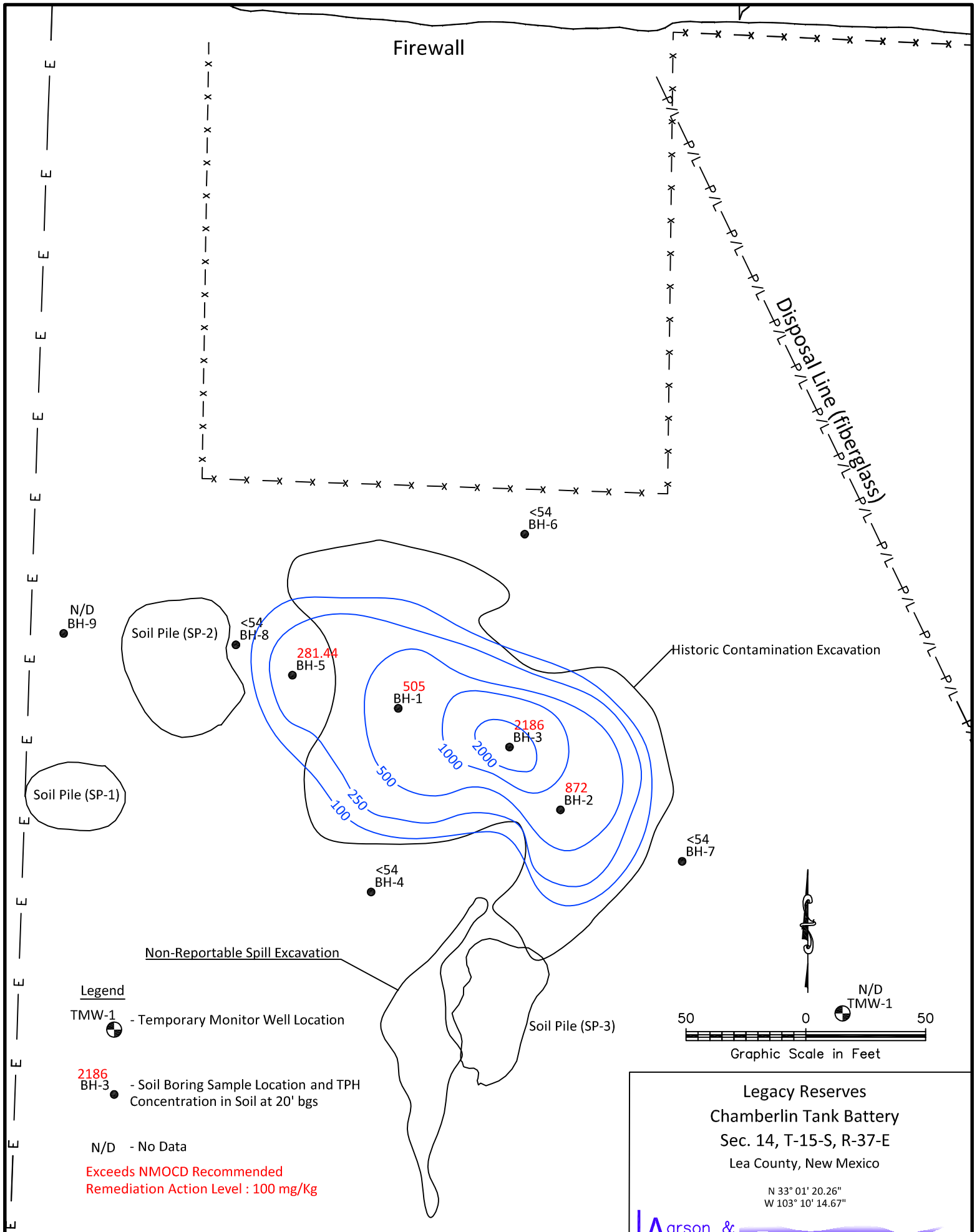


Figure 9a - TPH Concentrations in Soil at 20' bgs

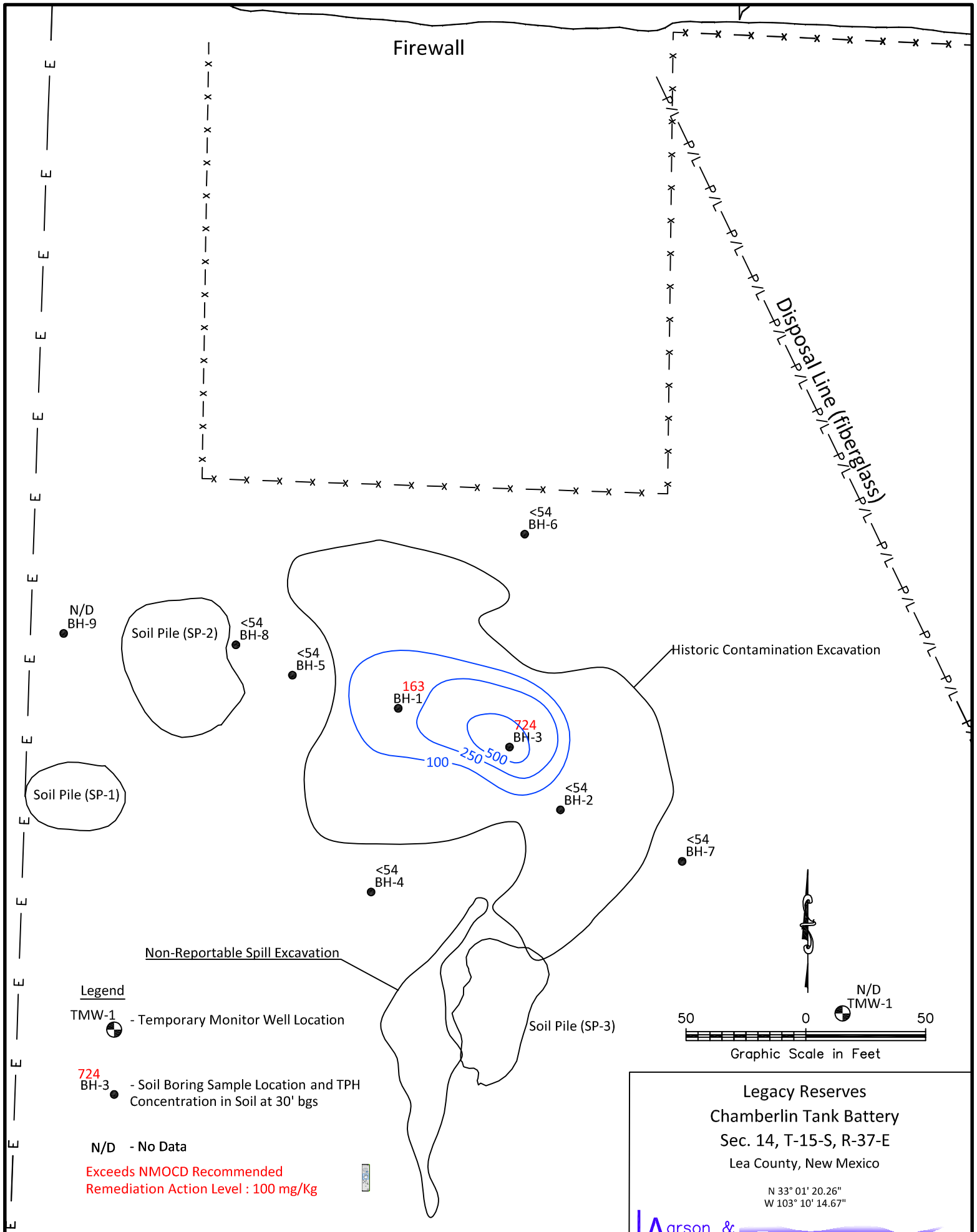


Figure 9b - TPH Concentrations in Soil at 30' bgs

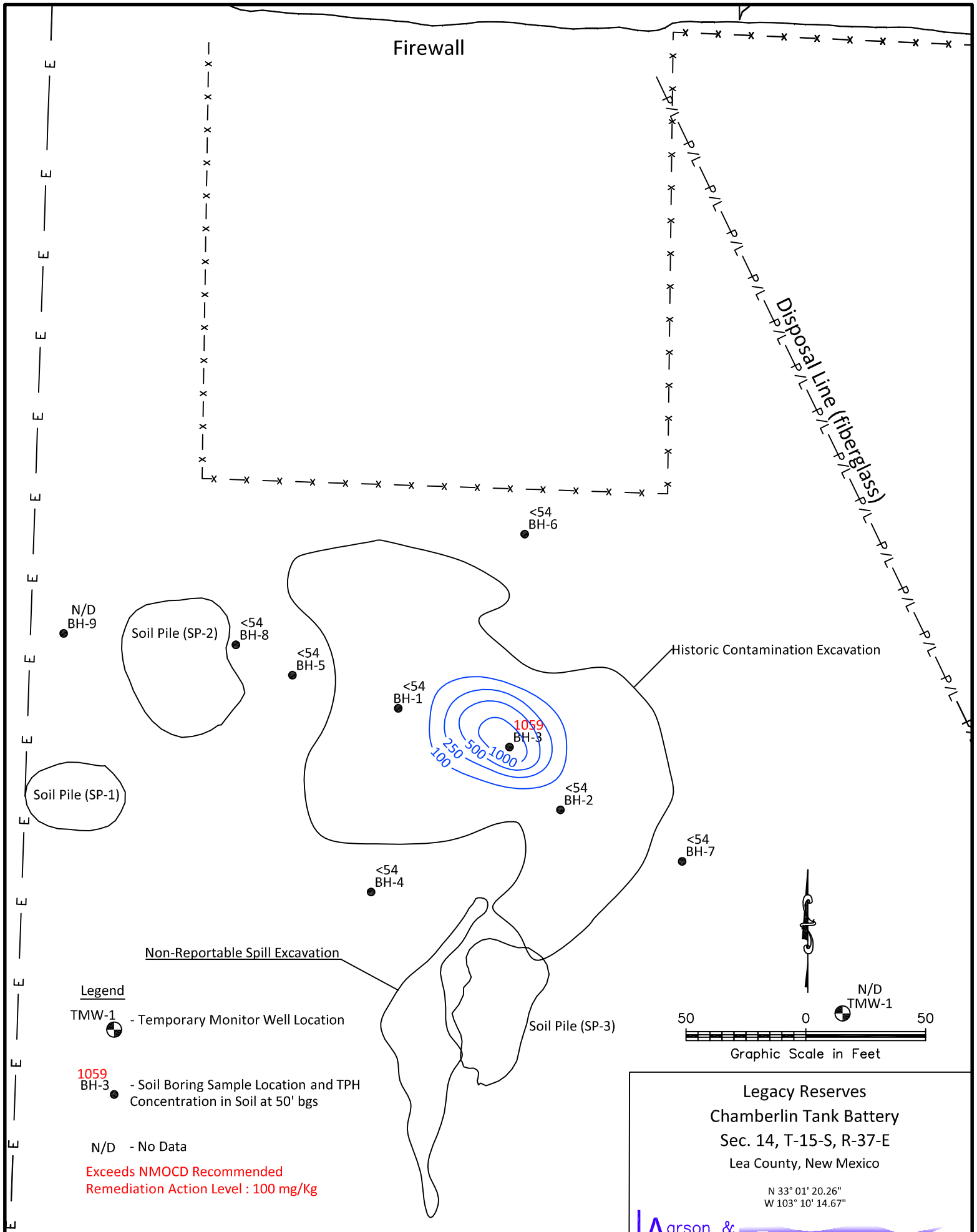


Figure 9c - TPH Concentrations in Soil at 50' bgs

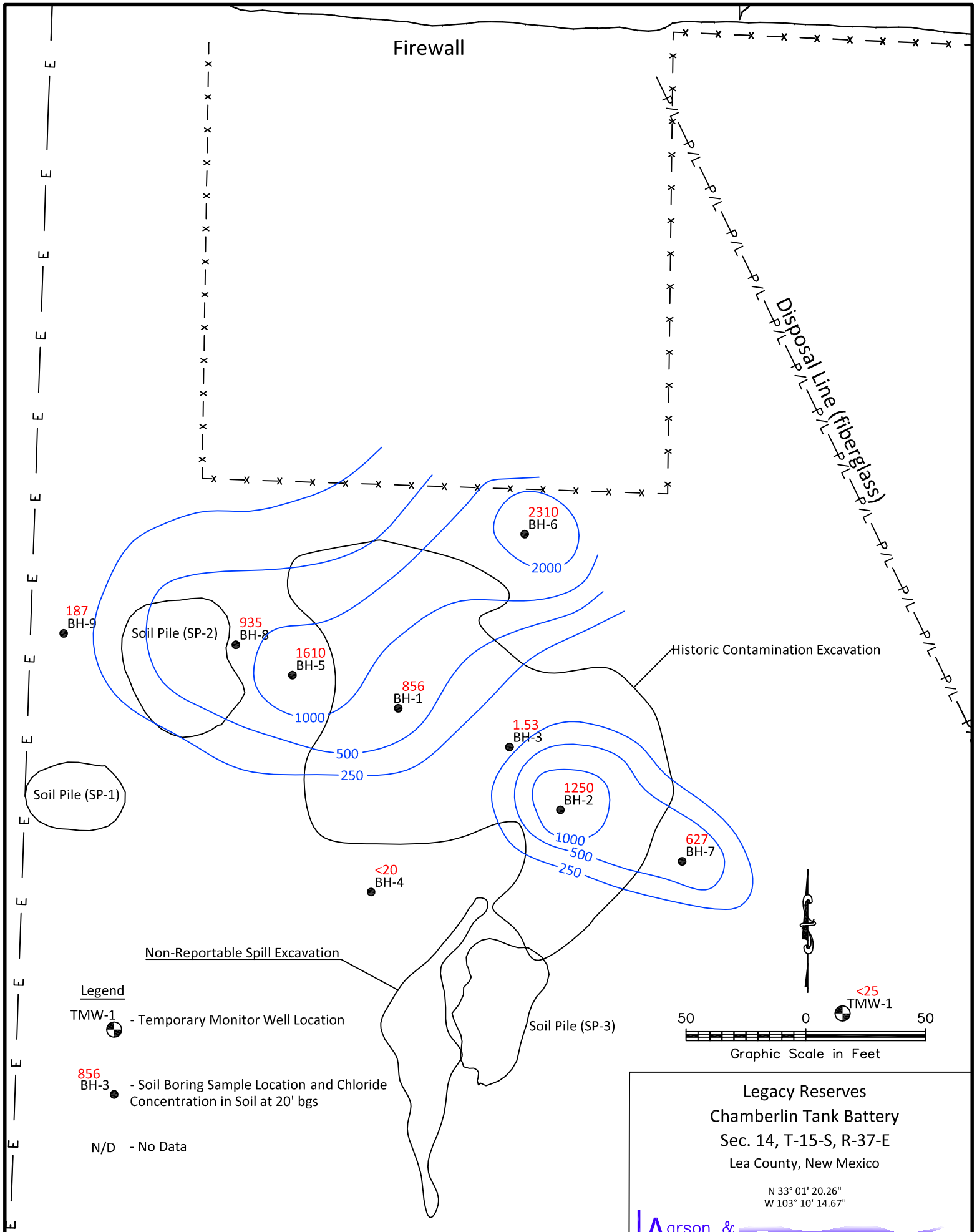


Figure 10a - Chloride Concentrations in Soil at 20' bgs

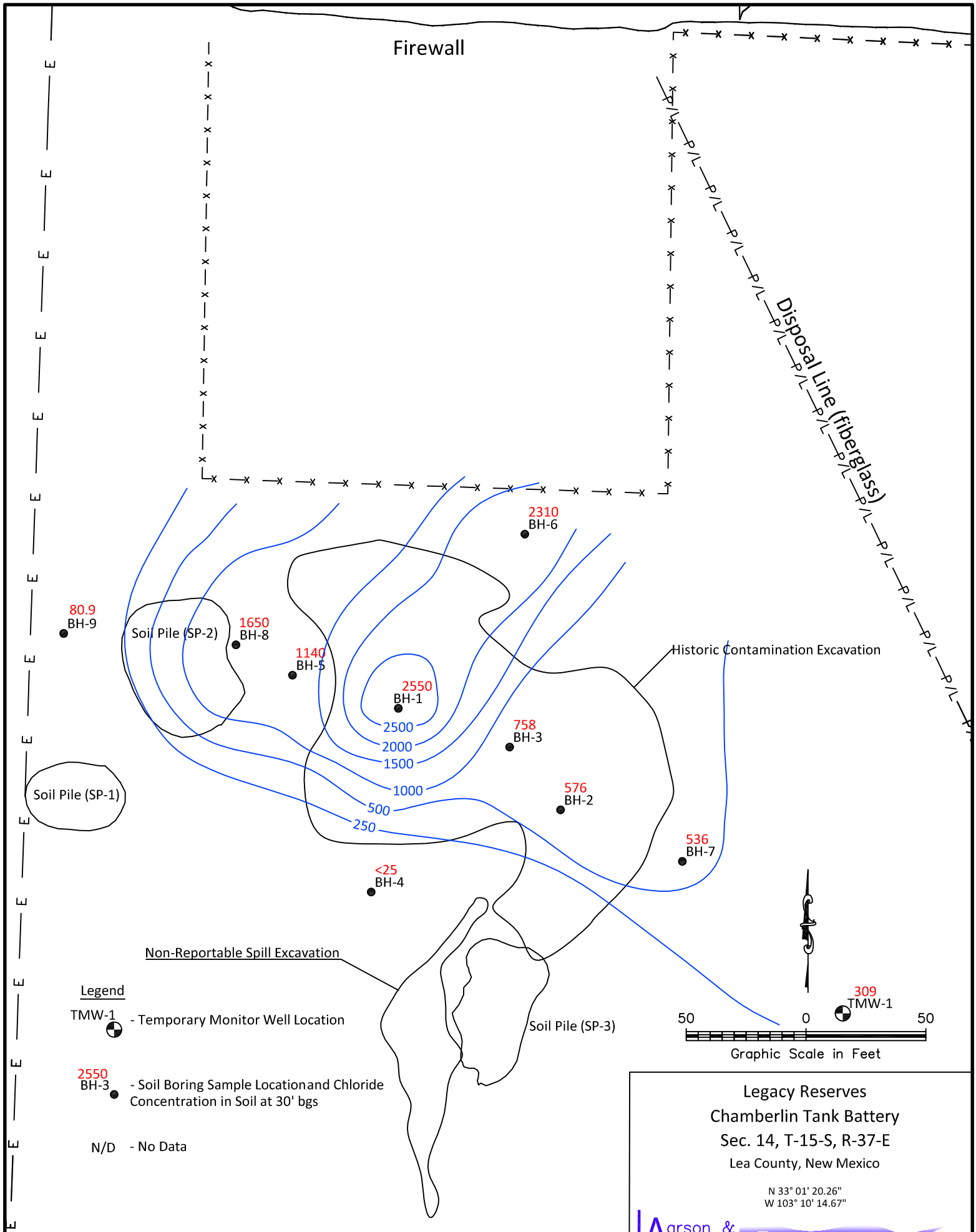


Figure 10b - Chloride Concentrations in Soil at 30' bgs

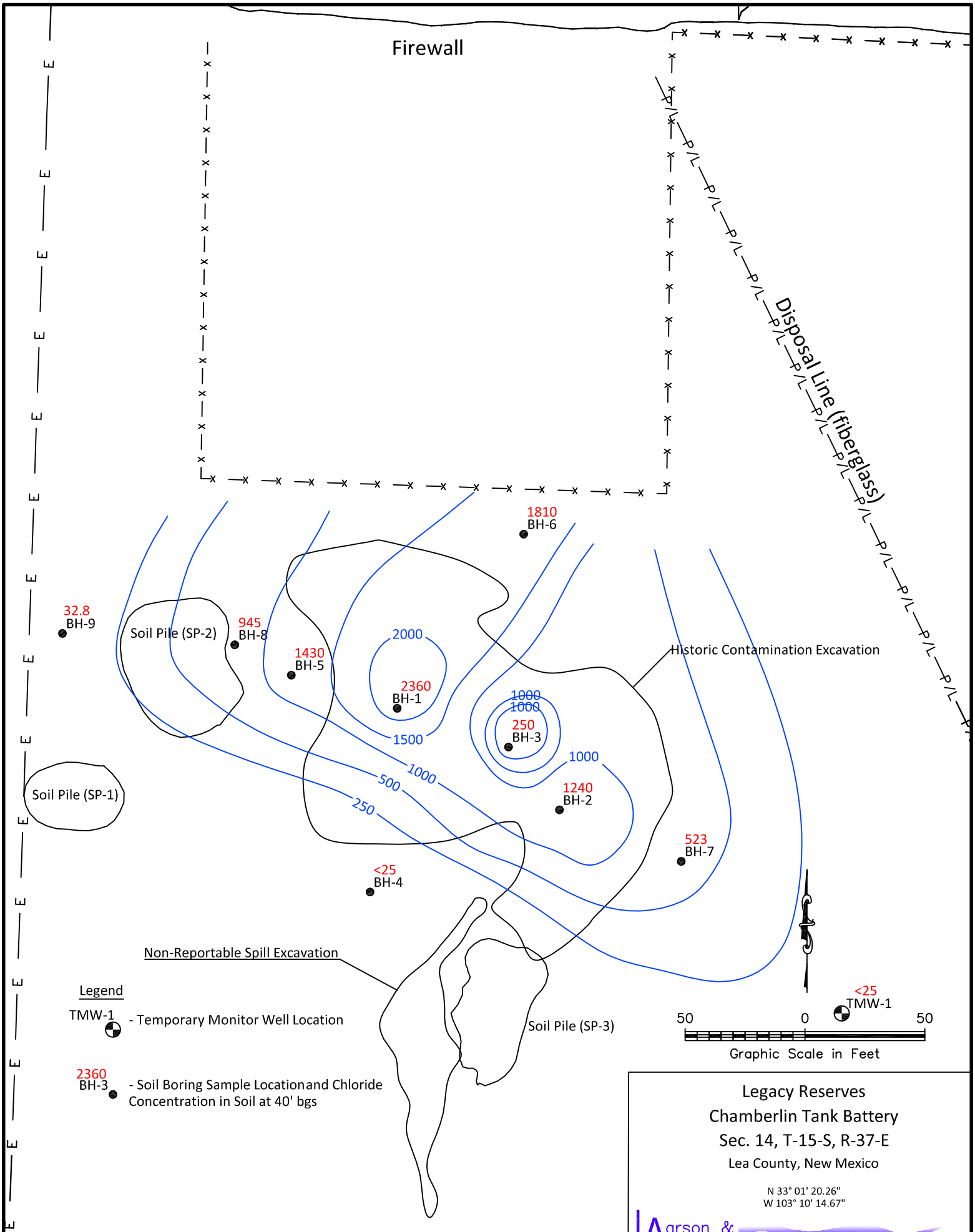
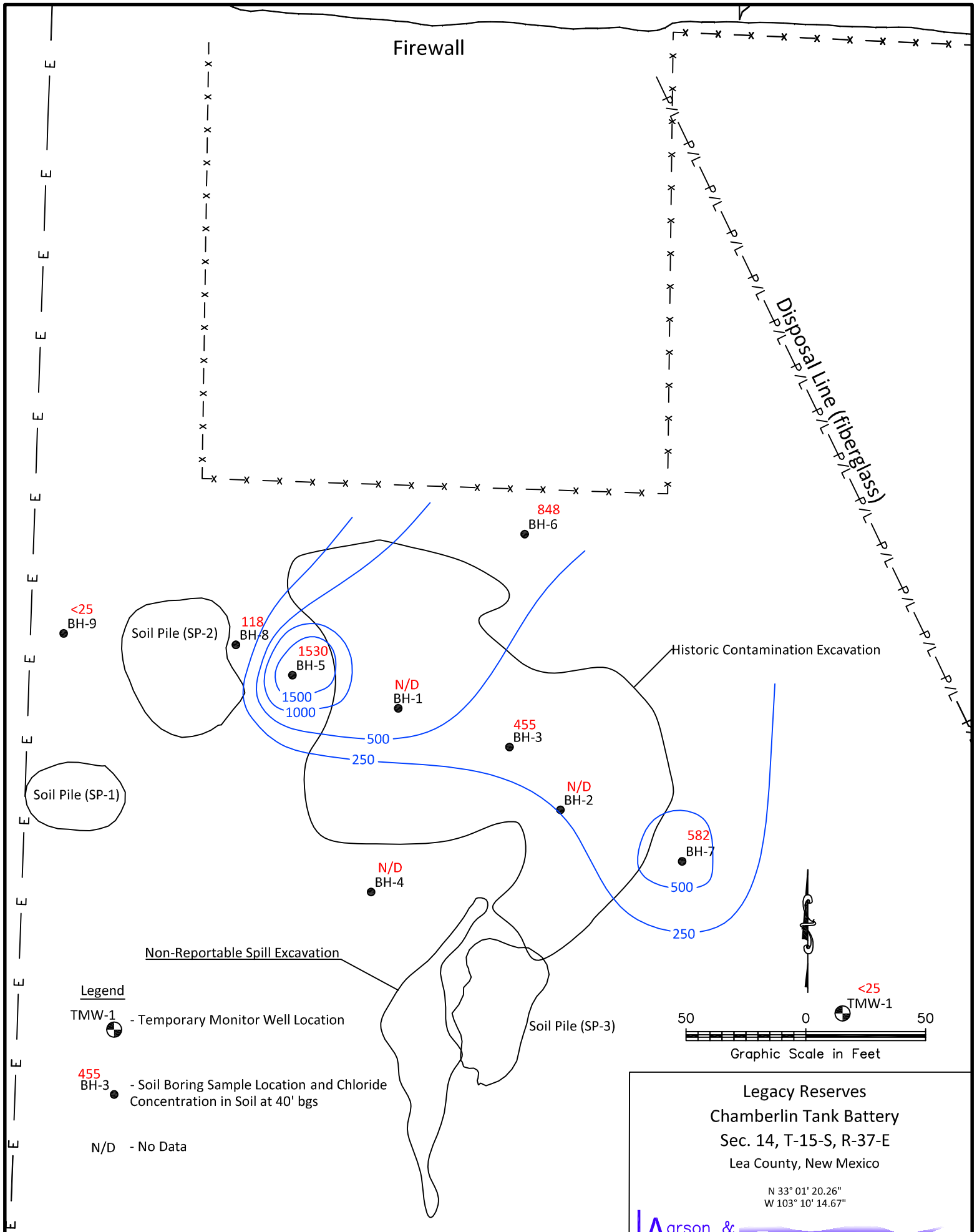


Figure 10c - Chloride Concentrations in Soil at 40' bgs



Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 10d - Chloride Concentrations in Soil at 50' bgs

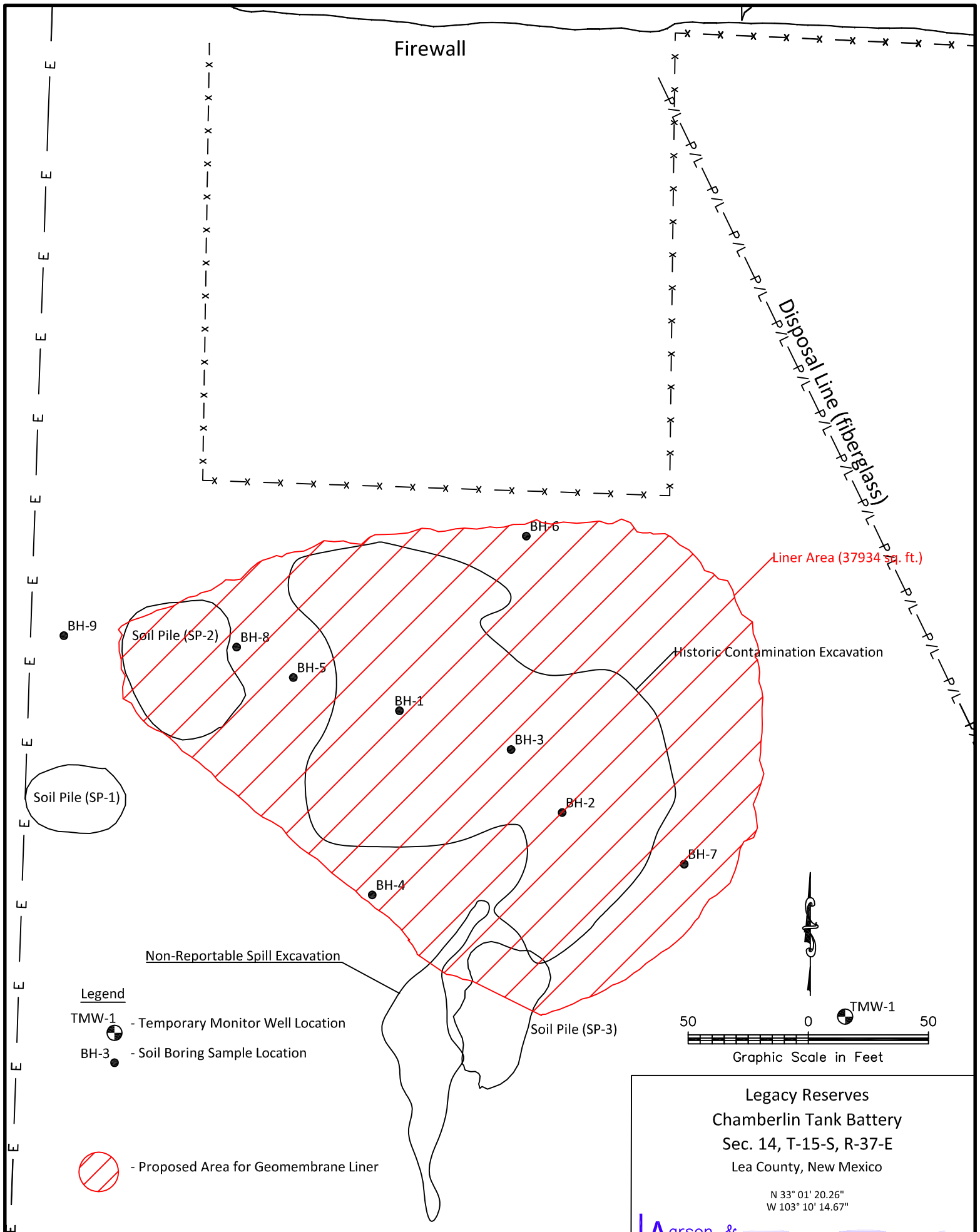


Figure 11 - Area of Geosynthetic Liner

APPENDIX A

Historic and Aerial Photographs

V:\PROJECTS\Legacy\LEGACY RESERVES - CHAMBERLIN.dwg, 7/15/2013 4:23:58 PM

N
W E
S

JOB #: 45095 - 8/7/2012

SITE: LEGACY - CHAMBERLIN
SOURCE: USGS
DATE: 2011
COUNTY: LEA, NM
SCALE: 1" = 700'

GeoSearch

V:\PROJECTS\Legacy\LEGACY RESERVES - CHAMBERLIN.dwg, 7/15/2013 4:25:16 PM

N
W E
S

JOB #: 45095 - 8/7/2012

SITE: LEGACY - CHAMBERLIN
SOURCE: USGS
DATE: 1996
COUNTY: LEA, NM
SCALE: 1" = 700'

GeoSearch

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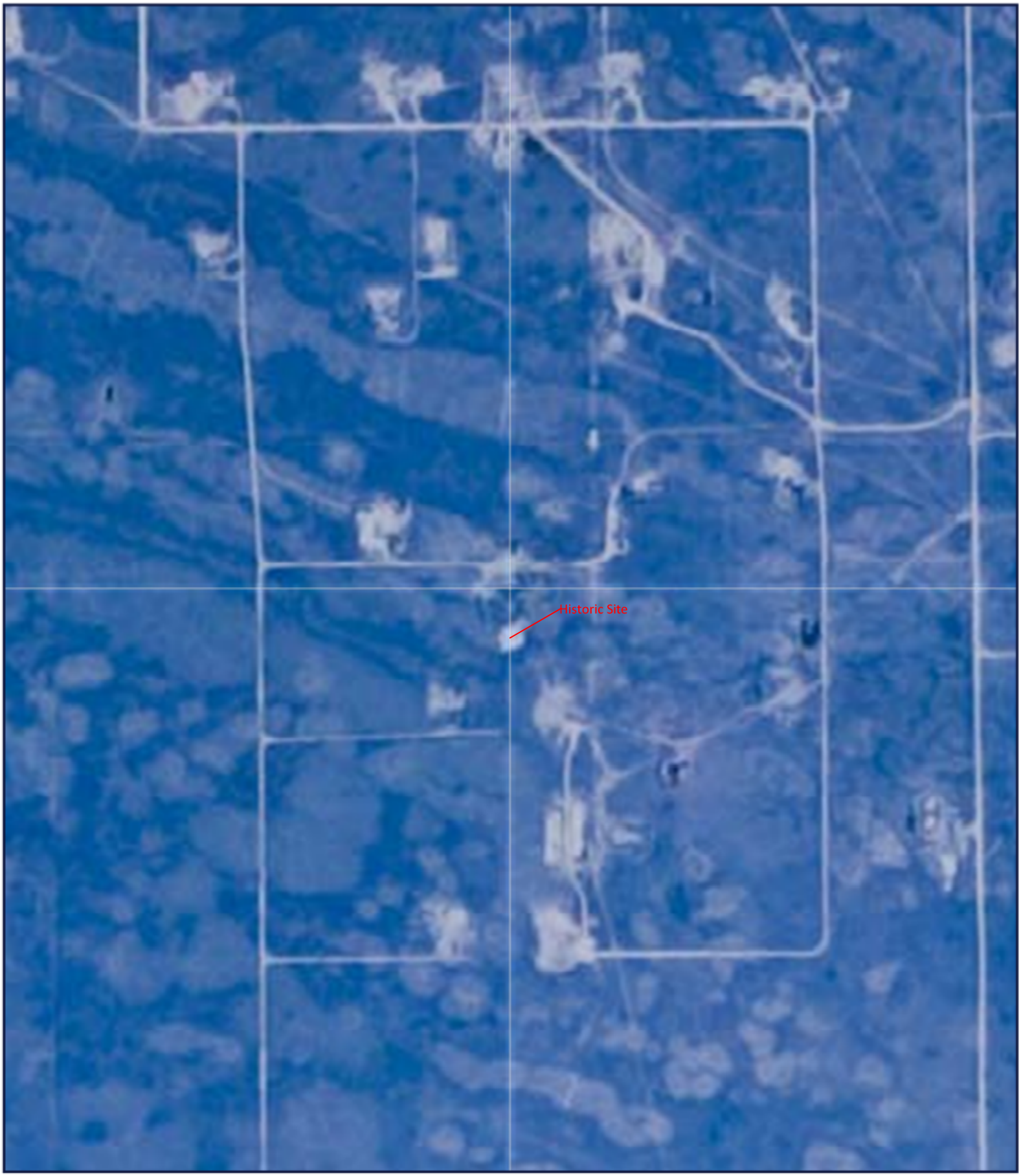

N
W E
S

JOB #: 45095 - 8/7/2012

SITE: LEGACY - CHAMBERLIN
SOURCE: USGS
DATE: 6-3-1983
COUNTY: LEA, NM
SCALE: 1" = 700'

GeoSearch

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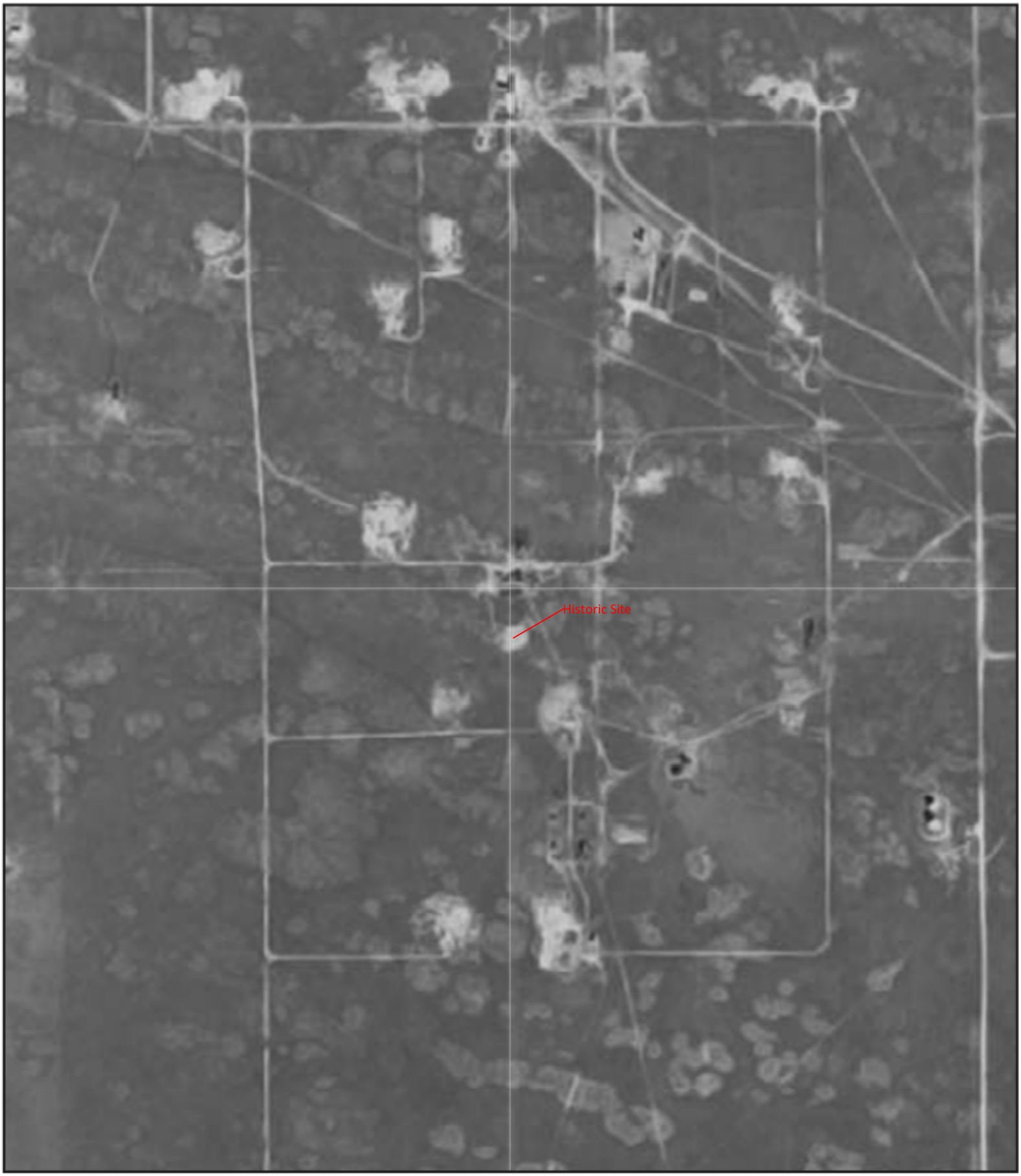


N
W E
S

JOB #: 45095 - 8/7/2012

SITE: LEGACY - CHAMBERLIN
SOURCE: USGS
DATE: 11-17-1978
COUNTY: LEA, NM
SCALE: 1" = 700'

GeoSearch

V:\PROJECTS\Legacy\LEGACY RESERVES - CHAMBERLIN.dwg, 7/15/2013 4:27:57 PM

N
W E
S

JOB #: 45095 - 8/7/2012

SITE: LEGACY - CHAMBERLIN
SOURCE: USGS
DATE: 2-8-1968
COUNTY: LEA, NM
SCALE: 1" = 700'

GeoSearch

APPENDIX B

Laboratory Reports

APPENDIX C

Photographs

PHOTOGRAPHS

Legacy Chamberlain Lease Sign, April 4, 2012

Northwest Corner of Excavation (After May 2009) Viewing Northwest, April 4, 2012

PHOTOGRAPHS

Northwest Corner of Excavation (After May 2009) Viewing West, April 4, 2012

West Side of Excavation (After May 2009) Viewing Southwest, April 4, 2012

PHOTOGRAPHS

East Side of Excavation (After May 2009) Viewing North, April 4, 2012

Northwest Corner of Excavation Viewing North, August 24, 2012

PHOTOGRAPHS

Northwest Corner of Excavation Viewing Northwest, August 24, 2012

Northeast Corner of Excavation Viewing East, August 24, 2012

PHOTOGRAPHS

Southeast Corner of Excavation Viewing East, August 24, 2012

East Side of Excavation Viewing East, August 24, 2012

PHOTOGRAPHS

Northeast Corner of the Initial Soil Excavation Looking North, August 24, 2012

West Side of Excavation Viewing North, October 4, 2012

PHOTOGRAPHS

East Side of Excavation Viewing North, October 4, 2012

Southwest Corner of Excavation Viewing Southwest, October 4, 2012

PHOTOGRAPHS

Central Area of Excavation Viewing South, October 4, 2012

East Side of Excavation Viewing Southeast, October 4, 2012

PHOTOGRAPHS

Northeast Corner of Excavation Viewing Northeast, November 12, 2012

Southeast Corner of Excavation Viewing Southeast, November 12, 2012

PHOTOGRAPHS

Drilling at Location BH-2 Viewing South, March 13, 2013

East Side of Excavation Viewing North, July 9, 2013

PHOTOGRAPHS

East Side of Excavation Viewing South, July 9, 2013

Central Area of Excavation Viewing South, July 9, 2013

PHOTOGRAPHS

Central Area of Excavation Viewing North, July 9, 2013

West Side of Excavation Viewing West, July 9, 2013

PHOTOGRAPHS

West Side of Excavation Viewing South, July 9, 2013

Excavation Viewing Southeast, July 9, 2013

PHOTOGRAPHS

Flow Line (Non-Reportable Spill) Excavation Viewing South, July 9, 2013

APPENDIX D

Boring Logs and Monitoring Well Record

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0					NO WELL COMPLETED
	15	PIT BOTTOM	Caliche			
		Caliche : Light Gray (2.5YR 7/2) very fine grained quartz sand, soft to moderately hard, indurated, dry, hydrocarbon stain and odor, very hard from 20', Gray (GLEY 6/0 to 5/0), indurated				
	28.0	Sandstone : Gray (7.5YR 5/1) from 28' to 32', Pinkish White (7.5YR 8/2) below 32', hydrocarbon stain and odor, very fine grained quartz sand, poorly sorted, moderate to well cemented	SW			
	40	Sandstone : Light Brown (7.5YR 6/4) very fine grained quartz sand, poorly sorted, moderately cemented to 40', poorly cemented below 42', moist	SW			
	45	Total Depth 45'				

Legend

- Water Table (Time of Boring)

Date Drilled - 03/12/2013 - 03/13/13
Drilling Method - Hollow Stem Auger
Drilled By - Precision Sampling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-1 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0					NO WELL COMPLETED
	13.0	TOP OF RAMP	Fill			
		Fill Material : Ramp top to bottom of excavation				
	17.0	BOTTOM OF EXCAVATION				
		Caliche : Light Gray to Light Yellowish Brown (10YR 7/1 to 6/4) sandy, very fine grained quartz sand, moderately to very hard, Light Gray to Gray (2.5YR 7/1 to 6/1) below 20', hydrocarbon stain and odor	Caliche			
	28.0					
		Sandstone : Light Gray (GLEY 1 7/1)very fine grained quartz sand, poorly sorted, round to subangular, weakly to moderately well cemented, dry, Light Brown to Reddish Yellow (7.5YR 6/4 to 6/6) below 38'	SW			
		Total Depth 43'				

Legend

- Water Table (Time of Boring)

Date Drilled - 03/13/13
Drilling Method - Hollow Stem Auger
Drilled By - Precision Sampling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-2 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0					NO WELL COMPLETED
	5	BOTTOM OF EXCAVATION	Caliche			
		Caliche : Pink to Light Brown (7.5YR 7/4 to 6/4) sandy, very fine grained quartz sand, soft to moderately hard, moist, Gray (7.5YR 5/1) hydrocarbon stain and odor, below 11'				
	10					
	15					
	17.0					
	20					
	25					
	26.0	Sandstone : Light Gray (GLEY 1 7/1) very fine grained quartz sand, poorly sorted, round to subangular, hydrocarbon odor, weakly to moderately well cemented, dry, Light Gray (10YR 7/1) below 33'	SW			
	30					
	35					
	40	Sandstone : Light Gray (10YR 7/1) very fine grained quartz sand, poorly sorted, strong hydrocarbon odor, weakly to moderately well cemented, loose below 41', Light Brown (7.5YR 6/4) moderately well cemented below 50', light odor	SW			
	45					
	50					
	55	Total Depth 55'				
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 03/13/13
Drilling Method - Hollow Stem Auger
Drilled By - Precision Sampling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-3 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt : Brown (10YR 5/3) fine grained quartz sand, dry	ML			NO WELL COMPLETED
		Caliche : Pink (7.5YR 7/4) sandy, fine grained quartz sand, moderately hard to indurated, dry	Caliche			
	17.0					
	29.0	Sand : Pink (7.5YR 7/3 to 7/4) fine grained quartz sand, poorly sorted, round, weakly cemented, friable, dry	SW			
		Light Brown (7.5YR 4/6) below 40'				
	50	Total Depth 50'				

Legend

- Water Table (Time of Boring)

Date Drilled - 04/11/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-4 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt : Brown (10YR 5/3) fine grained quartz sand, dry	ML		0.0	NO WELL COMPLETED
	1.5	Caliche : Pink (7.5YR 7/4 to 7/3) sandy, fine grained quartz sand, moderately hard to indurated, dry	Caliche			
	5				0.0	
		Light Brown to Brown(5YR 6/3 to 5/3) indurated caliche				
	10				0.0	
	15				14.3	
	20				67.2	
	25	Light Brown to Brown(5YR 6/3 to 5/3) indurated caliche			140.5	
	28.0	Sand : Pink (7.5YR 7/4) fine grained quartz sand, poorly sorted, round, weakly cemented, friable, dry	SW			
	30				1.4	
	35				0.0	
	40				0.0	
	45	Interbedded with thin layers of well cemented sandstone below 40', dry				
	50	Total Depth 50'			0.0	
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 04/11/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-5 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt : Brown (10YR 5/3) fine grained quartz sand, medium plasticity, moist	ML		0.0	NO WELL COMPLETED
	4.0 / 5	Caliche : Pink (7.5YR 7/4 to 7/3) sandy, very fine grained quartz sand, soft to moderately well cemented with indurated layers of Light Brown to Brown (7.5YR 6/3 to 5/3)	Caliche		0.0	
	10				0.0	
	15				0.0	
	20	Hard to very hard below 20'			0.0	
	25				0.0	
	26.0	Sand : Pink (7.5YR 7/3 to 7/4) fine grained quartz sand, poorly sorted, round, weakly cemented, friable, dry	SW		0.0	
	30				0.0	
	35				0.0	
	40	Interbedded with thin layers of very well cemented sandstone below 40', dry			0.0	
	45					
	50	Total Depth 50'			0.0	
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 04/11/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-6 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt : Brown (10YR 5/3) fine grained quartz sand, loose, dry	ML		0.0	NO WELL COMPLETED
	1.5	Caliche : Pink (7.5YR 7/4 to 7/3) sandy, very fine grained quartz sand, moderately well cemented, soft to hard, dry	Caliche		0.0	
	5				0.0	
	10				0.0	
	15				0.0	
	20	Brown to Light Brown (7.5YR 5/3 to 6/3) indurated and hard below 20'			0.0	
	25				0.0	
	27.0	Sand : Pink (7.5YR 7/3 to 7/4) very fine grained quartz sand, poorly sorted, round, weakly cemented, friable, dry	SW		0.0	
	30				0.0	
	35				0.0	
	40	Interbedded with thin layers of very well cemented sandstone below 40', dry			0.0	
	45					
	50	Total Depth 50'			0.0	
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 04/11/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-7 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silt : Brown (10YR 5/3) fine grained quartz sand, loose, dry	ML		0.0	NO WELL COMPLETED
	1.5	Caliche : Pink (7.5YR 7/4 to 7/3) sandy, very fine grained quartz sand, moderately well cemented to indurated, very hard, dry	Caliche		0.0	
	5				0.0	
	10				0.0	
	15				0.0	
	20				0.0	
	25				0.0	
	27.0	Sand : Pink to Light Brown (7.5YR 7/3 to 6/3) very fine grained quartz sand, poorly sorted, round, moderately well cemented, friable, dry	SW		0.0	
	30				0.0	
	35				0.0	
	40	Interbedded with thin layers of very well cemented sandstone below, very hard, dry			0.0	
	45					
	50	Total Depth 50'			0.0	
	55					
	60					
	65					

Legend

- Water Table (Time of Boring)

Date Drilled - 04/12/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-8 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silty Clay : Brown (7.5YR 4/2) semiconsolidated	CL			No Well Completed
	4.0	Caliche : White to Gray (7.5YR 8/1 to 6/1) poorly sorted, unconsolidated, fine grained sand to gravel size, angular, dry	Caliche			
	10	Caliche : White to Gray (7.5YR 8/1 to 6/1) gravel/ cobble to sand sized, moderately cemented, poorly sorted, subround to subangular, unconsolidated, dry	Caliche			
	15	Caliche : Light Brown to Pinkish White (7.5YR 6/3 to 8/2) sand, poorly sorted, angular to subround, dry	Caliche			
	20	Caliche : Pinkish White to Pinkish Gray (5YR 8/1 to 6/1) coarse grained sand, angular to subround, poorly sorted, unconsolidated, dry	Caliche			
	25	Caliche : White to Gray (7.5YR 8/1 to 6/1) gravel to coarse grained size sand, unconsolidated, subround to subangular, moderately cemented, dry	Caliche			
	28.0	Caliche to Sand : Pink (7.5YR 7/3) medium to fine grained quartz sand, unconsolidated, sub angular to subround, poorly sorted, dry	SP			
	40	Sand : Pink to Pinkish Gray (7.5YR 7/3 to 7/2) fine grained quartz sand, some caliche, subangular to subround, poorly sorted, unconsolidated, dry	SP			
	50	Sand : Light Brown (7.5YR 6/4) unconsolidated, poorly cemented, fine to medium grained quartz sand, subround to round, well sorted, dry to moist	SP			
		Total Depth 50'				

Legend

- Water Table (Time of Boring)

Date Drilled - 06/11/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson / S. Rehman
Checked By - M. Larson / S. Rehman

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

BH-9 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silty Clay : Dark Gray to Black (10YR 4/1 to 2/1) very fine grained quartz sand, moist, hydrocarbon stain and odor	CL			NO WELL COMPLETED
	17.0					
	21.0	Sandstone : Pink to Light Reddish Brown (5YR 7/4 to 6/4) very fine grained quartz sand, poorly sorted, subangular, weak to moderately cemented, dry, no odor or stain, Pinkish White (5YR 8/2) below 30'	SW			
	40	Total Depth 40'				

Legend

- Water Table (Time of Boring)

Date Drilled - 03/15/13
Drilling Method - Hollow Stem Auger
Drilled By - Precision Sampling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

TB-1 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading	Well Completion Detail
	0	Silty Clay : Dark Gray to Black (10YR 4/1 to 2/1) very fine grained quartz sand, moist, hydrocarbon stain and odor	CL			NO WELL COMPLETED
	17.0					
	21.0	Sandstone : Pink to Light Reddish Brown (5YR 7/4 to 6/4) very fine grained quartz sand, poorly sorted, subangular, weak to moderately cemented, dry, no odor or stain, Pinkish White (5YR 8/2) below 30'	SW			
	40	Total Depth 40'				

Legend

- Water Table (Time of Boring)

Date Drilled - 03/15/13
Drilling Method - Hollow Stem Auger
Drilled By - Precision Sampling Inc.
Logged By - M. Larson
Checked By - M. Larson

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

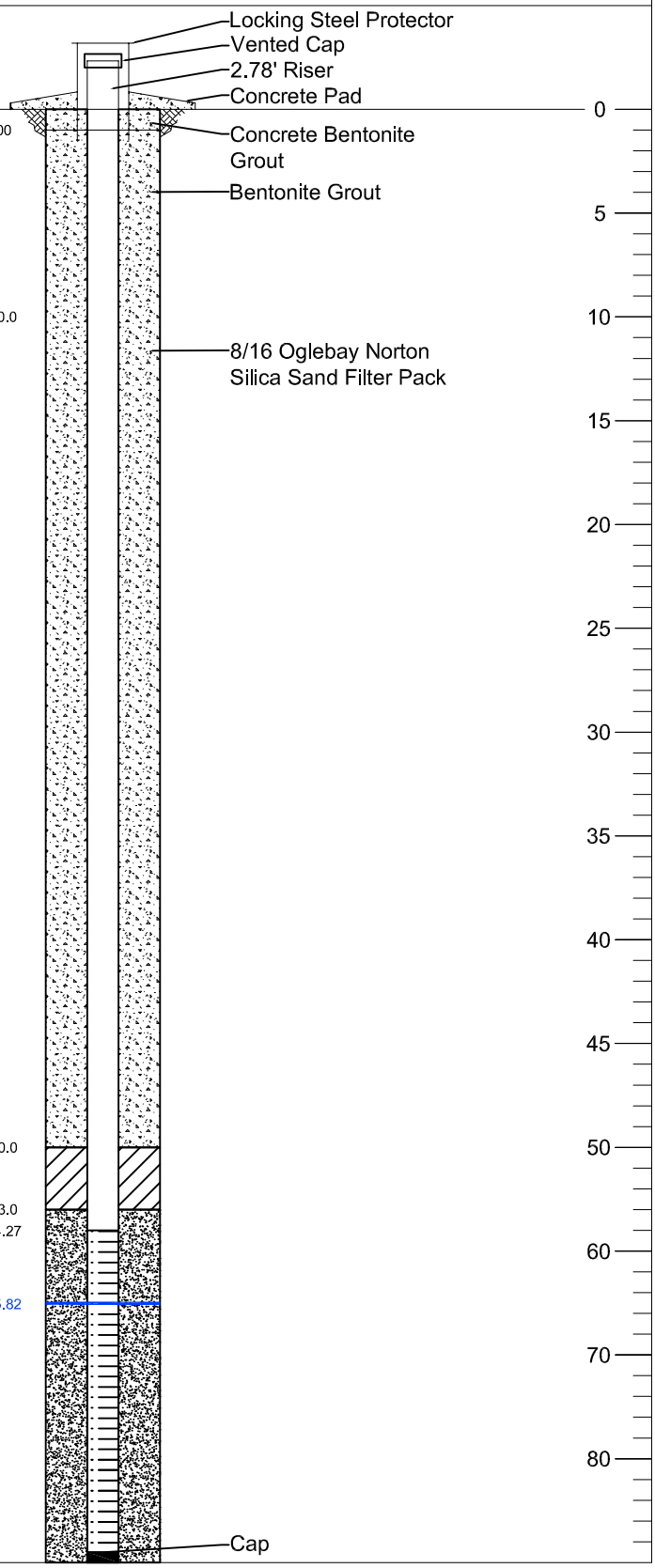
Larson & Associates, Inc.
Environmental Consultants

TB-1 Boring Log

Well Completion Record

Geolog. Unit	Depth (Feet)	Lithologic Description	Unified Soil Classification	Graphic Log	PID Reading
	0				
	1.5	Silty Clay : Brown (5YR 4/2) very fine grained quartz sand, moist, (recent rain)	CL		
		Caliche : Pink (5YR 7/3) very fine grained to coarse grained quartz sand, subround to subangular, low cement	Caliche		
	5				
	10	Caliche : Pinkish White to Gray(7.5YR 8/2 to 6/1) sand, gravel to fine grained quartz sand, angular to sub angular, poorly sorted	Caliche		
	15				
	20				
	25	Caliche : White to Light Gray(7.5YR 8/2 to 6/1) gravel some sand, poorly sorted	Caliche		
	28.0	Sand : Pink (7.5YR 7/3) somewhat consolidated to loosely cemented sand and gravel, slightly moist to dry, subround quartz sand, well to moderately well sorted	SP		
	30				
	35	Sand : Pink (7.5YR 7/3) somewhat consolidated somewhat moist quartz grained sand, hard sandstone at 42', very well cemented, 1' thick, rounded	SP		
	40				
	45				
	50	Sand : Light Brown (7.5YR 6/4) poorly cemented, subround, moderately to well sorted quartz grained sand, some small caliche, unconsolidated, dry	SW-SP		
	60	Sand : Light Reddish Brown to Light Brown (5YR 6/4 to 7.5YR 6/4) medium to fine grained quartz sand, well rounded, unconsolidated, poorly cemented, wet at 60'	SW-SP		
65.82					
	70	Sandy Clay : Brown (7.5YR 5/4) mostly wet, some caliche, somewhat cons but viscous mud	GC		
	75.0	Sand : Brown (7.5YR 5/4) mostly wet, some caliche, somewhat cons but viscous mud	SP		
	80	Total Depth 78.4'			

Well Completion Detail



Legend

- Water Table (Time of Boring)

Date Drilled - 06/10/13
Drilling Method - Air Rotary
Drilled By - Scarborough Drilling Inc.
Logged By - M. Larson / S. Rehman
Checked By - M. Larson / S. Rehman

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico
N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

TMW-1 Boring and Completion Log

APPENDIX E

Initial C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report Final Report

Name of Company Legacy Reserves, LP	Contact Kevin Bracey
Address P. O. Box 10848, Midland, Texas 79702	Telephone No. 432-238-2856
Facility Name **Chamberlain Historical**	Facility Type Tank Battery

Surface Owner Darr Angell	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	14	15S	37E					Lea

Latitude 33° 01 16.7" North Longitude 103° 10 13.6" West

NATURE OF RELEASE

Type of Release Produced Water and crude oil	Volume of Release Unknown	Volume Recovered Unknown
Source of Release Unknown	Date and Hour of Occurrence Historical	Date and Hour of Discovery Historical
Was Immediate Notice Given? Yes No Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken: Historical impact discovered during remediation of non-reportable release. The site will be remediated to NMOCD guidelines.

Describe Area Affected and Cleanup Action Taken. Release impacted approximately 20,000 square feet.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases, which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kevin Bracey	OIL CONSERVATION DIVISION Approved by District Supervisor:
Printed Name: Kevin Bracey	Approval Date: / Expiration Date:
Title: Production Foreman	Conditions of Approval:
E-mail Address: kbracey@legacylp.com	
Date: 1/7/2010 Phone: 432-238-2856	

Larson & Associates, Inc.
Environmental Consultants

March 3, 2014

VIA EMAIL: GeoffreyR.Leking@state.nm.us

Mr. Geoffrey R. Leking
Environmental Specialist
New Mexico Oil Conservation Division - District 1
1625 N. French Drive
Hobbs, New Mexico 88240

Re: 1RP-10-1-2391 – Excavation Closure Report, Chamberlain Flow Line Leak and Historic Contamination, Legacy Reserves, L.P., Lea County, New Mexico, July 25, 2013

Dear Geoffrey:
Please find the enclosed report which is revised for the correct remediation project (RP) number 1RP-10-1-2391). Please contact Mr. Kevin Bracey, with Legacy at (432) 689-5200 or me at (432) 687-0901, if you have questions.

Sincerely,

Larson & Associates, Inc.

Mark J. Larson, P.G.
(432) 687-0901
mark@laenvironmental.com

cc: Kevin Bracey
Patrick McMahon

Encl.

EXCAVATION CLOSURE REPORT

Chamberlain Flow Line
And Historic Contamination

#1RP-2391

Lea County, New Mexico

LAI Project No. 12-0126-01

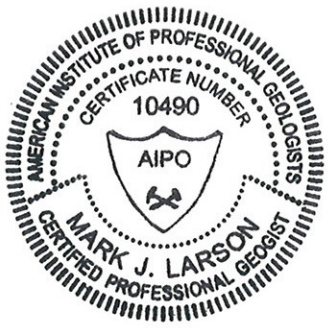
March 3, 2014

Prepared for:

Legacy Reserves, L.P.
30 West Wall Street, Suite 1400
Midland, Texas 79701

Prepared by:

Larson & Associates, Inc.
507 North Marienfeld, Suite 200
Midland, Texas 79701



Mark J. Larson
Certified Professional Geologist No. 10490

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Figure 3 Site Drawing

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Appendix D Initial and Final C-141

1.0 EXECUTIVE SUMMARY

This report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Legacy Reserves, L.P. (Legacy) to present the closure of an excavation associated with a non-reportable flow line leak and area of historic contamination (Site) located south of the Chamberlain Tank Battery. The remediation was performed during September 2013. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6." The surface owner is Angell Ranch Co., LLC.

Historic contamination, believed to be from a pit, was discovered while remediating a non-reportable quantity leak from a flow line. About 240 cubic yards of contaminated soil was excavated from the flow line leak and piled near the southeast corner of the Site. This soil was disposed to Sundance Services located east of Eunice, New Mexico. About 1,100 cubic yards of soil was excavated from the area of historic contamination and piled north of the excavation. On January 7, 2010, Legacy reported the contamination to the OCD District 1 which assigned remediation project number 1RP-10-1-2391 to the release.

Between April 2012 and June 2013, Larson & Associates, Inc (LAI) supervised excavation of additional soil, collected soil samples from 9 borings (BH-1 through BH-9) and installed 1 monitoring well (MW-1). Approximately 4,220 cubic yards of soil, including soil previously excavated from the historic contamination area, was disposed at the Jay Dan Landfarm, LLC, which is located west of Lovington, New Mexico. The laboratory analysis of soil samples determined the vertical extent of total petroleum hydrocarbons (TPH) near the center of the pit (BH-3). TPH was 53 milligrams per kilogram (mg/Kg) in the sample from about 47 to 48 feet below ground surface (bgs) and below the OCD recommended remediation action level of 100 mg/Kg. Chloride was 567 mg/Kg at approximately 55 feet bgs near the center of the pit.

The monitoring well (MW-1) was installed about 100 feet southeast (down gradient) of the pit where groundwater was encountered at approximately 65 feet bgs. Laboratory results of groundwater samples reported benzene, toluene, ethylbenzene and xylenes (BTEX) below the method detection limits (MDL). Chloride and TDS were 263 milligrams per liter (mg/L) and 1,180 mg/L, respectively, and above the Water Quality Control Commission (WQCC) domestic water quality standards of 250 milligrams per liter (mg/l) and 1,000 mg/L, respectively.

During September 2013, LAI supervised closing the flow line and pit excvations. An area of approximately 38,000 square feet or 0.87 acres was excavated to about 4 feet bgs. This soil was used to fill the excavation to about 4 feet bgs. A 20 mil polyethylene (geomembrane) liner was placed in the bottom and over the entire excavation (38,000 square feet). Approximately 10,308 cubic yards of clean soil was placed over the liner. The clean soil was acquired from a borrow area located west of the Site. The center of the excavation was crowned slightly for drainage. The surface will be seeded when adequate moisture is available, as determined by the landowner. Approximately 4,684 cubic yards of contaminated soil was disposed at Jay Dan Landfarm, LLC.

On December 26, 2013, LAI personnel collected first (1^{st}) quarter groundwater samples from the monitoring well. BTEX was below the method detection limits. Chloride and TDS were 151 mg/L and 784 mg/L, respectively, and below the WQCC standards of 250 mg/L and 1,000 mg/L, respectively.

2.0 INTRODUCTION

Legacy Reserves, L.P. (Legacy) submits this report to the New Mexico Oil Conservation Division (OCD) to document closure of an excavation (Site) associated with a flow line leak and area of historic contamination (Site) located south of the Chamberlain Tank Battery. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, and Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6". The surface is owned by Angell Ranch Co., LLC. Figure 1 presents a location and topographic map. Figure 2 presents an aerial photograph. Figure 3 presents a Site drawing.

2.1 Background

The Site is the location of a non-reportable quantity flow line spill and area of historic contamination believed to be a pit. The historic contamination was discovered while remediating the flow line spill. Approximately 240 cubic yards of soil was excavated from the flow line spill and pile near the southeast of the excavation. This soil contained elevated chloride (i.e., greater than 1,000 mg/Kg) and was disposed at Sundance Services located east of Eunice, New Mexico. About 1,100 cubic yards of soil was excavated from the historic contamination area and piled north of the excavation.

During May 2010 Basin Environmental Consulting, LLC (Basin), located in Lovington, New Mexico, collected soil samples from five (5) exploratory trenches and six (6) borings (SB-1 through SB-6). The trenches were excavated between approximately 3.5 (north) and 18 (main, west, south and east) feet bgs. The borings were drilled between approximately 50 (SB-2 through SB-6) and 60 (SB-1) feet bgs. Boring SB-1, located near the east side of the excavation, was completed as a temporary monitoring well where groundwater was reported at approximately 61 feet bgs. A laboratory analysis of a groundwater sample reported ethylbenzene (0.0021 mg/L) and xylenes (0.0058 mg/L) below the New Mexico Water Quality Control Commission (WQCC) human health standards. Chloride was reported at 286 mg/L and exceeded the WQCC domestic water quality standard (250 mg/L). An initial C-141 was submitted to the OCD District 1, on January 7, 2010. The OCD assigned the release remediation project number 1RP-10-1-2391.

2.2 Setting

The surface elevation is approximately 3,791 feet above mean sea level (MSL) and slopes gently to the southeast. The soil is designated as "Kimbrough gravelly loam, 0 to 3 percent slopes (Kg)" which occurs on upland areas known locally as "scabland." The soil has a surface layer approximately 6 inches thick of dark grayish brown gravelly loam which is underlain by indurated caliche. The unit is comprised of approximately 85% Kimbrough soil with the remainder being Lea, Sharvana, Stegall and Slaughter soils. The soil is too shallow for cropland therefore its main use is range and wildlife habitat.

According to the New Mexico Bureau of Geology and Mineral Resources, the Site is located in the Southern High Plains physiographic province. The Site is underlain by a thin layer of silty clay (loam). The silty clay is underlain by a resilient layer of caliche or caprock. The caliche is a hard, erosion resistant, pedogenic calcrete that between approximately 25 and 30 feet thick. The caliche grades into the Pliocene to Miocene aged Ogallala formation which is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz. The Ogallala formation is underlain by shale of the Triassic-age Chile formation of the Dockum Group. Figure 3 presents the site drawing and geological cross section locations.

Groundwater occurs in the Ogallala formation at approximately 63 feet bgs. The Triassic-age Chinle formation is the lower confining unit for the Ogallala formation and occurs at a depth of approximately 120 feet bgs according to records from the New Mexico Office of the State Engineer (OSE). A well used for livestock watering is located about 1,600 feet southeast of the Site. The regional groundwater flow direction is to the southeast (Nativ, 1988).

3.0 ADDITIONAL INVESTIGATION AND REMEDIATION

Between September 2012 and June 2013, LAI personnel supervised excavation of additional soil, collected soil samples from 9 borings (BH-1 through BH-9) and installed 1 monitoring well (MW-1). Approximately 4,220 cubic yards of soil, including soil from the initial excavation, was disposed at Jay Dan Landfarm, LLC located west of Lovington, New Mexico. The investigation determined the vertical limit of total petroleum hydrocarbons (TPH) near the center of the pit (BH-3) at approximately 50 feet bgs. Chloride was 455 mg/Kg at approximately 50 feet bgs in boring BH-3.

The monitoring well (MW-1) was drilled to about 100 feet southeast (down gradient) of the Site. The well was drilled into the Ogallala formation at approximately 75 feet bgs. Groundwater was measured at 65.85 feet below top of casing or approximately 63.07 feet bgs. On June 11, 2013, LAI personnel collected a groundwater sample which was analyzed for BTEX), cations (sodium, magnesium, calcium), anions (sulfate, chloride, alkalinity), nitrate and TDS. The laboratory reported BTEX below the MDL. Chloride (263 mg/L) and TDS (1,180 mg/L) exceeded the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. A closure plan was submitted to the OCD on July 25, 2013 and approved on September 4, 2013. Appendix A presents the OCD approval.

4.0 EXCAVATION CLOSURE

During September 2013 LAI personnel supervised closure of the excavation. Watson Construction, Inc. (Watson), Hobbs, New Mexico, was contracted to excavate soil around the perimeter of the excavation to approximately 4 feet bgs. Soil was excavated from an area measuring approximately 38,000 square feet or about 0.87 acres. The excavated soil was used to fill the excavation to a depth of approximately 4 feet bgs. On September 17, 2013, Akome, Inc., located in Hobbs, New Mexico, installed a 20-mil polyethylene liner in the bottom of the excavations at about 4 feet bgs. The liner was covered with approximately 10,308 cubic yards of clean soil acquired from a borrow area located about 500 feet west of the Site. The excavation was crowned slightly to allow runoff. Approximately 4,684 cubic yards of contaminated soil was disposed at Jay Dan Landfarm, LLC. The surface will be seeded to the landowner's specifications upon receipt of adequate soil moisture. Figure 3 presents the location of the lined excavation. Appendix B presents photographs.

5.0 GROUNDWATER MONITORING

On December 26, 2013, LAI personnel collected first (1st) quarter groundwater samples from monitoring well MW-1. The well was purged by pumping with an environmental pump and dedicated tubing until approximately 3 casing volumes of groundwater was removed from the well. The purged water was disposed at the Chamberlain Tank Battery. Groundwater samples were collected with a dedicated polyethylene bailer and carefully poured into laboratory containers. The containers were seal and delivered under preservation and chain of custody to DHL Laboratory located in Round Rock, Texas. The laboratory analyzed the samples for BTEX, anions (sodium, magnesium, calcium), anions (sulfate,

chloride, alkalinity), nitrate and TDS. Table 1 presents the organic analytical data summary. Table 2 presents the inorganic analytical data summary. Figure 3 presents the well location. Appendix C presents the laboratory report.

Referring to Table 1, BTEX was not reported above the MDL. Chloride and TDS were reported at 151 mg/L and 784 mg/L, respectively, and below the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively.

6.0 RECOMMENDATIONS

The Site will be seeded once adequate moisture is received. Second (2^{nd}) quarter groundwater samples will be collected on March 11, 2014. The laboratory results will be submitted to the OCD following the 3^{rd} quarter event between April and June 2014. Appendix D presents the initial and final C-141.

TABLES

Table 1
Groundwater Organic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Limit:		**0.01**	**0.75**	**0.75**	**0.62**
TMW-1	06/11/2013	<0.001	<0.001	<0.001	<0.003
	12/26/2013	<0.0008	<0.002	<0.002	<0.003

Notes: Analysis performed by Permian Basin Environmental Lab, Midland, Texas

All values except pH reported in milligrams per Liter - (mg/L, parts per million).

Table 2
Groundwater Inorganic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Site, 1RP-2391
Lea County, New Mexico

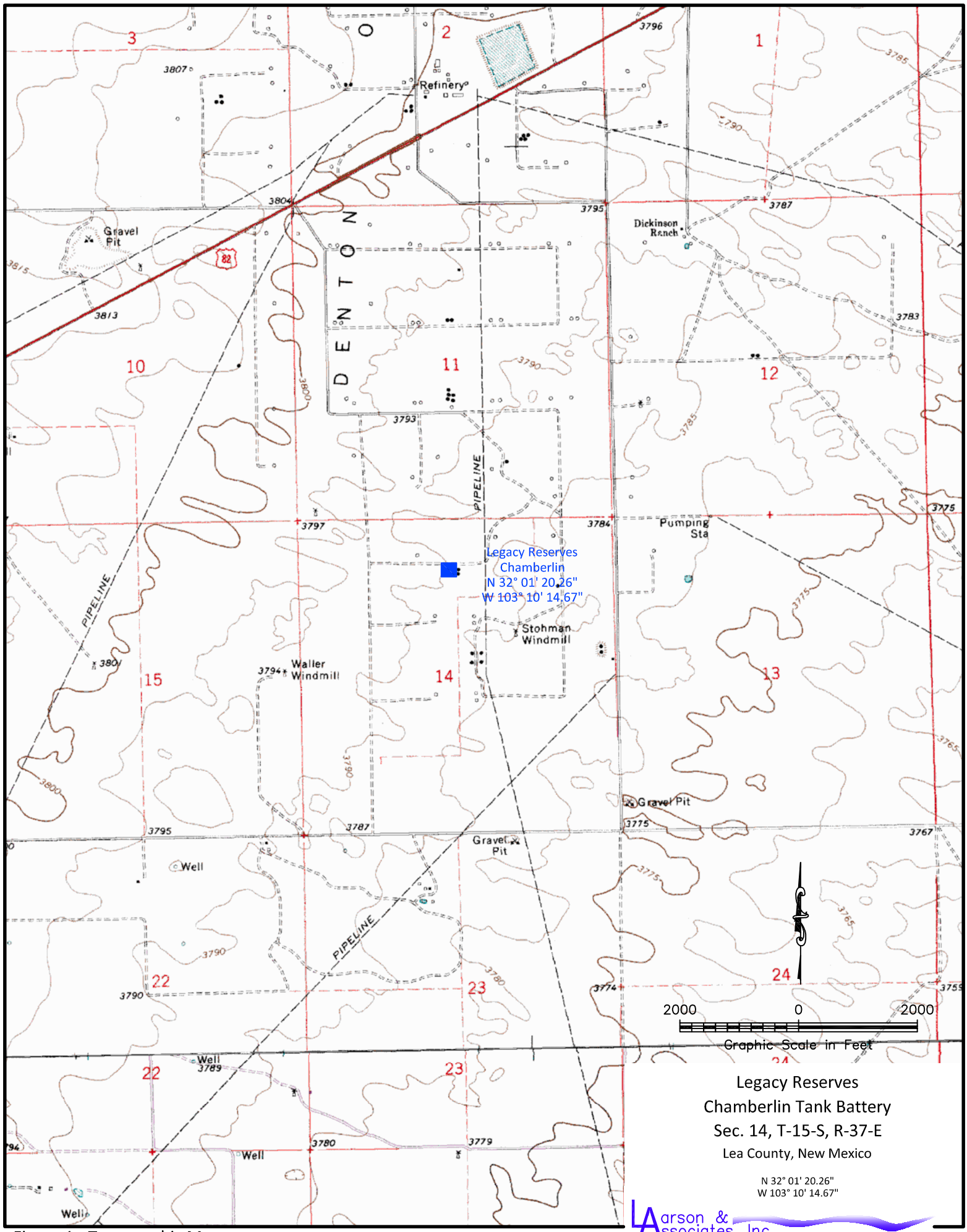
Sample ID	Date	Alkalinity (mg/L)	Chloride (mg/L)	Nitrate - N (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
WQCC Limit:			**250**	**10**	**1000**	**600**				
TMW-1	06/11/2013	272	**263**	8.53	1,180	206	94	230	7.20	51
	12/26/2013	379	151	1.78	784	94.3	61.3	11.6	2.34	186

Notes: Analysis performed by Permian Basin Environmental Lab, Midland, Texas

All values except pH reported in milligrams per Liter - (mg/L, parts per million).

Indicates the value exceeds WQCC Domestic Water Quality Standard

FIGURES



Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 32° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

Legacy Reserves
Chamberlin Tank Battery
Sec. 14, T-15-S, R-37-E
Lea County, New Mexico

N 33° 01' 20.26"
W 103° 10' 14.67"

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map

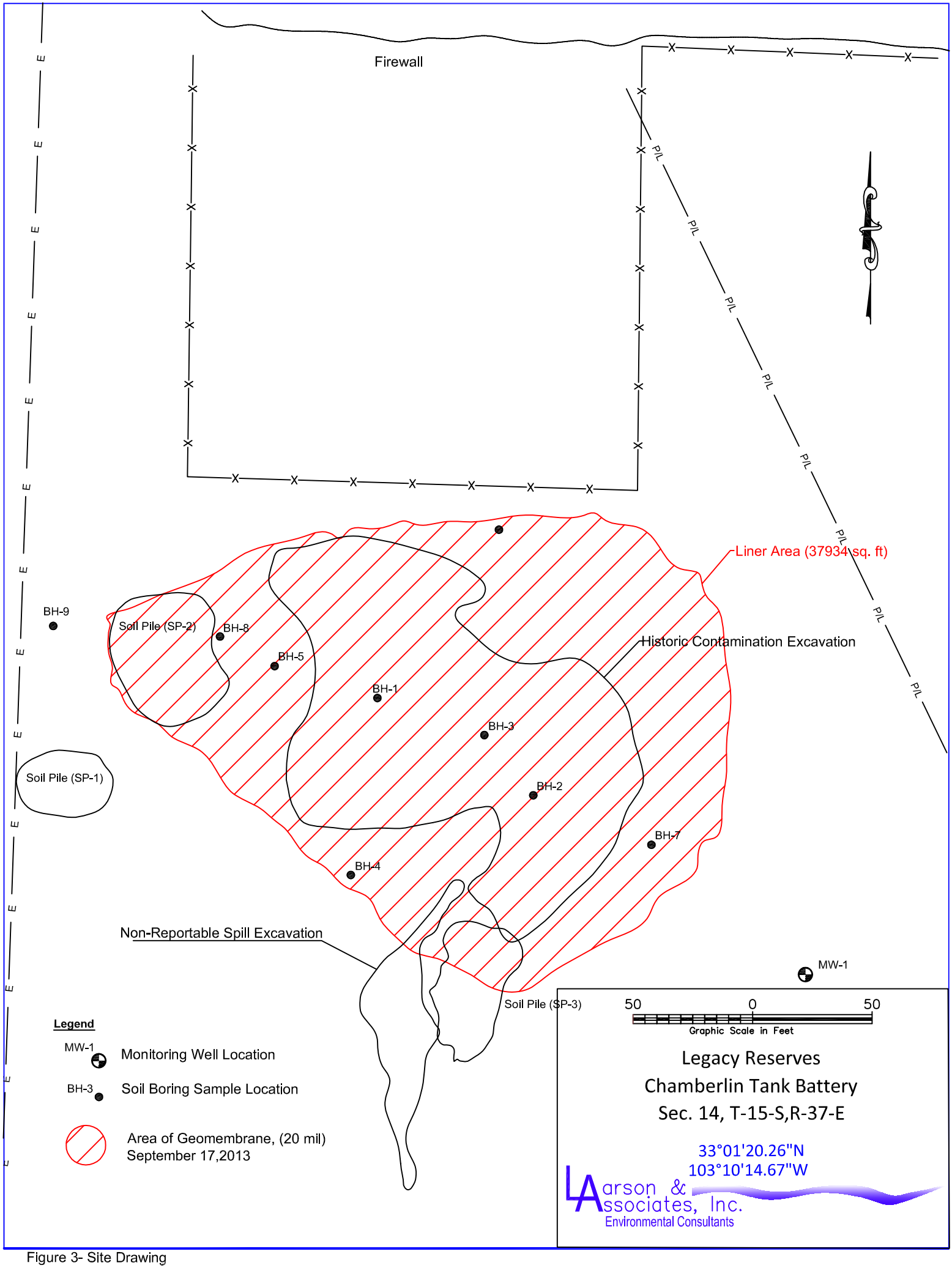


Figure 3- Site Drawing

APPPENDIX A

OCD Approval

Mark Larson

From: Griswold, Jim, EMNRD [Jim.Griswold@state.nm.us]
Sent: Wednesday, September 04, 2013 5:45 PM
To: Kevin Bracey
Cc: Mark Larson
Subject: 1R-2391, Chamberlain Battery Flow Line Leak

Mr. Bracey

I have reviewed the *Investigation and Remediation Report* dated 7/25/13 submitted on behalf of Legacy Reserves, LP by Larson & Associates, Inc. regarding historic releases immediately south the Chamberlain tank battery in Lea County northeast of Lovington, NM. I also made a visit to the site on August 23rd to meet with Mark Larson and the surface owner. I verbally approved the backfilling operation as described on page 8 of the report in the *Recommendations* section during the site visit. If the work has not already commenced, earthmoving operations may proceed including the removal of the soil pile residing south of the excavation area. Upon completion, a report of these backfilling and reseeding operations should be submitted to the OCD. Furthermore, monitoring well TMW-1 should be converted to a permanent well and sampled on a calendar quarter basis for the next 24 months. Groundwater samples should be analyzed for dissolved phase concentrations of benzene, toluene, ethylbenzene, total xylenes, naphthalene (all by Method 8260), sodium, magnesium, calcium, sulfate, chloride, nitrate, alkalinity, and total dissolved solids. Results of the groundwater testing should be submitted to the OCD semi-annually. Please retain a copy of this email for your files as no hardcopy will be sent. Thank you and feel free to contact me at any time with questions or comments.

Jim Griswold
Senior Hydrologist
EMNRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505.476.3465
email: jim.griswold@state.nm.us

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This message has been scanned for viruses and dangerous content by **MailScanner**, and is believed to be clean.

APPENDIX B

Photographs

PHOTOGRAPHS

Legacy Chamberlain Lease Sign, April 4, 2012

Northwest Corner of Excavation (After May 2009) Viewing Northwest, April 4, 2012

PHOTOGRAPHS

Northwest Corner of Excavation (After May 2009) Viewing West, April 4, 2012

West Side of Excavation (After May 2009) Viewing Southwest, April 4, 2012

PHOTOGRAPHS

East Side of Excavation (After May 2009) Viewing North, April 4, 2012

Northwest Corner of Excavation Viewing North, August 24, 2012

PHOTOGRAPHS

Northwest Corner of Excavation Viewing Northwest, August 24, 2012

Northeast Corner of Excavation Viewing East, August 24, 2012

PHOTOGRAPHS

Southeast Corner of Excavation Viewing East, August 24, 2012

East Side of Excavation Viewing East, August 24, 2012

PHOTOGRAPHS

Northeast Corner of the Initial Soil Excavation Looking North, August 24, 2012

West Side of Excavation Viewing North, October 4, 2012

PHOTOGRAPHS

East Side of Excavation Viewing North, October 4, 2012

Southwest Corner of Excavation Viewing Southwest, October 4, 2012

PHOTOGRAPHS

Central Area of Excavation Viewing South, October 4, 2012

East Side of Excavation Viewing Southeast, October 4, 2012

PHOTOGRAPHS

Northeast Corner of Excavation Viewing Northeast, November 12, 2012

Southeast Corner of Excavation Viewing Southeast, November 12, 2012

PHOTOGRAPHS

Drilling at Location BH-2 Viewing South, March 13, 2013

East Side of Excavation Viewing North, July 9, 2013

PHOTOGRAPHS

East Side of Excavation Viewing South, July 9, 2013

Central Area of Excavation Viewing South, July 9, 2013

PHOTOGRAPHS

Central Area of Excavation Viewing North, July 9, 2013

West Side of Excavation Viewing West, July 9, 2013

PHOTOGRAPHS

West Side of Excavation Viewing South, July 9, 2013

Excavation Viewing Southeast, July 9, 2013

PHOTOGRAPHS

Flow Line (Non-Reportable Spill) Excavation Viewing South, July 9, 2013

Preparing Excavation for Liner Installation Viewing East, September 4, 2013

PHOTOGRAPHS

Preparing Excavation for Liner Viewing West, September 4, 2013

Preparing Excavation for Liner Viewing South, September 4, 2013

PHOTOGRAPHS

Preparing Excavation for Liner Viewing Southeast, September 4, 2013

Grading after Liner and Topsoil Viewing Southwest, September 26, 2013

PHOTOGRAPHS

Soil Borrow Are Viewing West, September 26, 2013

Project Completed Viewing Southeast, October 3, 2013

PHOTOGRAPHS

Project Completed Viewing South, October 3, 2013

Project Completed Viewing Southwest, October 3, 2013

APPENDIX C

Laboratory Report

January 07, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1312221

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 12/27/2013 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-13-11

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AnalyticalQCSummaryReport 1312221 ..... **11**

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 12-26-13 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: 1312221
PROJECT LOCATION OR NAME: legacy - chamberlain
LAI PROJECT #: _____ COLLECTOR: ID

Data Reported to:

TRRP report? ☐ Yes ☐ No

TIME ZONE: Time zone/State: NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 FESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☒ TSS ☐ % MOISTURE ☐ HEXAVALENT CHROMIUM ☐ | pH ☐ EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☒ ALKALINITY ☒ | SO4 | NO3 | Cl, NA, K, Mg | FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☒	MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 FESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ HEXAVALENT CHROMIUM ☐	pH ☐ EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☒ ALKALINITY ☒	SO4	NO3	Cl, NA, K, Mg	FIELD NOTES
MW-1	01	12-26-2013	12:00		5				X		X											X			X	X	X	X			

TOTAL

RELINQUISHED BY:(Signature) DATE/TIME 12-26-13 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 12/27/13 8:33 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.6 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☒ CARRIER BILL #
☐ HAND DELIVERED

LSO
It's all in the delivery.

Airbill No. Z0479737

Lone Star Overnight
1-800-800-8984
www.lso.com

SHIP TO:
JENNIFER BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK RD
ROUND ROCK, TX 78664
5123888222

From:
COTY WOOLF
LARSON AND ASSOCIATES
507 N MARIENFELD
MIDLAND, TX 79701
4326870901

B AUS

LSO PRIORITY OVERNIGHT
10:30 IN MOST CITIES
LATER IN REMOTE CITIES

PRINT DATE: 12/26/2013
QUICKCODE: WEIGHT: 30.00LBS
REF 1: 1D00V 0000

Lone Star Overnight

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Larson & Associates**

Date Received: **12/27/2013**

Work Order Number **1312221**

Received by **JB**

Checklist completed by: _____ 12/27/2013
Signature | Date

Reviewed by JD 12/27/2013
Initials | Date

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	2.6 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☑	NA ☐ LOT # 7179
	Adjusted? Yes		Checked by CS
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: Sample was acidified in Login with HNO3 (Lot 7531)

Corrective Action _____

DHL Analytical, Inc. **Date:** *07-Jan-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1312221

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method SW6020A - Metals Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The sample was received and log-in performed on 12/27/13. A total of 1 sample was received. Nitric acid was added to the Metals fraction upon arrival at DHL Analytical. The sample arrived in good condition and was properly packaged.

ANIONS ANALYSIS

For Anions analysis performed on 12/27/13 the matrix spike and matrix spike duplicate recoveries were slightly below control limits for Chloride. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

METALS ANALYSIS

For Metals analysis performed on 1/2/14 the matrix spike recovery was slightly below control limits for Sodium. This is flagged accordingly. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *07-Jan-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1312221

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1312221-01	MW-1		12/26/13 12:00 PM	12/27/2013

Lab Order: 1312221
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1312221-01A	MW-1	12/26/13 12:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	01/03/14 09:40 AM	61195
1312221-01B	MW-1	12/26/13 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/31/13 08:25 AM	61154
	MW-1	12/26/13 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/31/13 08:25 AM	61154
1312221-01C	MW-1	12/26/13 12:00 PM	Aqueous	M2320 B	Alkalinity Preparation	12/27/13 11:15 AM	61134
	MW-1	12/26/13 12:00 PM	Aqueous	E300	Anion Preparation	12/27/13 10:00 AM	61132
	MW-1	12/26/13 12:00 PM	Aqueous	E300	Anion Preparation	12/27/13 10:00 AM	61132
	MW-1	12/26/13 12:00 PM	Aqueous	M2540C	TDS Preparation	01/02/14 08:30 AM	61188

Lab Order: 1312221
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1312221-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	61195	1	01/03/14 12:27 PM	GC8_140103A
1312221-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	61154	10	01/02/14 03:57 PM	ICP-MS3_140102A
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	61154	1	01/02/14 01:27 PM	ICP-MS2_140102A
1312221-01C	MW-1	Aqueous	M2320 B	Alkalinity	61134	1	12/27/13 11:38 AM	TITRATOR_131227A
	MW-1	Aqueous	E300	Anions by IC method - Water	61132	10	12/27/13 11:02 AM	IC_131227A
	MW-1	Aqueous	E300	Anions by IC method - Water	61132	1	12/27/13 10:31 AM	IC_131227A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	61188	1	01/05/14 09:08 AM	WC_140102A

DHL Analytical, Inc.

Date: *07-Jan-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1312221-01
Project No:		**Collection Date:**	12/26/13 12:00 PM
Lab Order:	1312221	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **AV**
Benzene	ND	0.000800	0.00200		mg/L	1	01/03/14 12:27 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	01/03/14 12:27 PM
Toluene	ND	0.00200	0.00600		mg/L	1	01/03/14 12:27 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	01/03/14 12:27 PM
Surr: a,a,a-Trifluorotoluene	98.8	0	87-113		%REC	1	01/03/14 12:27 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SW**
Calcium	61.3	1.00	3.00		mg/L	10	01/02/14 03:57 PM
Magnesium	11.6	0.100	0.300		mg/L	1	01/02/14 01:27 PM
Potassium	2.34	0.100	0.300		mg/L	1	01/02/14 01:27 PM
Sodium	186	1.00	3.00		mg/L	10	01/02/14 03:57 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **JBC**
Chloride	151	3.00	10.0		mg/L	10	12/27/13 11:02 AM
Nitrate-N	1.78	0.100	0.500		mg/L	1	12/27/13 10:31 AM
Sulfate	94.3	1.00	3.00		mg/L	1	12/27/13 10:31 AM
ALKALINITY		**M2320 B**					Analyst: **JBC**
Alkalinity, Bicarbonate (As CaCO3)	379	12.5	25.0		mg/L @ pH 4.52	1	12/27/13 11:38 AM
Alkalinity, Carbonate (As CaCO3)	ND	12.5	25.0		mg/L @ pH 4.52	1	12/27/13 11:38 AM
Alkalinity, Hydroxide (As CaCO3)	ND	12.5	25.0		mg/L @ pH 4.52	1	12/27/13 11:38 AM
Alkalinity, Total (As CaCO3)	379	25.0	25.0		mg/L @ pH 4.52	1	12/27/13 11:38 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **MK**
Total Dissolved Solids (Residue, Filterable)	784	10.0	10.0		mg/L	1	01/05/14 09:08 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140103A

The QC data in batch 61195 applies to the following samples: 1312221-01A

Sample ID **LCS-61195**	Batch ID: **61195**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 10:32:17 AM**	Prep Date: **1/3/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0444	0.00200	0.0500	0	88.9	81	125			
Toluene	0.0473	0.00600	0.0500	0	94.7	84	123			
Ethylbenzene	0.0485	0.00600	0.0500	0	96.9	83	119			
Xylenes, Total	0.144	0.00900	0.150	0	95.8	81	117			
Surr: a,a,a-Trifluorotoluene	192		200.0		95.9	87	113			

Sample ID **MB-61195**	Batch ID: **61195**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 11:11:26 AM**	Prep Date: **1/3/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	200		200.0		100	87	113			

Sample ID **1312228-01AMS**	Batch ID: **61195**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 1:26:44 PM**	Prep Date: **1/3/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0476	0.00200	0.0500	0	95.2	81	125			
Toluene	0.0507	0.00600	0.0500	0	101	84	123			
Ethylbenzene	0.0511	0.00600	0.0500	0	102	83	119			
Xylenes, Total	0.151	0.00900	0.150	0	100	81	117			
Surr: a,a,a-Trifluorotoluene	197		200.0		98.6	87	113			

Sample ID **1312228-01AMSD**	Batch ID: **61195**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 1:46:30 PM**	Prep Date: **1/3/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0472	0.00200	0.0500	0	94.3	81	125	0.901	20	
Toluene	0.0504	0.00600	0.0500	0	101	84	123	0.485	20	
Ethylbenzene	0.0511	0.00600	0.0500	0	102	83	119	0.060	20	
Xylenes, Total	0.151	0.00900	0.150	0	101	81	117	0.171	20	
Surr: a,a,a-Trifluorotoluene	196		200.0		98.1	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140103A

Sample ID **ICV-140103**	Batch ID: **R70530**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 9:57:41 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0928	0.00200	0.100	0	92.8	80	120			
Toluene	0.0978	0.00600	0.100	0	97.8	80	120			
Ethylbenzene	0.0991	0.00600	0.100	0	99.1	80	120			
Xylenes, Total	0.293	0.00900	0.300	0	97.5	80	120			
Surr: a,a,a-Trifluorotoluene	192		200.0		95.9	87	113			

Sample ID **CCV1-140103**	Batch ID: **R70530**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_140103A**	Analysis Date: **1/3/2014 2:22:12 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0458	0.00200	0.0500	0	91.6	80	120			
Toluene	0.0490	0.00600	0.0500	0	97.9	80	120			
Ethylbenzene	0.0499	0.00600	0.0500	0	99.8	80	120			
Xylenes, Total	0.148	0.00900	0.150	0	98.6	80	120			
Surr: a,a,a-Trifluorotoluene	194		200.0		97.0	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_140102A

The QC data in batch 61154 applies to the following samples: 1312221-01B

Sample ID **MB-61154** Batch ID: **61154** TestNo: **SW6020A** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS2_140102A** Analysis Date: **1/2/2014 12:16:00 PM** Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID **LCS-61154** Batch ID: **61154** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS2_140102A** Analysis Date: **1/2/2014 12:34:00 PM** Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.38	0.300	5.00	0	108	80	120			
Magnesium	5.30	0.300	5.00	0	106	80	120			
Potassium	5.19	0.300	5.00	0	104	80	120			
Sodium	5.35	0.300	5.00	0	107	80	120			

Sample ID **LCSD-61154** Batch ID: **61154** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS2_140102A** Analysis Date: **1/2/2014 12:40:00 PM** Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.57	0.300	5.00	0	111	80	120	3.47	15	
Magnesium	5.37	0.300	5.00	0	107	80	120	1.24	15	
Potassium	5.27	0.300	5.00	0	105	80	120	1.59	15	
Sodium	5.41	0.300	5.00	0	108	80	120	1.08	15	

Sample ID **1312227-01D SD** Batch ID: **61154** TestNo: **SW6020A** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS2_140102A** Analysis Date: **1/2/2014 12:58:00 PM** Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	1.26	1.50	0	1.26				0.158	10	
Magnesium	0.706	1.50	0	0.691				2.28	10	
Potassium	2.03	1.50	0	2.02				0.468	10	

Sample ID **1312227-01D PDS** Batch ID: **61154** TestNo: **SW6020A** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS2_140102A** Analysis Date: **1/2/2014 1:39:00 PM** Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	6.45	0.300	5.00	1.26	104	80	120			
Magnesium	5.66	0.300	5.00	0.691	99.5	80	120			
Potassium	6.87	0.300	5.00	2.02	96.9	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_140102A

Sample ID **1312227-01D MS**	Batch ID: **61154**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS2_140102A**	Analysis Date: **1/2/2014 1:44:00 PM**	Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	6.67	0.300	5.00	1.26	108	80	120			
Magnesium	5.96	0.300	5.00	0.691	105	80	120			
Potassium	7.26	0.300	5.00	2.02	105	80	120			
Sodium	117	0.300	5.00	113	78.0	80	120			S

Sample ID **1312227-01D MSD**	Batch ID: **61154**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS2_140102A**	Analysis Date: **1/2/2014 1:50:00 PM**	Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	6.75	0.300	5.00	1.26	110	80	120	1.12	15	
Magnesium	5.94	0.300	5.00	0.691	105	80	120	0.286	15	
Potassium	7.27	0.300	5.00	2.02	105	80	120	0.220	15	
Sodium	117	0.300	5.00	113	92.0	80	120	0.598	15	

Sample ID **1312227-01D SD**	Batch ID: **61154**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS2_140102A**	Analysis Date: **1/2/2014 2:02:00 PM**	Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	124	15.0	0	118				4.94	10	

Sample ID **1312227-01D PDS**	Batch ID: **61154**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS2_140102A**	Analysis Date: **1/2/2014 2:08:00 PM**	Prep Date: **12/31/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	172	3.00	50.0	118	107	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_140102A

Sample ID	**ILCVL-140102**	Batch ID:	**R70501**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS2_140102A**	Analysis Date:	**1/2/2014 12:05:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.104	0.300	0.100	0	104	70	130			
Magnesium	0.116	0.300	0.100	0	116	70	130			
Potassium	0.113	0.300	0.100	0	113	70	130			
Sodium	0.101	0.300	0.100	0	101	70	130			

Sample ID	**LCVL1-140102**	Batch ID:	**R70501**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS2_140102A**	Analysis Date:	**1/2/2014 2:49:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.107	0.300	0.100	0	107	70	130			
Magnesium	0.112	0.300	0.100	0	112	70	130			
Potassium	0.115	0.300	0.100	0	115	70	130			
Sodium	0.127	0.300	0.100	0	127	70	130			

Sample ID	**ICV1-140102**	Batch ID:	**R70501**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS2_140102A**	Analysis Date:	**1/2/2014 11:47:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.72	0.300	2.50	0	109	90	110			
Magnesium	2.68	0.300	2.50	0	107	90	110			
Potassium	2.61	0.300	2.50	0	104	90	110			
Sodium	2.65	0.300	2.50	0	106	90	110			

Sample ID	**CCV1-140102**	Batch ID:	**R70501**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS2_140102A**	Analysis Date:	**1/2/2014 2:14:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.38	0.300	5.00	0	108	90	110			
Magnesium	5.16	0.300	5.00	0	103	90	110			
Potassium	5.08	0.300	5.00	0	102	90	110			
Sodium	5.23	0.300	5.00	0	105	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140102A

Sample ID	**ILCVL-140102**	Batch ID:	**R70510**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140102A**	Analysis Date:	**1/2/2014 12:57:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0758	0.300	0.100	0	75.8	70	130			
Sodium	0.0932	0.300	0.100	0	93.2	70	130			

Sample ID	**LCVL1-140102**	Batch ID:	**R70510**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140102A**	Analysis Date:	**1/2/2014 4:22:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0984	0.300	0.100	0	98.4	70	130			
Sodium	0.0765	0.300	0.100	0	76.5	70	130			

Sample ID	**ICV1-140102**	Batch ID:	**R70510**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS3_140102A**	Analysis Date:	**1/2/2014 12:45:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.55	0.300	2.50	0	102	90	110			
Sodium	2.61	0.300	2.50	0	104	90	110			

Sample ID	**CCV1-140102**	Batch ID:	**R70510**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_140102A**	Analysis Date:	**1/2/2014 4:03:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.45	0.300	5.00	0	109	90	110			
Sodium	5.33	0.300	5.00	0	107	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_131227A

The QC data in batch 61132 applies to the following samples: 1312221-01C

Sample ID	**LCS-61132**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 9:21:48 AM**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.49	1.00	10.00	0	94.9	90	110			
Nitrate-N	5.07	0.500	5.000	0	101	90	110			
Sulfate	29.2	3.00	30.00	0	97.4	90	110			

Sample ID	**LCSD-61132**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 9:36:24 AM**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.55	1.00	10.00	0	95.5	90	110	0.699	20	
Nitrate-N	5.09	0.500	5.000	0	102	90	110	0.301	20	
Sulfate	29.2	3.00	30.00	0	97.5	90	110	0.024	20	

Sample ID	**MB-61132**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 10:07:16 A**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	**1312221-01C MS**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 11:18:03 A**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	322	10.0	200.0	150.7	85.6	90	110			S
Sulfate	298	30.0	200.0	90.67	104	90	110			

Sample ID	**1312221-01C MSD**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 11:32:40 A**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	327	10.0	200.0	150.7	88.0	90	110	1.50	20	S
Sulfate	302	30.0	200.0	90.67	106	90	110	1.55	20	

Sample ID	**1312221-01C MS**	Batch ID:	**61132**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC_131227A**	Analysis Date:	**12/27/2013 11:47:16 A**	Prep Date:	**12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.20	0.500	4.516	1.784	97.8	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_131227A

Sample ID **1312221-01C MSD**	Batch ID: **61132**	TestNo: **E300**	Units: **mg/L**		
SampType: **MSD**	Run ID: **IC_131227A**	Analysis Date: **12/27/2013 12:01:52 P**	Prep Date: **12/27/2013**		

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.23	0.500	4.516	1.784	98.6	90	110	0.523	20	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 8 of 12
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified	

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_131227A

Sample ID **ICV-131227**	Batch ID: **R70443**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC_131227A**	Analysis Date: **12/27/2013 8:58:04 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.0	1.00	25.00	0	96.0	90	110			
Nitrate-N	13.0	0.500	12.50	0	104	90	110			
Sulfate	74.6	3.00	75.00	0	99.5	90	110			

Sample ID **CCV1-131227**	Batch ID: **R70443**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC_131227A**	Analysis Date: **12/27/2013 12:16:28 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.69	1.00	10.00	0	96.9	90	110			
Nitrate-N	5.06	0.500	5.000	0	101	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_131227A

The QC data in batch 61134 applies to the following samples: 1312221-01C

Sample ID **LCS-61134**	Batch ID: **61134**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.27**
SampType: **LCS**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 11:29:00 A**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	55.7	20.0	50.00	0	111	74	129			

Sample ID **MB-61134**	Batch ID: **61134**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **MBLK**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 11:31:00 A**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID **1312221-01C DUP**	Batch ID: **61134**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **DUP**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 11:46:00 A**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	379	25.0	0	379.1				0	20	
Alkalinity, Carbonate (As CaCO3)	0	25.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	25.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	379	25.0	0	379.1				0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_131227A

Sample ID **ICV-131227**	Batch ID: **R70444**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.5**
SampType: **ICV**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 8:31:00 AM**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	18.7	20.0	0							
Alkalinity, Carbonate (As CaCO3)	82.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	98	102			

Sample ID **CCV3-131227**	Batch ID: **R70444**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **CCV**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 11:09:00 A**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	20.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)	80.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Sample ID **CCV1-131227**	Batch ID: **R70444**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **CCV**	Run ID: **TITRATOR_131227A**	Analysis Date: **12/27/2013 12:12:00 P**	Prep Date: **12/27/2013**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	23.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	77.4	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1312221
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_140102A

The QC data in batch 61188 applies to the following samples: 1312221-01C

Sample ID	**MB-61188**	Batch ID:	**61188**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_140102A**	Analysis Date:	**1/5/2014 9:08:00 AM**	Prep Date:	**1/2/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-61188**	Batch ID:	**61188**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_140102A**	Analysis Date:	**1/5/2014 9:08:00 AM**	Prep Date:	**1/2/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	758	10.0	745.6	0	102	90	113			

Sample ID	**1312221-01C-DUP**	Batch ID:	**61188**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_140102A**	Analysis Date:	**1/5/2014 9:08:00 AM**	Prep Date:	**1/2/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	788	10.0	0	784.0				0.509	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

APPENDIX D

Initial and Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Legacy Reserves, LP	Contact Kevin Bracey
Address P. O. Box 10848, Midland, Texas 79702	Telephone No. 432-238-2856
Facility Name **Chamberlain Historical**	Facility Type Tank Battery

Surface Owner Darr Angell	Mineral Owner	Lease No.

LOCATION OF RELEASE

API # 30-025-05312

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	14	15S	37E					Lea

Latitude 33° 01 16.7" North Longitude 103° 10 13.6" West

NATURE OF RELEASE

Type of Release Produced Water and crude oil	Volume of Release Unknown	Volume Recovered Unknown
Source of Release Unknown	Date and Hour of Occurrence Historical	Date and Hour of Discovery Historical
Was Immediate Notice Given? Yes No Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.* WATER @ 57'

Describe Cause of Problem and Remedial Action Taken: Historical impact discovered during remediation of non-reportable release. The site will be remediated to NMOCD guidelines.

Describe Area Affected and Cleanup Action Taken. Release impacted approximately 20,000 square feet.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases, which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kevin Bracey	**OIL CONSERVATION DIVISION**
Printed Name: Kevin Bracey	ENV ENGINEER: Approved by ~~District Supervisor~~: Geoffrey Leking
Title: Production Foreman	Approval Date: 01/11/10 Expiration Date: 03/11/10
E-mail Address: kbracey@legacylp.com	Conditions of Approval: DELINEATE TO CLEAN +1, SUBMIT FINAL C-141 BY 03/11/10. IRP-10-1-2391
Date: 1/7/2010 Phone: 432-238-2856	

fGRL 1001160082

RECEIVED
JAN 11 2010
HOBBSOCD

1RP-2391

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Legacy Reserves, L.P.	Contact: Kevin Bracey
Address: P.O. Box 10848, Midland, TX 79702	Telephone No.: (432) 238-2856
Facility Name: Chamberlain Historical	Facility Type: Tank Battery

Surface Owner: Darr Angell	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	14	15S	37E					Lea

Latitude: N 33° 01' 16.7" Longitude: W 103° 10' 13.6"

NATURE OF RELEASE

Type of Release: Produced Water and Crude Oil	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Unknown	Date and Hour of Occurrence: Historical	Date and Hour of Discovery: Historical
Was Immediate Notice Given? ☐ Yes ☐ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Historic impact discovered during remediation of non-reportable quantity release from flow line. Soil was excavated to approximately 20 feet bgs and disposed at OCD permitted landfill/landfarm.

Describe Area Affected and Cleanup Action Taken.* Historic contamination believed to be from a pit was excavated to about 20 feet. Contaminated soil was disposed at OCD permitted landfill/landfarm. Excavation was filled to approximately 4 feet bgs where 20-mil polyethylene line was installed, per OCD approval. Remainder of excavation above liner was covered with topsoil. Location will be seeded per landowner's specification when adequate soil moisture is received.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Kevin Bracey	OIL CONSERVATION DIVISION	
Printed Name: Kevin Bracey	Approved by District Supervisor: Environmental Specialist	
Title: Production Superintendent	Approval Date: 3/07/2014	Expiration Date: —
E-mail Address: kbracey@legacylp.com	Conditions of Approval: —	Attached ☐ IRP-10-1-2391
Date: 03/03/2014 Phone: (432) 238-2856		

* Attach Additional Sheets If Necessary

Mark Larson

From: Griswold, Jim, EMNRD [Jim.Griswold@state.nm.us]
Sent: Wednesday, September 04, 2013 5:45 PM
To: Kevin Bracey
Cc: Mark Larson
Subject: 1R-2391, Chamberlain Battery Flow Line Leak

Mr. Bracey

I have reviewed the *Investigation and Remediation Report* dated 7/25/13 submitted on behalf of Legacy Reserves, LP by Larson & Associates, Inc. regarding historic releases immediately south the Chamberlain tank battery in Lea County northeast of Lovington, NM. I also made a visit to the site on August 23rd to meet with Mark Larson and the surface owner. I verbally approved the backfilling operation as described on page 8 of the report in the *Recommendations* section during the site visit. If the work has not already commenced, earthmoving operations may proceed including the removal of the soil pile residing south of the excavation area. Upon completion, a report of these backfilling and reseeding operations should be submitted to the OCD. Furthermore, monitoring well TMW-1 should be converted to a permanent well and sampled on a calendar quarter basis for the next 24 months. Groundwater samples should be analyzed for dissolved phase concentrations of benzene, toluene, ethylbenzene, total xylenes, naphthalene (all by Method 8260), sodium, magnesium, calcium, sulfate, chloride, nitrate, alkalinity, and total dissolved solids. Results of the groundwater testing should be submitted to the OCD semi-annually. Please retain a copy of this email for your files as no hardcopy will be sent. Thank you and feel free to contact me at any time with questions or comments.

Jim Griswold
Senior Hydrologist
EMNRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505.476.3465
email: jim.griswold@state.nm.us

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This message has been scanned for viruses and dangerous content by **MailScanner**, and is believed to be clean.

Larson & Associates, Inc.
Environmental Consultants

February 1, 2016

VIA EMAIL: tomas.oberding@state.nm.us

Tomáš Oberding, PhD
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 1RP-10-1-2391 - Final Groundwater Monitoring Report, Legacy Reserves, L.P., Chamberlain Flow Line Leak and Historic Contamination, Lea County, NM

Dear Dr. Oberding:
The above referenced report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Legacy Reserves, L. P. to present the cumulative results of quarterly groundwater sample analysis from monitoring well MW-1 at the Chamberlain Flow Line Leak and Historic Contamination Site (RP-1-10-2391) located in Leas County, New Mexico. Groundwater samples were collected on a quarterly (4 times per year) schedule beginning in December 2013 and terminating in December 2015. The samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), nitrate, cations (calcium, magnesium, potassium and sodium), anions (alkalinity, chloride and sulfate), and total dissolved solids (TDS).

All constituents were below their respective New Mexico Water Quality Control Commission (WQCC) human health and domestic water quality standards for 8 consecutive quarters. Legacy respectfully requests OCD final closure approval for the site. Please contact Mr. Heath Loftin with Legacy at (432) 689-5200 or me at (432) 687-0901, if you have questions.

Sincerely,

Larson & Associates, Inc.

Kim Huckaba

Kimberly Huckaba
Staff Geologist
khuckaba@laenvironmental.com

cc:
Kellie Jones – OCD District 1
Heath Loftin - Legacy
Patrick McMahon - atty

Encl.

FINAL GROUNDWATER MONITORING REPORT

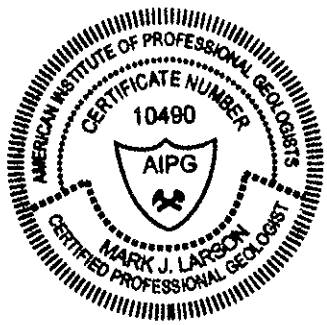
Chamberlain Flow Line Leak And Historical Contamination RP1-10-1-2391

LAI Project No. 12-0126-01

January 26, 2016

Prepared for:
Legacy Reserves, L.P.
30 West Wall Street, Suite 1400
Midland, Texas 79701

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld, Suite 205
Midland, Texas 79701



Kimberly M. Huckaba
Staff Geologist

Mark J. Larson
President/Geologist
CPG #10490

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1.0 EXECUTIVE SUMMARY

This final groundwater monitoring report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Legacy Reserves, L.P. (Legacy) to present the final groundwater report for the Legacy Reserves, L.P. (Legacy) Chamberlain historic contamination (Site). The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6." The surface owner is Angell Ranch Co., LLC.

On June 10, 2013, a monitoring well (MW-1) was installed about 100 feet southeast (down gradient) of the Site which is the location of historic soil contamination that was remediated between April 2012 and June 2013. OCD District 1 and Santa Fe approved closing the excavation on September 4, 2013, but required Legacy to monitor groundwater for a period of 2 years (8 quarters) beginning in December 2013 and terminating in December 2015.

Quarterly groundwater samples were collected on March 11, 2014 (1st quarter), June 18, 2014 (2nd quarter), November 17, 2014 (3rd quarter), December 11, 2014 (4th quarter), January 28, 2015 (5th quarter), April 13, 2015 (6th quarter), August 18, 2015 (7th quarter) and December 3, 2015 (8th quarter). Depth to groundwater was gauged during each event and fluctuated between 65.82 (June 10, 2013) and 67.51 (December 3, 2015) feet TOC. Groundwater samples were collected after removing approximately 3 casing volumes of groundwater and were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), dissolved filtered metals (calcium, magnesium, potassium and sodium), anions (chloride and sulfate), nitrate and total dissolved solids (TDS).

BTEX and nitrate were below the analytical reporting limit (RL) and the New Mexico Water Quality Control Commission (WQCC) human health standards for eight (8) consecutive quarters. Chloride, sulfate and TDS were below WQCC domestic water quality standards for eight (8) consecutive quarters the remaining inorganic constituents were within the range expected for the groundwater.

Legacy requests approval from OCD to discontinue groundwater monitoring and plug the monitoring well. The well will be plugged according to New Mexico State Engineer (OSE) rules and the plugging report will be submitted to the OSE and OCD.

2.0 INTRODUCTION

Legacy Reserves, L.P. (Legacy) submits this report to the New Mexico Oil Conservation Division (OCD) to present the final quarterly groundwater monitoring results and request closure for remediation project number 1RP-10-1-2391 (Site). The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, and Range 37 East, in Lea County New Mexico. The surface is owned by Angell Ranch Co., LLC. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6". Figure 1 presents a location and topographic map. Figure 2 presents an aerial photograph. Figure 3 presents a Site drawing.

2.1 Background

In 2009, while remediating a non-reportable spill from a flow line, a Legacy contractor encountered historic contamination. The contractor excavated about 200 cubic yards of soil from the non-reportable spill.

In May 2010 Basin Environmental Consulting, LLC (Basin), was retained to investigate the historic contamination. Basin collected soil samples from five (5) exploratory trenches (main, east, west, north and south) and six (6) borings (SB-1 through SB-6). The trenches were excavated between approximately 3.5 (north) and 18 (main, west, south and east) feet bgs. On January 7, 2010, Legacy submitted the initial C-141 to OCD District 1. The OCD assigned remediation project number 1RP-2391 to the historic contamination.

Between April 2012 and September 2013, Larson & Associates, Inc (LAI) supervised excavation of additional soil, collected soil samples from 9 borings (BH-1 through BH-9) and installed 1 monitoring well (MW-1) southeast (down gradient) of the Site. Groundwater was encountered at approximately 65 feet bgs. Laboratory results from the initial groundwater sample collected on June 11, 2013 reported chloride and total dissolved solids (TDS) at 263 milligrams per liter (mg/L) and 1,180 mg/L, respectively. OCD approved closure of the excavation but required Legacy to monitor groundwater for 8 quarters (2 years) commencing in December 2013 and terminating in December 2015.

In September 2013 the excavation was closed by installing approximately 38,000 square feet of 20 mil polyethylene (geomembrane) liner in the bottom of the excavation at approximately 4 feet bgs and filling with approximately 10,308 cubic yards of clean soil. The landowner (Angell Ranch Co., LLC) requested not to seed the Site until there was adequate soil moisture. However, recent photographs (August 3, 2015) suggest nearly complete vegetation cover. The excavation closure report was submitted to the OCD on March 3, 2014 ("Excavation Closure Report, Chamberlain Flow Line and Historic Contamination, 1RP-10-1-2391") Appendix A presents the OCD correspondence approving excavation closure and requiring Legacy to monitor groundwater. Appendix B presents the recent photographs (August 3, 2015).

2.2 Setting

The setting is as follows:

- The surface elevation is approximately 3,791 feet above mean sea level (MSL) and slopes gently to the southeast;
- The soil is designated as "Kimbrough gravelly loam, 0 to 3 percent slopes (Kg)" which occurs on upland areas known locally as "scabland." The soil has a surface layer approximately 6 inches thick of dark grayish brown gravelly loam which is underlain by indurated caliche. The unit is comprised of approximately 85% Kimbrough soil with the remainder being Lea, Sharvana, Stegall and Slaughter soils;
- A well used for livestock watering is located about 1,600 feet southeast of the Site;
- The Site is underlain by a thin layer of silty clay (loam) which is underlain by a resilient layer of caliche or caprock. The caliche is a hard, erosion resistant, pedogenic calcrete that is between approximately 25 and 30 feet thick;
- The caliche grades into the Pliocene to Miocene-age Ogallala formation which is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz;
- Groundwater occurs in the Ogallala formation at approximately 62 feet bgs;
- The Triassic-age Chinle formation is the lower confining unit for the Ogallala formation and occurs at a depth of approximately 120 feet bgs according to records from the New Mexico Office of the State Engineer (OSE);
- The regional groundwater flow direction is to the southeast (Nativ, 1988).

3.0 GROUNDWATER SAMPLES AND LABORATORY ANALYSIS

Initial (baseline) groundwater samples were collected from monitoring well MW-1 on August 18, 2015. Quarterly groundwater monitoring was performed on March 11, 2014 (1st quarter), June 18, 2014 (2nd quarter), November 17, 2014 (3rd quarter), December 11, 2014 (4th quarter), January 28, 2015 (5th quarter), April 13, 2015 (6th quarter), August 18, 2015 (7th quarter) and December 3, 2015 (8th quarter). Depth to groundwater was gauged from top of PVC casing during each event and ranged from 65.82 feet TOC (June 10, 2013) to 67.51 feet TOC (December 3, 2015). The total change in depth to groundwater over 2 years was approximately 1.69 feet. Table 1 presents the monitoring wells construction details and cumulative depth to groundwater measurements.

The groundwater samples were collected during each event after removing approximately three (3) casing volumes of groundwater using a dedicated disposable polyethylene bailer. The samples were carefully transferred to laboratory containers that were labeled, sealed with custody labels, packed in an ice filled chest and delivered to the laboratory under chain of custody control. All samples, except March 13, 2015, were analyzed by DHL Analytical, Inc. (DHL), a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Round Rock, Texas. Samples from March 13, 2015, were analyzed by Permian Basin Environmental Lab, in Midland, Texas All metals samples were filtered by the laboratory to exclude particles larger than 0.45µ and acidified with nitric

acid within 24-hours of collection. The samples were analyzed for benzene, toluene, ethylbenzene, xylene (BTEX) by method SW-8021B, dissolved (filtered) metals (calcium, magnesium, potassium, sodium) by methods SW-6020, anions (chloride and sulfate), alkalinity, and total dissolved solids (TDS) by methods E-300, M2320B and M2540, respectively. Table 1 presents monitoring well completion and cumulative gauging summary. Table 2 presents the cumulative organic analytical data summary. Table 3 presents the cumulative inorganic analytical data summary. Appendix A presents the laboratory reports.

3.1 Organic Analysis

Referring to Table 2, benzene, toluene and ethylbenzene were below the analytical method reporting limits during the monitoring period (8 quarters). On January 28, 2015, xylenes were 0.00368 milligrams per liter (mg/L) and well below the New Mexico Water Quality Control Commission (WQCC) human health standard of 0.62 mg/L.

3.2 Inorganic Analysis

Referring to Table 3, chloride (263 mg/L) and TDS (1,180 mg/L) exceeded the WQCC domestic water quality standards of 250 mg/L and 1,000 mg/L, respectively. Chloride, nitrate, sulfate and TDS were below the WQCC standards during the monitoring period (8 quarters).

4.0 CONCLUSIONS

The following observations are documented in this report:

- BTEX concentrations are below the method reporting limit (RL) or WQCC human health standards for 8 consecutive quarters;
- Nitrate, chloride, sulfate and TDS concentrations are below WQCC human health and domestic water quality standards for 8 consecutive quarters.

5.0 RECOMMENDATIONS

Legacy requests approval from OCD to discontinue groundwater monitoring and plug well MW-1 according to New Mexico State Engineer (OSE) requirements. The plugging report will be submitted to the OSE and OCD upon completion of well plugging.

TABLES

Table 1
Monitoring Well Drilling and Completion Summary
Legacy Reserves, L.P., Chamberlin Historic Contamination
Lea County, New Mexico
RP1-10-1-2391

Well Information							Gauging Data	
Well ID	Date Drilled	Drilled Depth (feet bgs)	Well Depth (feet TOC)	Well Diameter (inches)	Screen Interval (feet bgs)	Casing Stickup (feet)	Date	Depth to Water (TOC)
MW-1	6/10/2013	75.42	78.40	2	54.77 - 74.72	2.78	06/10/2013	65.82
							03/11/2014	66.34
							6/18/2014	66.54
							11/17/2014	65.98
							12/11/2014	--
							1/28/2015	66.19
							4/13/2015	67.25
							8/18/2015	67.28
							12/3/2015	67.51

Notes: Well drilled Scarborough Drilling, Inc., Lamesa, Texas, and constructed with 2-inch threaded schedule 40 PVC casing and screen
All values are in feet, unless otherwise noted.
bgs - below ground surface
TOC - top of casing

Table 2
Groundwater Organic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Historic Contamination
Lea County, New Mexico
RP1-10-1-2391

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Limit:		**0.01**	**0.75**	**0.75**	**0.62**
MW-1	06/11/2013	<0.001	<0.001	<0.001	<0.003
	3/11/2014	<0.002	<0.006	<0.006	<0.009
	6/18/2014	<0.002	<0.006	<0.006	<0.009
	11/17/2014	<0.002	<0.006	<0.006	<0.009
	12/11/2014	<0.002	<0.006	<0.006	<0.009
	1/28/2015	<0.002	<0.006	<0.006	**0.00368**
*	4/13/2015	<0.001	<0.001	<0.001	<0.003
	8/18/2015	<0.002	<0.006	<0.006	<0.009
	12/3/2015	<0.002	<0.006	<0.006	<0.009
Trip Blank	3/11/2014	<0.002	<0.006	<0.006	<0.009
	11/17/2014	<0.002	<0.006	<0.006	<0.009

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, according to by EPA SW 848 Method 8021B
* Analysis performed by Permian Basin Environmental Lab, Midland, Texas, according to by EPA SW 848 Method 8021B
All values reported in milligrams per Liter (mg/L) equivelent to parts per million (ppm).
<: Denotes concentration less than method reporting limit (RL)

Table 3
Groundwater Inorganic Analytical Data Summary
Legacy Reserves, L.P., Chamberlin Historic Contamination
Lea County, New Mexico
RP1-10-1-2391

Sample ID	Date	Alkalinity (mg/L)	Chloride (mg/L)	Nitrate - N (mg/L)	TDS (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)
WQCC Limit:			**250**	**10**	**1,000**	**600**				
MW-1	06/11/2013	272	**263**	8.53	**1,180**	206	94	230	7.20	51
	3/11/2014	294	147	1.96	798	93.8	361	14.1	3.05	196
	6/18/2014	353	120	2.05	816	92.7	170	13.7	2.91	223
	11/17/2014	339	130	1.80	762	84.4	167	12.1	2.76	224
	12/11/2014	443	132	1.82	809	87.0	47.2	10.4	<15.00	206
	1/28/2015	330	133	1.71	672	78.8	309	14.1	3.02	226
*	4/13/2015	190	148	1.80	728	74.8	52.0	9.20	2.60	200
	8/18/2015	302	134	1.52	623	76.0	41.0	9.43	2.21	183
	12/3/2015	291	159	1.17	705	63.7	108	8.79	2.39	207

Notes: Analysis performed by DHL Analytical, Round Rock, Texas

*: Analysis performed by Permian Basin Environmental Lab, Midland, Texas

All values reported in milligrams per liter (mg/L) equivelent to parts per million (ppm).

Denotes concentration ablove WQCC domestic water quality standard

FIGURES

V:\PROJECTS\Legacy\LEGACY RESERVES - CHAMBERLIN.dwg, 8/7/2012 9:07:47 AM

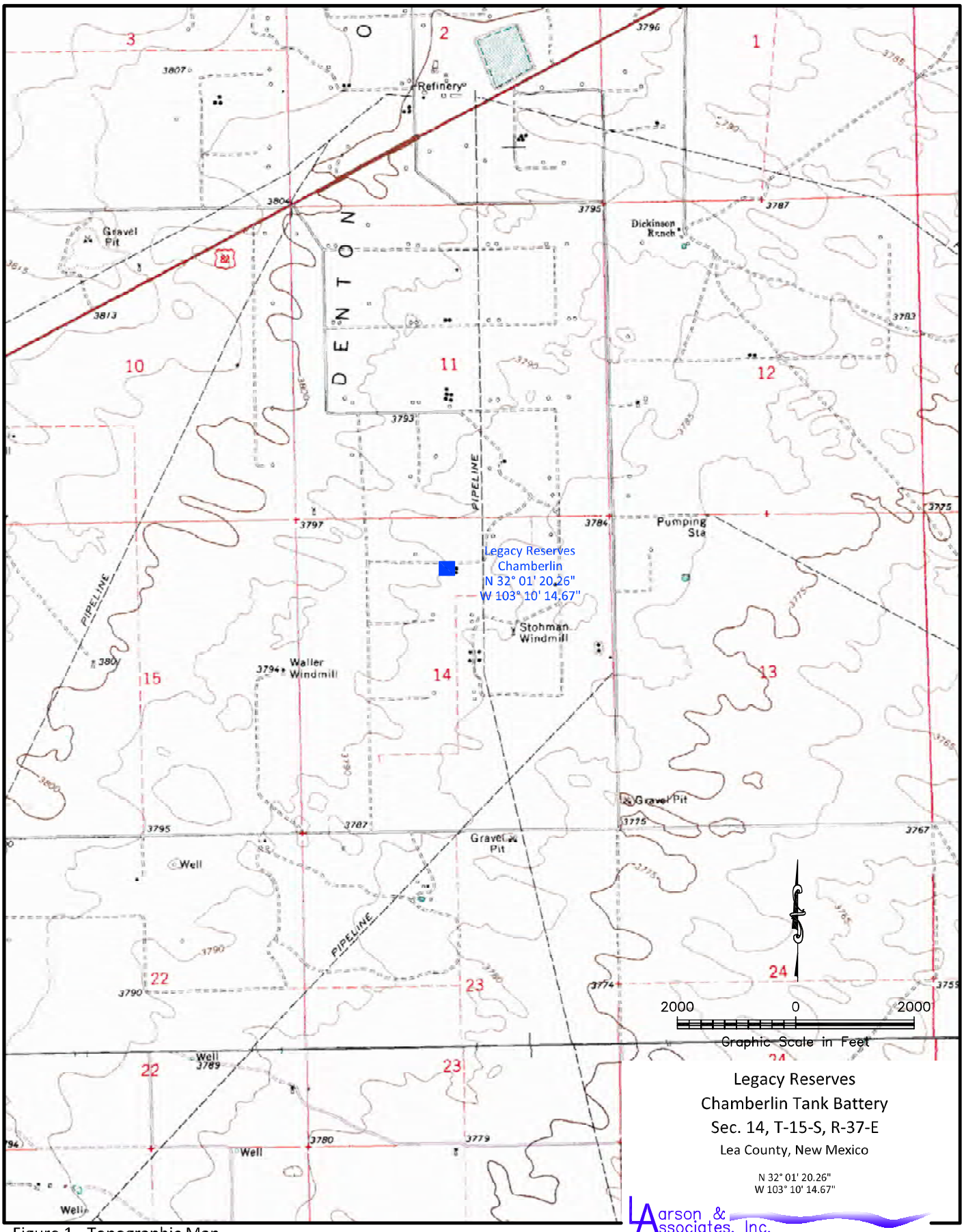

Figure 1 - Topographic Map

V:\PROJECTS\Legacy\LEGACY RESERVES - CHAMBERLIN_recover000.dwg, 7/26/2013 2:30:24 PM

Figure 2 - Aerial Map

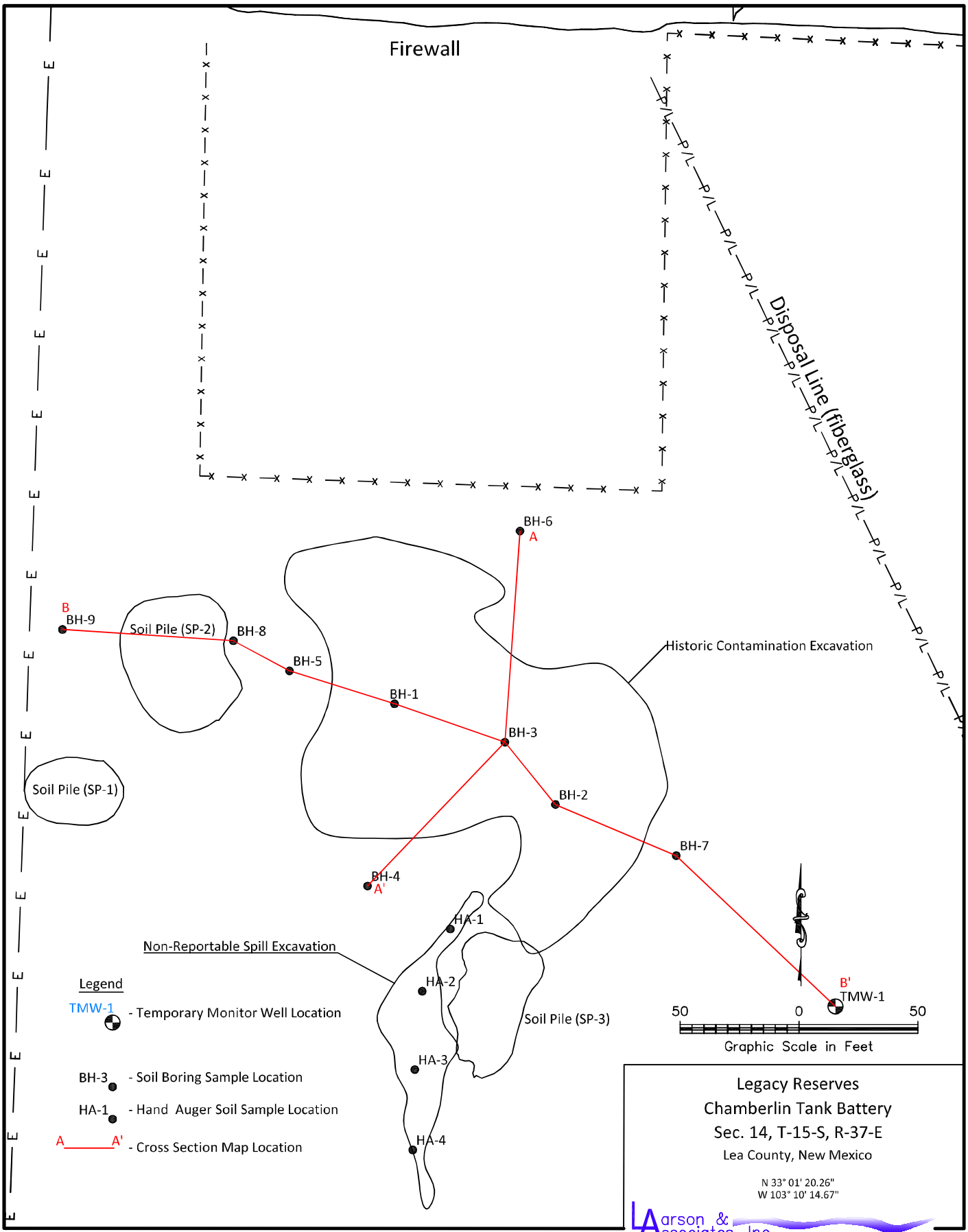

Figure 3 - Site Map

APPENDIX A

LABORATORY REPORTS
AND
CHAIN OF CUSTODY DOCUMENTATION

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Coty Woolf
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Location: None Given

Lab Order Number: 3F12002

NELAP/TCEQ # T104704156-12-1

Report Date: 06/24/13

Larson & Associates, Inc.	Project: Legacy /Chamberlin	Fax: (432) 687-0456
P.O. Box 50685	Project Number: 12-0126-01	
Midland TX, 79710	Project Manager: Coty Woolf	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TMW-1	3F12002-01	Water	06/11/13 13:55	06-12-2013 13:15

Cation analysis was subcontracted to Test America. Their report is attached to the back of this report. Their certification number is T104704223-10-6-TX.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

TMW-1

3F12002-01 (Water)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/L	1	P3F1803	06/17/13	06/18/13	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P3F1803	06/17/13	06/18/13	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P3F1803	06/17/13	06/18/13	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P3F1803	06/17/13	06/18/13	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P3F1803	06/17/13	06/18/13	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*105 %*	*80-120*		*P3F1803*	*06/17/13*	*06/18/13*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*114 %*	*80-120*		*P3F1803*	*06/17/13*	*06/18/13*	*EPA 8021B*	
General Chemistry Parameters by EPA / Standard Methods									
Total Alkalinity	**272**	2.00	mg/L	1	P3F1807	06/17/13	06/17/13	SM 2320	
Chloride	**263**	12.5	mg/L	25	P3F1403	06/13/13	06/14/13	EPA 300.0	
Nitrate as N	**8.53**	0.800	mg/L	10	P3F1403	06/13/13	06/14/13	EPA 300.0	
Total Dissolved Solids	**1180**	50.0	mg/L	1	P3F1804	06/13/13	06/13/13	EPA 160.1	
Sulfate	**206**	25.0	mg/L	25	P3F1403	06/13/13	06/14/13	EPA 300.0	
Total Metals by EPA / Standard Methods									
Calcium	**94.0**	10.0	mg/L	1	P3F2110	06/20/13	06/21/13	EPA 6010B	SUB-1
Magnesium	**230**	1.00	mg/L	1	P3F2110	06/20/13	06/21/13	EPA 6010B	SUB-1
Potassium	**7.20**	1.00	mg/L	1	P3F2110	06/20/13	06/21/13	EPA 6010B	SUB-1
Sodium	**51.0**	10.0	mg/L	1	P3F2110	06/20/13	06/21/13	EPA 6010B	SUB-1

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3F1803 - General Preparation (GC)										
Blank (P3F1803-BLK1)				Prepared: 06/17/13 Analyzed: 06/18/13						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*56.4*		*ug/l*	*60.0*		*93.9*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*64.4*		*"*	*60.0*		*107*	*80-120*			
LCS (P3F1803-BS1)				Prepared: 06/17/13 Analyzed: 06/18/13						
Benzene	0.102	0.00100	mg/L	0.100		102	80-120			
Toluene	0.0855	0.00100	"	0.100		85.5	80-120			
Ethylbenzene	0.0840	0.00100	"	0.100		84.0	80-120			
Xylene (p/m)	0.180	0.00200	"	0.200		90.0	80-120			
Xylene (o)	0.0842	0.00100	"	0.100		84.2	80-120			
Surrogate: 4-Bromofluorobenzene	*56.8*		*ug/l*	*60.0*		*94.6*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*52.2*		*"*	*60.0*		*87.0*	*80-120*			
LCS Dup (P3F1803-BSD1)				Prepared: 06/17/13 Analyzed: 06/18/13						
Benzene	0.0878	0.00100	mg/L	0.100		87.8	80-120	14.5	20	
Toluene	0.0843	0.00100	"	0.100		84.3	80-120	1.46	20	
Ethylbenzene	0.0803	0.00100	"	0.100		80.3	80-120	4.47	20	
Xylene (p/m)	0.166	0.00200	"	0.200		83.2	80-120	7.80	20	
Xylene (o)	0.0851	0.00100	"	0.100		85.1	80-120	0.992	20	
Surrogate: 4-Bromofluorobenzene	*61.4*		*ug/l*	*60.0*		*102*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*57.1*		*"*	*60.0*		*95.2*	*80-120*			
Matrix Spike (P3F1803-MS1)	**Source: 3F14001-01**			Prepared: 06/17/13 Analyzed: 06/18/13						
Benzene	0.0344	0.00100	mg/L	0.100	0.00129	33.1	80-120			QM-05
Toluene	0.0296	0.00100	"	0.100	0.00369	25.9	80-120			QM-05
Ethylbenzene	0.0578	0.00100	"	0.100	0.0759	NR	80-120			QM-05
Xylene (p/m)	0.0855	0.00200	"	0.200	0.0770	4.24	80-120			QM-05
Xylene (o)	0.0255	0.00100	"	0.100	0.0115	14.0	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	*64.7*		*ug/l*	*60.0*		*108*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*64.2*		*"*	*60.0*		*107*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3F1403 - * DEFAULT PREP *** **										
Blank (P3F1403-BLK1)				Prepared: 06/13/13 Analyzed: 06/14/13						
Sulfate	ND	1.00	mg/L							
Chloride	ND	0.500	"							
Nitrate as N	ND	0.0800	"							
LCS (P3F1403-BS1)				Prepared: 06/13/13 Analyzed: 06/14/13						
Chloride	9.76		mg/L	10.0		97.6	80-120			
Nitrate as N	1.96		"	2.00		98.0	80-120			
Sulfate	10.4		"	10.0		104	80-120			
LCS Dup (P3F1403-BSD1)				Prepared: 06/13/13 Analyzed: 06/14/13						
Chloride	9.76		mg/L	10.0		97.6	80-120	0.0205	20	
Nitrate as N	1.97		"	2.00		98.6	80-120	0.611	20	
Sulfate	10.4		"	10.0		104	80-120	0.115	20	
Duplicate (P3F1403-DUP1)	**Source: 3F12002-01**			Prepared: 06/13/13 Analyzed: 06/14/13						
Chloride	263	12.5	mg/L		263			0.00	20	
Sulfate	202	25.0	"		206			1.95	20	
Nitrate as N	8.72	2.00	"		8.53			2.26	20	
Matrix Spike (P3F1403-MS1)	**Source: 3F12002-01**			Prepared: 06/13/13 Analyzed: 06/14/13						
Sulfate	452	25.0	mg/L	250	206	98.4	80-120			
Chloride	526	12.5	"	250	263	105	80-120			
Nitrate as N	52.7	2.00	"	50.0	8.53	88.3	80-120			
Batch P3F1804 - * DEFAULT PREP *** **										
Blank (P3F1804-BLK1)				Prepared & Analyzed: 06/13/13						
Total Dissolved Solids	ND	10.0	mg/L							

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3F1804 - * DEFAULT PREP *** **										
Duplicate (P3F1804-DUP1)	**Source: 3F12002-01**			Prepared & Analyzed: 06/13/13						
Total Dissolved Solids	1180	10.0	mg/L		1180			0.00	20	
Batch P3F1807 - * DEFAULT PREP *** **										
Blank (P3F1807-BLK1)				Prepared & Analyzed: 06/17/13						
Total Alkalinity	ND	2.00	mg/L							
Duplicate (P3F1807-DUP1)	**Source: 3F07001-01**			Prepared & Analyzed: 06/17/13						
Total Alkalinity	500	2.00	mg/L		520			3.92	20	

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

Notes and Definitions

SUB-1	Subcontract of analyte/analysis to Test America TCEQ/NELAC # T104704223-10-6-TX
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 6/24/2013

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

CHAIN-OF-CUSTO

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 06-12-13 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: _____
PROJECT LOCATION OR NAME: _____
LAI PROJECT #: 120126-01 COLLECTOR: R. Brooks

Data Reported to: Cory Woolf

TRRP report? ☐ Yes ☐ No

TIME ZONE: Time zone/State: MST/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

3F12002

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX X 8021B 5W846 ☐ MTBE ☐ / TRPH 418.1 ☐ / TPH 1005 ☐ / TPH 1006 ☐ / GASOLINE MOD 8015 ☐ / DIESEL - MOD 8015 ☐ / VOC 8260 ☐ / SVOC 8270 ☐ / PAH 8270 ☐ / HOLDPAH ☐ / 8081 PESTICIDES ☐ / 8151 HERBICIDES ☐ / 8082 PCBS ☐ / TCLP - METALS (RCRA) ☐ / TCLP VOC ☐ / TCLP - PEST ☐ / HERB ☐ / Semi-VOC ☐ / TOTAL METALS (RCRA) ☐ / OTHER LIST ☐ / LEAD - TOTAL ☐ / D.W. 200.8 ☐ / TCLP ☐ / RCI ☐ / TOX ☐ / FLASHPOINT ☐ / TDS X / TSS ☐ / % MOISTURE ☐ / CYANIDE ☐ / pH ☐ / HEXAVALENT CHROMIUM ☐ / PECHLORATE ☐ / EXPLOSIVES ☐ / ANIONS X F, Cl, NO3, PO4, SO4 / ALKALINITY X CO3, HCO3 / CHLORIDE X	FIELD NOTES
TMW-1		6-11-13	13:55	W	5				X		X	X A
TOTAL												

RELINQUISHED BY:(Signature) Roger Brooks DATE/TIME 6-12-13 10:10 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL X
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-75006-1
Client Project/Site: Analytical

For:
Permian Basin Environmental Lab
10014 SCR 1213
Midland, Texas 79706

Attn: Brent Barron

Authorized for release by:
6/24/2013 10:36:24 AM

Ed Fry, Project Manager II
ed.fry@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

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Case Narrative

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Job ID: 600-75006-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-75006-1

Comments
No additional comments.

Receipt
The sample was received on 6/20/2013 9:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 28.4° C.

Metals
No analytical or quality issues were noted.

Method Summary

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-75006-1	3F12002-01	Water	06/11/13 00:00	06/20/13 09:50

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Client Sample ID: 3F12002-01
Date Collected: 06/11/13 00:00
Date Received: 06/20/13 09:50

Lab Sample ID: 600-75006-1
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	7.2		1.0	0.13	mg/L		06/20/13 15:43	06/21/13 15:10	1
Magnesium	51		1.0	0.019	mg/L		06/20/13 15:43	06/21/13 15:10	1

Method: 6010B - Metals (ICP) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	230		10	0.20	mg/L		06/20/13 15:43	06/21/13 16:18	10
Calcium	94		10	0.22	mg/L		06/20/13 15:43	06/21/13 16:18	10

Qualifiers

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-108944/1-A
Matrix: Water
Analysis Batch: 108976

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	0.020	U	1.0	0.020	mg/L		06/20/13 15:43	06/21/13 14:56	1
Potassium	0.13	U	1.0	0.13	mg/L		06/20/13 15:43	06/21/13 14:56	1
Magnesium	0.019	U	1.0	0.019	mg/L		06/20/13 15:43	06/21/13 14:56	1

Lab Sample ID: MB 600-108944/1-A
Matrix: Water
Analysis Batch: 108976

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 108944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	0.020	U	1.0	0.020	mg/L		06/20/13 15:43	06/21/13 16:13	1
Calcium	0.022	U	1.0	0.022	mg/L		06/20/13 15:43	06/21/13 16:13	1

Lab Sample ID: LCS 600-108944/2-A
Matrix: Water
Analysis Batch: 108976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	10.5		mg/L		105	80 - 120
Potassium	10.0	10.5		mg/L		105	80 - 120
Magnesium	10.0	10.6		mg/L		106	80 - 120

Lab Sample ID: LCS 600-108944/2-A
Matrix: Water
Analysis Batch: 108976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 108944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	10.6		mg/L		106	80 - 120
Calcium	10.0	10.5		mg/L		105	80 - 120

QC Association Summary

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Metals

Prep Batch: 108944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-75006-1	3F12002-01	Total/NA	Water	3010A	
600-75006-1 - DL	3F12002-01	Total/NA	Water	3010A	
LCS 600-108944/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-108944/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 108976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-75006-1	3F12002-01	Total/NA	Water	6010B	108944
600-75006-1 - DL	3F12002-01	Total/NA	Water	6010B	108944
LCS 600-108944/2-A	Lab Control Sample	Total/NA	Water	6010B	108944
LCS 600-108944/2-A	Lab Control Sample	Total/NA	Water	6010B	108944
MB 600-108944/1-A	Method Blank	Total/NA	Water	6010B	108944
MB 600-108944/1-A	Method Blank	Total/NA	Water	6010B	108944

Lab Chronicle

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Client Sample ID: 3F12002-01
Date Collected: 06/11/13 00:00
Date Received: 06/20/13 09:50

Lab Sample ID: 600-75006-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	108944	06/20/13 15:43	NER	TAL HOU
Total/NA	Analysis	6010B		1			108976	06/21/13 15:10	DCL	TAL HOU
Total/NA	Prep	3010A	DL		50 mL	50 mL	108944	06/20/13 15:43	NER	TAL HOU
Total/NA	Analysis	6010B	DL	10			108976	06/21/13 16:18	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Permian Basin Environmental Lab
Project/Site: Analytical

TestAmerica Job ID: 600-75006-1

Laboratory: TestAmerica Houston

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0759	08-04-13
Louisiana	NELAP	6	01967	06-30-13
Oklahoma	State Program	6	9503	08-31-13
Texas	NELAP	6	T104704223-10-6-TX	10-31-13
USDA	Federal		P330-08-00217	04-01-14
Utah	NELAP	8	GULF	10-31-13

PBELAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Brent Barron

Company Name: PBEL

Company Address: 10014 SCR 1213

City/State/Zip: Midland Texas

Telephone No: 432-661-4184 Fax No:

Sampler Signature: N/A e-mail: brentbarron@pbelab.com

Project Name: SUBCONTRACT

Project #:

Project Loc:

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #:

Analyze For:

TCLP:

TOTAL:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice 40 ml VOA	HNO_3 (250ml Plastic)	Hcl 2X40ml VOA	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Ca, Na, K, Mg	RUSH TAT (Pre-Scheduled) *48	Standard TAT 5 DAY
	3F12002-01			06/11/13			1							X		W			X	X	
																				X	
																				X	

600-75006 Chain of Custody

Special Instructions:

Samples are not preserved and have very limited volume. Please use minimal amounts!

	Date	Time		Date	Time
Relinquished by:	6/19/20	18:30		6/20/13	9:50
Relinquished by:	Date	Time		Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt:

Received: °C

Adjusted: °C Factor

Login Sample Receipt Checklist

Client: Permian Basin Environmental Lab

Job Number: 600-75006-1

Login Number: 75006
List Number: 1
Creator: Capps, Dana R

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	True	28.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Legacy /Chamberlin

Project Number: 12-0126-01

Location: NM

Lab Order Number: 5D14001

NELAP/TCEQ # T104704156-13-3

Report Date: 05/22/15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	5D14001-01	Water	04/13/15 11:15	04-13-2015 17:15

Cation analysis was subcontracted to Test America. Their report is attached to the back of this report. Their certification number is T104704223-10-6-TX.

The BKS for Nitrate was above the QC limit for this sample, Subsequent analysis with Passing QC had the same basic result for Nitrate as the initial analysis, however the second analysis was outside of the regulatory Holding time, therefore, the initial analysis is reported as analyzed.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

MW-1

5D14001-01 (Water)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Benzene	ND	0.00100	mg/L	1	P5D1510	04/14/15	04/15/15	EPA 8021B	
Toluene	ND	0.00100	mg/L	1	P5D1510	04/14/15	04/15/15	EPA 8021B	
Ethylbenzene	ND	0.00100	mg/L	1	P5D1510	04/14/15	04/15/15	EPA 8021B	
Xylene (p/m)	ND	0.00200	mg/L	1	P5D1510	04/14/15	04/15/15	EPA 8021B	
Xylene (o)	ND	0.00100	mg/L	1	P5D1510	04/14/15	04/15/15	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		*111 %*	*80-120*		*P5D1510*	*04/14/15*	*04/15/15*	*EPA 8021B*	
Surrogate: 1,4-Difluorobenzene		*74.6 %*	*80-120*		*P5D1510*	*04/14/15*	*04/15/15*	*EPA 8021B*	*S-GC*
C6-C12	ND	3.00	mg/L	1	P5D1503	04/14/15	04/14/15	TX 1005	
>C12-C28	ND	3.00	mg/L	1	P5D1503	04/14/15	04/14/15	TX 1005	
>C28-C35	ND	3.00	mg/L	1	P5D1503	04/14/15	04/14/15	TX 1005	
Surrogate: 1-Chlorooctane		*88.7 %*	*70-130*		*P5D1503*	*04/14/15*	*04/14/15*	*TX 1005*	
Surrogate: o-Terphenyl		*106 %*	*70-130*		*P5D1503*	*04/14/15*	*04/14/15*	*TX 1005*	
General Chemistry Parameters by EPA / Standard Methods									
Total Alkalinity	**190**	2.00	mg/L	1	P5E0805	04/15/15	04/15/15	EPA 310.1M	
Carbonate Alkalinity	ND	0.100	mg/L	1	P5E0805	04/15/15	04/15/15	EPA 310.1M	
Bicarbonate Alkalinity	**190**	2.00	mg/L	1	P5E0805	04/15/15	04/15/15	EPA 310.1M	
Hydroxide Alkalinity	ND	0.100	mg/L	1	P5E0805	04/15/15	04/15/15	EPA 310.1M	
Chloride	**148**	12.5	mg/L	25	P5D1504	04/14/15	04/15/15	EPA 300.0	
Nitrate as N	**1.80**	0.0800	mg/L	1	P5D1504	04/14/15	04/15/15	EPA 300.0	QS-1
Total Dissolved Solids	**728**	20.0	mg/L	1	P5D1512	04/14/15	04/15/15	EPA 160.1	
Sulfate	**74.8**	1.00	mg/L	1	P5D1504	04/14/15	04/15/15	EPA 300.0	
Total Metals by EPA / Standard Methods									
Calcium	**52.0**	1.00	mg/L	1	P5D2408	04/16/15	04/20/15	EPA 6010B	SUB-1
Magnesium	**9.20**	1.00	mg/L	1	P5D2408	04/16/15	04/20/15	EPA 6010B	SUB-1
Potassium	**2.60**	1.00	mg/L	1	P5D2408	04/16/15	04/20/15	EPA 6010B	SUB-1
Sodium	**200**	1.00	mg/L	1	P5D2408	04/16/15	04/20/15	EPA 6010B	SUB-1

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D1503 - TX 1005										
Blank (P5D1503-BLK1)				Prepared & Analyzed: 04/14/15						
C6-C12	ND	3.01	mg/L							
>C12-C28	ND	3.01	"							
>C28-C35	ND	3.01	"							
Surrogate: 1-Chlorooctane	*12.0*		*"*	*9.38*		*128*	*70-130*			
Surrogate: o-Terphenyl	*7.05*		*"*	*4.69*		*150*	*70-130*			*S-GC*
LCS (P5D1503-BS1)				Prepared & Analyzed: 04/14/15						
C6-C12	90.5	3.01	mg/L	93.8		96.5	75-125			
>C12-C28	101	3.01	"	93.8		108	75-125			
Surrogate: 1-Chlorooctane	*10.7*		*"*	*9.38*		*114*	*70-130*			
Surrogate: o-Terphenyl	*5.36*		*"*	*4.69*		*114*	*70-130*			
LCS Dup (P5D1503-BSD1)				Prepared & Analyzed: 04/14/15						
C6-C12	97.8	3.01	mg/L	93.8		104	75-125	7.79	20	
>C12-C28	99.1	3.01	"	93.8		106	75-125	2.17	20	
Surrogate: 1-Chlorooctane	*11.8*		*"*	*9.38*		*126*	*70-130*			
Surrogate: o-Terphenyl	*5.82*		*"*	*4.69*		*124*	*70-130*			
Duplicate (P5D1503-DUP1)	**Source: 5D09011-02**			Prepared & Analyzed: 04/14/15						
C6-C12	ND	3.01	mg/L		ND				20	
>C12-C28	ND	3.01	"		ND				20	
Surrogate: 1-Chlorooctane	*9.44*		*"*	*9.38*		*101*	*70-130*			
Surrogate: o-Terphenyl	*5.70*		*"*	*4.69*		*122*	*70-130*			
Batch P5D1510 - General Preparation (GC)										
Blank (P5D1510-BLK1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Benzene	ND	0.00100	mg/L							
Toluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	*0.0672*		*"*	*0.0600*		*112*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.0554*		*"*	*0.0600*		*92.4*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D1510 - General Preparation (GC)										
LCS (P5D1510-BS1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Benzene	0.0923	0.00100	mg/L	0.100		92.3	80-120			
Toluene	0.106	0.00100	"	0.100		106	80-120			
Ethylbenzene	0.110	0.00100	"	0.100		110	80-120			
Xylene (p/m)	0.210	0.00200	"	0.200		105	80-120			
Xylene (o)	0.105	0.00100	"	0.100		105	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0633*		*"*	*0.0600*		*106*	*80-120*			
Surrogate: 1,4-Difluorobenzene	*0.0620*		*"*	*0.0600*		*103*	*80-120*			
LCS Dup (P5D1510-BSD1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Benzene	0.0969	0.00100	mg/L	0.100		96.9	80-120	4.91	20	
Toluene	0.109	0.00100	"	0.100		109	80-120	2.39	20	
Ethylbenzene	0.114	0.00100	"	0.100		114	80-120	3.78	20	
Xylene (p/m)	0.238	0.00200	"	0.200		119	80-120	12.4	20	
Xylene (o)	0.116	0.00100	"	0.100		116	80-120	9.98	20	
Surrogate: 4-Bromofluorobenzene	*0.0728*		*"*	*0.0600*		*121*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.0558*		*"*	*0.0600*		*92.9*	*80-120*			
Matrix Spike (P5D1510-MS1)	**Source: 5D14001-01**			Prepared: 04/14/15 Analyzed: 04/15/15						
Benzene	0.0896	0.00100	mg/L	0.100	ND	89.6	80-120			
Toluene	0.0970	0.00100	"	0.100	ND	97.0	80-120			
Ethylbenzene	0.111	0.00100	"	0.100	ND	111	80-120			
Xylene (p/m)	0.219	0.00200	"	0.200	ND	109	80-120			
Xylene (o)	0.114	0.00100	"	0.100	ND	114	80-120			
Surrogate: 4-Bromofluorobenzene	*0.0734*		*"*	*0.0600*		*122*	*80-120*			*S-GC*
Surrogate: 1,4-Difluorobenzene	*0.0512*		*"*	*0.0600*		*85.3*	*80-120*			

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P5D1504 - * DEFAULT PREP *** **										
Blank (P5D1504-BLK1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Nitrate as N	ND	0.0800	mg/L							
Chloride	ND	0.500	"							
Sulfate	ND	1.00	"							
LCS (P5D1504-BS1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Nitrate as N	2.55	0.0800	mg/L	2.00		127	80-120			QS-1
Chloride	10.2	0.500	"	10.0		102	80-120			
Sulfate	10.2	1.00	"	10.0		102	80-120			
Duplicate (P5D1504-DUP1)	**Source: 5D14001-01**			Prepared: 04/14/15 Analyzed: 04/15/15						
Chloride	148	12.5	mg/L		148			0.523	20	
Sulfate	70.3	25.0	"		74.8			6.15	20	
Nitrate as N	ND	2.00	"		1.80				20	
Matrix Spike (P5D1504-MS1)	**Source: 5D14001-01**			Prepared: 04/14/15 Analyzed: 04/15/15						
Sulfate	357	25.0	mg/L	300	74.8	94.0	80-120			
Nitrate as N	69.3	2.00	"	60.0	1.80	113	80-120			
Chloride	487	12.5	"	300	148	113	80-120			
Batch P5D1512 - * DEFAULT PREP *** **										
Blank (P5D1512-BLK1)				Prepared: 04/14/15 Analyzed: 04/15/15						
Total Dissolved Solids	ND	20.0	mg/L							
Duplicate (P5D1512-DUP1)	**Source: 5D14001-01**			Prepared: 04/14/15 Analyzed: 04/15/15						
Total Dissolved Solids	724	20.0	mg/L		728			0.551	20	

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

SUB-1	Subcontract of analyte/analysis to Test America TCEQ/NELAC # T104704223-10-6-TX
S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QS-1	The spike recovery value is outside Laboratory historical or method prescribed QC limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 5/22/2015

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: 5D14001

DATE: 4/13/2015 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: 5D14001
PROJECT LOCATION OR NAME: Legacy Chamberlin
LAI PROJECT #: 12-0126-01 COLLECTOR: Sarah Ortiz

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: NM
S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐ 8021B, SW846	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☒ ALKALINITY ☒	Na, Ca, Mg, K, Nitrate SW846, M03	FIELD NOTES
MW-1	01	4/13/15	11:15	W	3	X			X		X																			
" "		↓	↓	↓	1		X		X																		X			
" "		↓	↓	↓	1				X														X			X		X		

TOTAL

RELINQUISHED BY:(Signature) Sarah Ortiz DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 4/13/15 17:15 RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: °C NCF
RECEIVING TEMP: 5.4 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-109911-1
Client Project/Site: 5d14001-01 4-13-15

For:
Permian Basin Environmental Lab LP
10014 South County Road 1213
Midland, Texas 79706

Attn: Brent Barron

C. Lance Tigrett

Authorized for release by:
4/21/2015 4:14:02 PM

Lance Tigrett, Project Manager I
(713)690-4444
lance.tigrett@testamericainc.com

1 2 3 4 5 6 7 8 9 10 11 12 13

LINKS

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Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Job ID: 600-109911-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-109911-1

Comments
No additional comments.

Receipt
The sample was received on 4/15/2015 10:18 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

Metals
Method 6010B: The method blank for Prep Batch 160342 contained Calcium and Magnesium above the method detection limit. These target analytes concentrations were less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-109911-1	5d14001-01	Water	04/13/15 11:15	04/15/15 10:18

Client Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Client Sample ID: 5d14001-01
Date Collected: 04/13/15 11:15
Date Received: 04/15/15 10:18

Lab Sample ID: 600-109911-1
Matrix: Water

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	200		1.0	0.020	mg/L		04/16/15 12:19	04/20/15 13:56	1
Potassium	2.6		1.0	0.13	mg/L		04/16/15 12:19	04/20/15 13:56	1
Calcium	52	B	1.0	0.022	mg/L		04/16/15 12:19	04/20/15 13:56	1
Magnesium	9.2	B	1.0	0.019	mg/L		04/16/15 12:19	04/20/15 13:56	1

Definitions/Glossary

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-160342/1-A
Matrix: Water
Analysis Batch: 160541

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 160342

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	0.020	U	1.0	0.020	mg/L		04/16/15 12:19	04/20/15 13:03	1
Potassium	0.13	U	1.0	0.13	mg/L		04/16/15 12:19	04/20/15 13:03	1
Calcium	0.179	J	1.0	0.022	mg/L		04/16/15 12:19	04/20/15 13:03	1
Magnesium	0.0584	J	1.0	0.019	mg/L		04/16/15 12:19	04/20/15 13:03	1

Lab Sample ID: LCS 600-160342/2-A
Matrix: Water
Analysis Batch: 160541

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 160342

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10.0	10.5		mg/L		105	80 - 120
Potassium	10.0	10.5		mg/L		105	80 - 120
Calcium	10.0	10.9		mg/L		109	80 - 120
Magnesium	10.0	9.84		mg/L		98	80 - 120

QC Association Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Metals

Prep Batch: 160342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109911-1	5d14001-01	Total/NA	Water	3010A	
LCS 600-160342/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 600-160342/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 160541

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-109911-1	5d14001-01	Total/NA	Water	6010B	160342
LCS 600-160342/2-A	Lab Control Sample	Total/NA	Water	6010B	160342
MB 600-160342/1-A	Method Blank	Total/NA	Water	6010B	160342

Lab Chronicle

Client: Permian Basin Environmental Lab LP
Project/Site: 5d14001-01 4-13-15

TestAmerica Job ID: 600-109911-1

Client Sample ID: 5d14001-01
Date Collected: 04/13/15 11:15
Date Received: 04/15/15 10:18

Lab Sample ID: 600-109911-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	160342	04/16/15 12:19	NER	TAL HOU
Total/NA	Analysis	6010B		1	50 mL	50 mL	160541	04/20/15 13:56	DCL	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Certification Summary

Client: Permian Basin Environmental Lab LP
TestAmerica Job ID: 600-109911-1
Project/Site: 5d14001-01 4-13-15

Laboratory: TestAmerica Houston

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Texas	NELAP	6	T104704223	10-31-15

PBELAB

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Brent Barron

Project Name: SUBCONTRACT

Company Name: PBEL

Proj

Company Address: 10014 SCR 1213

Project

City/State/Zip: Midland Texas

600-109911 Chain of Custody

Telephone No: 432-661-4184 Fax No:

Report Format: Standard ☐ TRRP ☐ NPDES

Sampler Signature: N/A e-mail: brentbarron@pbelab.com

(lab use only)
ORDER #:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	NaOH/ZnAc	Matrix: DW=Drinking Water SL=Sludge	GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other	Analyze For: TCLP: Na, Ca, Mg, K	TOTAL:	4 DAY tat
	5d14001-01			04/13/15	1115		1	x	x							W		x			X

Special Instructions:

Relinquished by	Date	Time		Date	Time
Brent Barron	03/25/15	1400			
Relinquished by	Date	Time	Received by	Date	Time
				4-13-15	1019
Relinquished by:	Date	Time	Received by:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sample/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt:
Received: °C
Adjusted: °C Factor

TestAmerica Houston

Sample Receipt Checklist

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Date/Time Received: _____

JOB NUMBER: Loc: 600 109911 CLIENT: PBE lab

UNPACKED BY: _____ CARRIER/DRIVER: Fed Ex

Custody Seal Present: ☐ YES ☒ NO Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
RW	Y / N	Y / N	1.8	39	-.1	1.7
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☒ YES ☐ NO

pH paper Lot # HC432654

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?		

COMMENTS:

DC 4/15/15

Login Sample Receipt Checklist

Client: Permian Basin Environmental Lab LP

Job Number: 600-109911-1

Login Number: 109911
List Number: 1
Creator: Capps, Dana R

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

December 29, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1412164

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 12/12/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-13

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CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Coty

DATE: 12/11/14 PAGE 1 OF 1
PO #: LAB WORK ORDER #: 1412164
PROJECT LOCATION OR NAME: Legacy Compressor
LAI PROJECT #: 12-0126-01 COLLECTOR:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐ | Na - Ca / Mg / K / Mg

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
MW-1	01	12/11/14	1000	W	1				X		X X X X	
"		12/11/14	1000	W	1		X					
"		12/11/14	1000	W	3	X					X	
TOTAL												

RELINQUISHED BY:(Signature) — DATE/TIME 12/12/14 — RECEIVED BY: (Signature) 630pm
RELINQUISHED BY:(Signature) — DATE/TIME 12/12/14 830 — RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) — DATE/TIME — RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7 THERM #: 52
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL# Ronestar
☐ HAND DELIVERED

LSO

WWW.LSO.COM
Questions? Call 800-800-8984

Airbill No. 48947429

48947429

1. To: Print Name (Person): T. Backer Phone (Important): 512 388822

Company Name: DHL

Street Address (No P.O. Box or P.O. Box Zip Code Deliveries): 2300 Double Creek

Suite / Floor:

City: Round Rock State: TX Zip: 78664

2. From: Print Name (Person): Carol F Phone (Important): 432-687-0901

Company Name: LARSON & ASSOCIATES

Street Address: 507 N. MARIENFELD ST.

Suite / Floor: #200

City: MIDLAND State: TX Zip: 79701

3. Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.

- [X] LSO Priority Overnight* By 10:30 a.m., to most cities
- [ ] LSO Early Overnight* By 8:30 a.m. select cities
- [ ] LSO Economy Next Day* By 3 p.m. to most cities
- [ ] LSO 2nd Day*
- [ ] LSO Ground
- [ ] LSO Saturday*
- [ ] Other

*Check commitment times and availability at www.lso.com

Assumed LSO Priority Overnight service unless otherwise noted.

4. Package: Weight: 50

Your Company's Billing Reference Information: 12-0126-01

Ship Date: (mm/dd/yy) 12/11/14

5. Payment:

FOR DRIVER USE ONLY

Driver Number: 10057

[ ] Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location:

Date: 12/11/14

Time: 1830

City Code: MDS

[ ] Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSO IS NOT INTENDED FOR USE ON LSO GROUND SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.

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DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates | Date Received: 12/12/2014

Work Order Number 1412164 | Received by JB

Checklist completed by [signature] 12/12/2014 (Signature / Date) | Reviewed by JD 12/12/2014 (Initials / Date)

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	2.7 °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☑	NA ☐ LOT # 8086
	Adjusted? Yes		Checked by [initials]
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: Acidified sample is login with KHO3 (Lot 8739)

Corrective Action _____

DHL Analytical, Inc. **Date:** *29-Dec-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1412164

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method SW8021B - Volatile Organics by GC Analysis
Method SW6020A - Metals Analysis
Method E300 - Anions Analysis
Method M2320 B - Alkalinity Analysis
Method M2540C - TDS Analysis

LOG IN

The sample was received and log-in performed on 12/12/14. A total of 1 sample was received. Nitric acid was added to the Metals fraction upon arrival at DHL Analytical. The Time of Collection was Mountain Standard Time. The sample arrived in good condition and was properly packaged.

METALS ANALYSIS

For Metals analysis the sample was diluted prior to analysis due to the nature of the sample (concentration of target compounds).

For Metals analysis performed on 12/19/14 the matrix spike and matrix spike duplicate recoveries were above control limits for three analytes. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 12/19/14 LCVL-141219 was slightly above control limits for Sodium. This is flagged accordingly. The associated CCV-141219 was within control limits for this analyte. No further corrective actions were taken.

VOLATILE ORGANICS BY GC ANALYSIS

For Volatile Organics by GC analysis performed on 12/16/14 the matrix spike duplicate recovery was slightly below control limits for Benzene and Toluene. In addition, the matrix spike and matrix spike duplicate had the RPD slightly above control limits for three compounds. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these compounds. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *29-Dec-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1412164

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1412164-01	MW-1		12/11/14 01:00 PM	12/12/2014

Lab Order: 1412164
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1412164-01A	MW-1	12/11/14 01:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	12/16/14 11:16 AM	67183
1412164-01B	MW-1	12/11/14 01:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/16/14 05:23 PM	67199
1412164-01C	MW-1	12/11/14 01:00 PM	Aqueous	M2320 B	Alkalinity Preparation	12/16/14 08:02 AM	67149
	MW-1	12/11/14 01:00 PM	Aqueous	E300	Anion Preparation	12/12/14 09:25 AM	67097
	MW-1	12/11/14 01:00 PM	Aqueous	E300	Anion Preparation	12/12/14 09:25 AM	67097
	MW-1	12/11/14 01:00 PM	Aqueous	M2540C	TDS Preparation	12/16/14 01:30 PM	67191

Lab Order: 1412164
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1412164-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	67183	1	12/16/14 11:59 AM	GC8_141216A
1412164-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	67199	50	12/19/14 12:08 PM	ICP-MS4_141219A
1412164-01C	MW-1	Aqueous	M2320 B	Alkalinity	67149	1	12/16/14 10:27 AM	TITRATOR_141216A
	MW-1	Aqueous	E300	Anions by IC method - Water	67097	10	12/12/14 02:51 PM	IC_141212A
	MW-1	Aqueous	E300	Anions by IC method - Water	67097	1	12/12/14 01:07 PM	IC_141212A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	67191	1	12/17/14 08:45 AM	WC_141216B

DHL Analytical, Inc.

Date: *29-Dec-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1412164-01
Project No:	12-0126-01	**Collection Date:**	12/11/14 01:00 PM
Lab Order:	1412164	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	12/16/14 11:59 AM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	12/16/14 11:59 AM
Toluene	ND	0.00200	0.00600		mg/L	1	12/16/14 11:59 AM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	12/16/14 11:59 AM
Surr: a,a,a-Trifluorotoluene	92.9	0	87-113		%REC	1	12/16/14 11:59 AM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **RO**
Calcium	47.2	5.00	15.0		mg/L	50	12/19/14 12:08 PM
Magnesium	10.4	5.00	15.0	J	mg/L	50	12/19/14 12:08 PM
Potassium	ND	5.00	15.0		mg/L	50	12/19/14 12:08 PM
Sodium	206	5.00	15.0		mg/L	50	12/19/14 12:08 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	132	3.00	10.0		mg/L	10	12/12/14 02:51 PM
Nitrate-N	1.82	0.100	0.500		mg/L	1	12/12/14 01:07 PM
Sulfate	87.0	1.00	3.00		mg/L	1	12/12/14 01:07 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	443	13.3	26.7		mg/L @ pH 4.53	1	12/16/14 10:27 AM
Alkalinity, Carbonate (As CaCO3)	ND	13.3	26.7		mg/L @ pH 4.53	1	12/16/14 10:27 AM
Alkalinity, Hydroxide (As CaCO3)	ND	13.3	26.7		mg/L @ pH 4.53	1	12/16/14 10:27 AM
Alkalinity, Total (As CaCO3)	443	26.7	26.7		mg/L @ pH 4.53	1	12/16/14 10:27 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	809	10.0	10.0		mg/L	1	12/17/14 08:45 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_141216A

The QC data in batch 67183 applies to the following samples: 1412164-01A

Sample ID **LCS-67183**	Batch ID: **67183**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_141216A**	Analysis Date: **12/16/2014 11:16:20 A**	Prep Date: **12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0460	0.00200	0.0464	0	99.2	81	125			
Toluene	0.0468	0.00600	0.0464	0	101	84	123			
Ethylbenzene	0.0472	0.00600	0.0464	0	102	83	119			
Xylenes, Total	0.141	0.00900	0.139	0	101	81	117			
Surr: a,a,a-Trifluorotoluene	187		200.0		93.6	87	113			

Sample ID **MB-67183**	Batch ID: **67183**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_141216A**	Analysis Date: **12/16/2014 11:37:47 A**	Prep Date: **12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	188		200.0		94.0	87	113			

Sample ID **1412165-12AMS**	Batch ID: **67183**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_141216A**	Analysis Date: **12/16/2014 7:28:30 PM**	Prep Date: **12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0470	0.00200	0.0464	0	101	81	125			
Toluene	0.0470	0.00600	0.0464	0	101	84	123			
Ethylbenzene	0.0472	0.00600	0.0464	0	102	83	119			
Xylenes, Total	0.142	0.00900	0.139	0	102	81	117			
Surr: a,a,a-Trifluorotoluene	187		200.0		93.7	87	113			

Sample ID **1412165-12AMSD**	Batch ID: **67183**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_141216A**	Analysis Date: **12/17/2014 8:44:09 AM**	Prep Date: **12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0371	0.00200	0.0464	0	80.0	81	125	23.6	20	SR
Toluene	0.0381	0.00600	0.0464	0	82.2	84	123	20.9	20	SR
Ethylbenzene	0.0401	0.00600	0.0464	0	86.4	83	119	16.2	20	
Xylenes, Total	0.113	0.00900	0.139	0	81.0	81	117	22.9	20	R
Surr: a,a,a-Trifluorotoluene	184		200.0		91.8	87	113	0	0	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_141216A

Sample ID **ICV-141216**	Batch ID: **R77006**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_141216A**	Analysis Date: **12/16/2014 10:54:46 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0884	0.00200	0.0928	0	95.2	80	120			
Toluene	0.0896	0.00600	0.0928	0	96.6	80	120			
Ethylbenzene	0.0900	0.00600	0.0928	0	97.0	80	120			
Xylenes, Total	0.268	0.00900	0.278	0	96.5	80	120			
Surr: a,a,a-Trifluorotoluene	188		200.0		94.1	87	113			

Sample ID **CCV1-141216**	Batch ID: **R77006**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_141216A**	Analysis Date: **12/16/2014 6:03:09 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0455	0.00200	0.0464	0	98.0	80	120			
Toluene	0.0453	0.00600	0.0464	0	97.7	80	120			
Ethylbenzene	0.0456	0.00600	0.0464	0	98.3	80	120			
Xylenes, Total	0.136	0.00900	0.139	0	98.0	80	120			
Surr: a,a,a-Trifluorotoluene	186		200.0		92.8	87	113			

Sample ID **CCV2-141216**	Batch ID: **R77006**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_141216A**	Analysis Date: **12/17/2014 9:26:16 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0454	0.00200	0.0464	0	97.9	80	120			
Toluene	0.0457	0.00600	0.0464	0	98.4	80	120			
Ethylbenzene	0.0461	0.00600	0.0464	0	99.3	80	120			
Xylenes, Total	0.137	0.00900	0.139	0	98.5	80	120			
Surr: a,a,a-Trifluorotoluene	184		200.0		92.2	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141219A

The QC data in batch 67199 applies to the following samples: 1412164-01B

Sample ID	MB-67199	Batch ID:	67199	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_141219A	Analysis Date:	12/19/2014 12:00:00 P	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID	LCS-67199	Batch ID:	67199	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_141219A	Analysis Date:	12/19/2014 12:02:00 P	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.93	0.300	5.00	0	98.6	80	120			
Magnesium	5.09	0.300	5.00	0	102	80	120			
Potassium	5.00	0.300	5.00	0	99.9	80	120			
Sodium	5.11	0.300	5.00	0	102	80	120			

Sample ID	LCSD-67199	Batch ID:	67199	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_141219A	Analysis Date:	12/19/2014 12:04:00 P	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.92	0.300	5.00	0	98.3	80	120	0.282	15	
Magnesium	5.07	0.300	5.00	0	101	80	120	0.328	15	
Potassium	5.02	0.300	5.00	0	100	80	120	0.548	15	
Sodium	5.07	0.300	5.00	0	101	80	120	0.768	15	

Sample ID	1412164-01B SD	Batch ID:	67199	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_141219A	Analysis Date:	12/19/2014 12:10:00 P	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49.0	75.0	0	47.2				3.56	10	
Magnesium	0	75.0	0	10.4				0	10	
Potassium	0	75.0	0	0				0	10	
Sodium	215	75.0	0	206				4.30	10	

Sample ID	1412164-01B PDS	Batch ID:	67199	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_141219A	Analysis Date:	12/19/2014 12:30:00 P	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	323	15.0	250	47.2	110	80	120			
Magnesium	301	15.0	250	10.4	116	80	120			
Potassium	282	15.0	250	0	113	80	120			
Sodium	503	15.0	250	206	119	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141219A

Sample ID	**1412164-01B MS**	Batch ID:	**67199**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 12:39:00 P**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	53.7	15.0	5.00	47.2	130	80	120			S
Magnesium	16.4	15.0	5.00	10.4	120	80	120			
Potassium	7.47	15.0	5.00	0	149	80	120			S
Sodium	224	15.0	5.00	206	360	80	120			S

Sample ID	**1412164-01B MSD**	Batch ID:	**67199**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 12:41:00 P**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	54.3	15.0	5.00	47.2	141	80	120	1.05	15	S
Magnesium	16.3	15.0	5.00	10.4	119	80	120	0.367	15	
Potassium	7.62	15.0	5.00	0	152	80	120	2.03	15	S
Sodium	223	15.0	5.00	206	337	80	120	0.511	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141219A

Sample ID	**ICV-141219**	Batch ID:	**R77080**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 11:50:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.47	0.300	2.50	0	98.9	90	110			
Magnesium	2.49	0.300	2.50	0	99.6	90	110			
Potassium	2.43	0.300	2.50	0	97.1	90	110			
Sodium	2.48	0.300	2.50	0	99.2	90	110			

Sample ID	**LCVL-141219**	Batch ID:	**R77080**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 11:54:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0951	0.300	0.100	0	95.1	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.113	0.300	0.100	0	113	70	130			
Sodium	0.132	0.300	0.100	0	132	70	130			S

Sample ID	**CCV1-141219**	Batch ID:	**R77080**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 12:43:00 P**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.80	0.300	5.00	0	96.0	90	110			
Magnesium	5.13	0.300	5.00	0	103	90	110			
Potassium	4.95	0.300	5.00	0	99.0	90	110			
Sodium	5.09	0.300	5.00	0	102	90	110			

Sample ID	**LCVL1-141219**	Batch ID:	**R77080**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141219A**	Analysis Date:	**12/19/2014 12:47:00 P**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0998	0.300	0.100	0	99.8	70	130			
Magnesium	0.103	0.300	0.100	0	103	70	130			
Potassium	0.100	0.300	0.100	0	100	70	130			
Sodium	0.0984	0.300	0.100	0	98.4	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_141212A

The QC data in batch 67097 applies to the following samples: 1412164-01C

Sample ID	MB-67097	Batch ID:	67097	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_141212A	Analysis Date:	12/12/2014 9:52:15 AM	Prep Date:	12/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	LCS-67097	Batch ID:	67097	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_141212A	Analysis Date:	12/12/2014 10:20:36 A	Prep Date:	12/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Nitrate-N	5.08	0.500	5.000	0	102	90	110			
Sulfate	30.8	3.00	30.00	0	103	90	110			

Sample ID	LCSD-67097	Batch ID:	67097	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_141212A	Analysis Date:	12/12/2014 10:35:12 A	Prep Date:	12/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.5	1.00	10.00	0	105	90	110	0.144	20	
Nitrate-N	5.08	0.500	5.000	0	102	90	110	0.065	20	
Sulfate	30.7	3.00	30.00	0	102	90	110	0.392	20	

Sample ID	1412147-03BMS	Batch ID:	67097	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_141212A	Analysis Date:	12/12/2014 3:11:25 PM	Prep Date:	12/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	228	10.0	200.0	13.77	107	90	110			
Nitrate-N	45.0	5.00	45.16	0	99.7	90	110			
Sulfate	266	30.0	200.0	55.12	105	90	110			

Sample ID	1412147-03BMSD	Batch ID:	67097	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_141212A	Analysis Date:	12/12/2014 3:29:47 PM	Prep Date:	12/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	228	10.0	200.0	13.77	107	90	110	0.353	20	
Nitrate-N	45.5	5.00	45.16	0	101	90	110	1.08	20	
Sulfate	268	30.0	200.0	55.12	106	90	110	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_141212A

Sample ID	**ICV-141212**	Batch ID:	**R76935**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**IC_141212A**	Analysis Date:	**12/12/2014 9:25:29 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.6	1.00	25.00	0	106	90	110			
Nitrate-N	13.5	0.500	12.50	0	108	90	110			
Sulfate	78.3	3.00	75.00	0	104	90	110			

Sample ID	**CCV1-141212**	Batch ID:	**R76935**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC_141212A**	Analysis Date:	**12/12/2014 1:48:12 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.5	1.00	10.00	0	105	90	110			
Nitrate-N	5.03	0.500	5.000	0	101	90	110			
Sulfate	30.8	3.00	30.00	0	103	90	110			

Sample ID	**CCV2-141212**	Batch ID:	**R76935**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC_141212A**	Analysis Date:	**12/12/2014 4:37:19 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Nitrate-N	5.06	0.500	5.000	0	101	90	110			
Sulfate	30.7	3.00	30.00	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_141216A

The QC data in batch 67149 applies to the following samples: 1412164-01C

Sample ID	MB-67149	Batch ID:	67149	TestNo:	M2320 B	Units:	mg/L @ pH 4.5
SampType:	MBLK	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 8:50:00 AM	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	LCS-67149	Batch ID:	67149	TestNo:	M2320 B	Units:	mg/L @ pH 4.51
SampType:	LCS	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 8:56:00 AM	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	52.9	20.0	50.00	0	106	74	129			

Sample ID	1412165-23D DUP	Batch ID:	67149	TestNo:	M2320 B	Units:	mg/L @ pH 4.51
SampType:	DUP	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 10:52:00 A	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	0	20.0	0	0				0	20	

Sample ID	1412181-01B DUP	Batch ID:	67149	TestNo:	M2320 B	Units:	mg/L @ pH 4.53
SampType:	DUP	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 11:20:00 A	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	321	20.0	0	325.7				1.55	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	321	20.0	0	325.7				1.55	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_141216A

Sample ID	ICV-141216	Batch ID:	R76979	TestNo:	M2320 B	Units:	mg/L @ pH 4.51
SampType:	ICV	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 8:48:00 AM	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	4.32	20.0	0							
Alkalinity, Carbonate (As CaCO3)	96.0	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	98	102			

Sample ID	CCV1-141216	Batch ID:	R76979	TestNo:	M2320 B	Units:	mg/L @ pH 4.53
SampType:	CCV	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 10:50:00 A	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	21.5	20.0	0							
Alkalinity, Carbonate (As CaCO3)	79.4	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Sample ID	CCV2-141216	Batch ID:	R76979	TestNo:	M2320 B	Units:	mg/L @ pH 4.51
SampType:	CCV	Run ID:	TITRATOR_141216A	Analysis Date:	12/16/2014 11:37:00 A	Prep Date:	12/16/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.20	20.0	0							
Alkalinity, Carbonate (As CaCO3)	95.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1412164
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_141216B

The QC data in batch 67191 applies to the following samples: 1412164-01C

Sample ID	**MB-67191**	Batch ID:	**67191**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_141216B**	Analysis Date:	**12/17/2014 8:45:00 AM**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-67191**	Batch ID:	**67191**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_141216B**	Analysis Date:	**12/17/2014 8:45:00 AM**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	743	10.0	745.6	0	99.7	90	113			

Sample ID	**1412176-01C-DUP**	Batch ID:	**67191**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_141216B**	Analysis Date:	**12/17/2014 8:45:00 AM**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1850	50.0	0	1855				0	5	

Sample ID	**1412176-02C-DUP**	Batch ID:	**67191**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_141216B**	Analysis Date:	**12/17/2014 8:45:00 AM**	Prep Date:	**12/16/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1010	50.0	0	1015				0.494	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

November 25, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1411131

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 2 sample(s) on 11/18/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-13

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CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 11/17/14 PAGE 1 OF 1
PO #: LAB WORK ORDER #: 1411131
PROJECT LOCATION OR NAME: Legacy Chamberlain
LAI PROJECT #: 12-0126-01 COLLECTOR:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MDT

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐ | NO_3, Ca, Mg, K, SO_4

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐	NO_3, Ca, Mg, K, SO_4	FIELD NOTES
GWS-1	01	11/17/14	2:30pm	W	3	X			X		X																		
"		"	"	"	2				X														X		X	X			
"		"	"	"	1		X																				X		
Trip Blank	02	11/17/14	2:30pm	W	2	X					X																		
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 11/17/14 6:00pm RECEIVED BY: (Signature) LSO

RELINQUISHED BY:(Signature) LSO DATE/TIME 11/18/14 8:30 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.2 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL # Lonestar
☐ HAND DELIVERED

AB

LSO

WWW.LSO.COM
Questions? Call 800-800-8984

Airbill No. 48947406

48947406

1A

1B

1. To: Print Name (Person) J Parker Phone (Important) 214 [illegible]

Company Name DHL

Street Address (No P.O. Box or P.O. Box Zip Code for Deliveries) 2300 [illegible] Dr Ste [illegible]

Suite / Floor

City Round Rock State TX Zip [illegible]

2. From: Print Name (Person) [illegible] Phone (Important) 432-687-0901

Company Name LARSON & ASSOCIATES

Street Address 507 N. MARIENFELD ST.

Suite / Floor #200

City MIDLAND State TX Zip 79701

3. Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.

- [X] **LSO Priority Overnight*** By 10:30 a.m. to most cities
- [ ] **LSO Early Overnight*** By 8:30 a.m. select cities
- [ ] **LSO Economy Next Day*** By 3 p.m. to most cities
- [ ] **LSO 2nd Day***
- [ ] **LSO Ground**
- [ ] **LSO Saturday***
- [ ] Other _____

*Check commitment times and availability at www.lso.com

Assumed LSO Priority Overnight service unless otherwise noted.

4. Package: Weight: 50

Your Company's Billing Reference Information: D-0126-C1

Ship Date: (mm/dd/yy) 11 / 17 / 14

5. Payment:

FOR DRIVER USE ONLY

Driver Number 164612

[ ] Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location 10010

Date: 11-17-14

Time: 18:38

City Code: AUS

[ ] Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. ***NO DELIVERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSO IS NOT INTENDED FOR USE ON LSO GROUND SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.***

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates | Date Received: 11/18/2014

Work Order Number 1411131 | Received by MB

Checklist completed by: _____ (Signature) 11/18/2014 (Date) | Reviewed by _____ (Initials) 11/18/2014 (Date)

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.2 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by CJ
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc. **Date:** *25-Nov-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1411131

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW6020A - Metals Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 10/18/2014. A total of 2 samples were received and analyzed. The samples arrived in good condition and were properly packaged. The samples were collected in Mountain Standard Time.

METALS ANALYSIS

For Metals Analysis, the recovery of Sodium for the Low Level Calibration Verification (LCVL2,3,4-141124) was above the method control limits. These are flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated bracketing QC. No further corrective action was taken.

For Metals Analysis, the recoveries of two analytes for the Matrix Spike and Matrix Spike Duplicate (1411134-08 MS/MSD) were outside of the method control limits. These are flagged accordingly in the QC Summary Report. These analytes were within method control limits in the associated LCS. No further corrective action was taken.

DHL Analytical, Inc.

Date: *25-Nov-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1411131

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1411131-01	WS-1		11/17/14 02:30 PM	11/18/2014
1411131-02	Trip Blank		11/17/14 02:30 PM	11/18/2014

Lab Order: 1411131
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1411131-01A	WS-1	11/17/14 02:30 PM	Aqueous	SW5030C	Purge and Trap Water GC	11/24/14 08:25 AM	66691
1411131-01B	WS-1	11/17/14 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/19/14 08:30 AM	66598
	WS-1	11/17/14 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/19/14 08:30 AM	66598
1411131-01C	WS-1	11/17/14 02:30 PM	Aqueous	M2320 B	Alkalinity Preparation	11/20/14 11:38 AM	66612
	WS-1	11/17/14 02:30 PM	Aqueous	E300	Anion Preparation	11/18/14 09:41 AM	66588
	WS-1	11/17/14 02:30 PM	Aqueous	E300	Anion Preparation	11/18/14 09:41 AM	66588
	WS-1	11/17/14 02:30 PM	Aqueous	M2540C	TDS Preparation	11/19/14 01:37 PM	66618
1411131-02A	Trip Blank	11/17/14 02:30 PM	Trip Blank	SW5030C	Purge and Trap Water GC	11/24/14 08:25 AM	66691

Lab Order: 1411131
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1411131-01A	WS-1	Aqueous	SW8021B	Volatile Organics by GC	66691	1	11/24/14 12:28 PM	GC8_141124B
1411131-01B	WS-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	66598	1	11/24/14 12:50 PM	ICP-MS4_141124C
	WS-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	66598	50	11/24/14 11:50 AM	ICP-MS4_141124C
1411131-01C	WS-1	Aqueous	M2320 B	Alkalinity	66612	1	11/20/14 01:52 PM	TITRATOR_141120A
	WS-1	Aqueous	E300	Anions by IC method - Water	66588	10	11/18/14 11:26 AM	IC_141118A
	WS-1	Aqueous	E300	Anions by IC method - Water	66588	1	11/18/14 11:09 AM	IC_141118A
	WS-1	Aqueous	M2540C	Total Dissolved Solids	66618	1	11/20/14 09:00 AM	WC_141119B
1411131-02A	Trip Blank	Trip Blank	SW8021B	Volatile Organics by GC	66691	1	11/24/14 12:07 PM	GC8_141124B

DHL Analytical, Inc.

Date: *25-Nov-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	WS-1
Project:	Legacy Chamberlain	**Lab ID:**	1411131-01
Project No:	12-0126-01	**Collection Date:**	11/17/14 02:30 PM
Lab Order:	1411131	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	11/24/14 12:28 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	11/24/14 12:28 PM
Toluene	ND	0.00200	0.00600		mg/L	1	11/24/14 12:28 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	11/24/14 12:28 PM
Surr: a,a,a-Trifluorotoluene	93.4	0	87-113		%REC	1	11/24/14 12:28 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **RO**
Calcium	167	5.00	15.0		mg/L	50	11/24/14 11:50 AM
Magnesium	12.1	0.100	0.300		mg/L	1	11/24/14 12:50 PM
Potassium	2.76	0.100	0.300		mg/L	1	11/24/14 12:50 PM
Sodium	224	5.00	15.0		mg/L	50	11/24/14 11:50 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	130	3.00	10.0		mg/L	10	11/18/14 11:26 AM
Nitrate-N	1.80	0.100	0.500		mg/L	1	11/18/14 11:09 AM
Sulfate	84.4	1.00	3.00		mg/L	1	11/18/14 11:09 AM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	339	10.0	20.0		mg/L @ pH 4.54	1	11/20/14 01:52 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.54	1	11/20/14 01:52 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.54	1	11/20/14 01:52 PM
Alkalinity, Total (As CaCO3)	339	20.0	20.0		mg/L @ pH 4.54	1	11/20/14 01:52 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	762	10.0	10.0		mg/L	1	11/20/14 09:00 AM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *25-Nov-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	Trip Blank
Project:	Legacy Chamberlain	**Lab ID:**	1411131-02
Project No:	12-0126-01	**Collection Date:**	11/17/14 02:30 PM
Lab Order:	1411131	**Matrix:**	TRIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	11/24/14 12:07 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	11/24/14 12:07 PM
Toluene	ND	0.00200	0.00600		mg/L	1	11/24/14 12:07 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	11/24/14 12:07 PM
Surr: a,a,a-Trifluorotoluene	94.6	0	87-113		%REC	1	11/24/14 12:07 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_141124B

The QC data in batch 66691 applies to the following samples: 1411131-01A, 1411131-02A

Sample ID **LCS-66691** Batch ID: **66691** TestNo: **SW8021B** Units: **mg/L**
SampType: **LCS** Run ID: **GC8_141124B** Analysis Date: **11/24/2014 11:25:06 A** Prep Date: **11/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0481	0.00200	0.0464	0	104	81	125			
Toluene	0.0483	0.00600	0.0464	0	104	84	123			
Ethylbenzene	0.0485	0.00600	0.0464	0	105	83	119			
Xylenes, Total	0.146	0.00900	0.139	0	105	81	117			
Surr: a,a,a-Trifluorotoluene	189		200.0		94.7	87	113			

Sample ID **MB-66691** Batch ID: **66691** TestNo: **SW8021B** Units: **mg/L**
SampType: **MBLK** Run ID: **GC8_141124B** Analysis Date: **11/24/2014 11:46:13 A** Prep Date: **11/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	189		200.0		94.5	87	113			

Sample ID **1411136-01AMS** Batch ID: **66691** TestNo: **SW8021B** Units: **mg/L**
SampType: **MS** Run ID: **GC8_141124B** Analysis Date: **11/24/2014 1:11:41 PM** Prep Date: **11/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0478	0.00200	0.0464	0	103	81	125			
Toluene	0.0480	0.00600	0.0464	0	103	84	123			
Ethylbenzene	0.0479	0.00600	0.0464	0	103	83	119			
Xylenes, Total	0.144	0.00900	0.139	0	103	81	117			
Surr: a,a,a-Trifluorotoluene	190		200.0		94.9	87	113			

Sample ID **1411136-01AMSD** Batch ID: **66691** TestNo: **SW8021B** Units: **mg/L**
SampType: **MSD** Run ID: **GC8_141124B** Analysis Date: **11/24/2014 1:32:13 PM** Prep Date: **11/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0472	0.00200	0.0464	0	102	81	125	1.08	20	
Toluene	0.0476	0.00600	0.0464	0	103	84	123	0.739	20	
Ethylbenzene	0.0478	0.00600	0.0464	0	103	83	119	0.159	20	
Xylenes, Total	0.143	0.00900	0.139	0	103	81	117	0.621	20	
Surr: a,a,a-Trifluorotoluene	190		200.0		95.0	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_141124B

Sample ID **ICV-141124**	Batch ID: **R76528**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_141124B**	Analysis Date: **11/24/2014 9:16:36 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0926	0.00200	0.0928	0	99.8	80	120			
Toluene	0.0940	0.00600	0.0928	0	101	80	120			
Ethylbenzene	0.0941	0.00600	0.0928	0	101	80	120			
Xylenes, Total	0.280	0.00900	0.278	0	101	80	120			
Surr: a,a,a-Trifluorotoluene	191		200.0		95.7	87	113			

Sample ID **CCV1-141124**	Batch ID: **R76528**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_141124B**	Analysis Date: **11/24/2014 11:03:33 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0474	0.00200	0.0464	0	102	80	120			
Toluene	0.0478	0.00600	0.0464	0	103	80	120			
Ethylbenzene	0.0478	0.00600	0.0464	0	103	80	120			
Xylenes, Total	0.144	0.00900	0.139	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	190		200.0		95.1	87	113			

Sample ID **CCV2-141124**	Batch ID: **R76528**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_141124B**	Analysis Date: **11/24/2014 2:14:32 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0481	0.00200	0.0464	0	104	80	120			
Toluene	0.0483	0.00600	0.0464	0	104	80	120			
Ethylbenzene	0.0481	0.00600	0.0464	0	104	80	120			
Xylenes, Total	0.144	0.00900	0.139	0	104	80	120			
Surr: a,a,a-Trifluorotoluene	191		200.0		95.4	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141124C

The QC data in batch 66598 applies to the following samples: 1411131-01B

Sample ID	**MB-66598**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:32:00 A**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID	**LCS-66598**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:34:00 A**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.78	0.300	5.00	0	95.7	80	120			
Magnesium	5.17	0.300	5.00	0	103	80	120			
Potassium	5.02	0.300	5.00	0	100	80	120			
Sodium	5.27	0.300	5.00	0	105	80	120			

Sample ID	**LCSD-66598**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:36:00 A**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.70	0.300	5.00	0	93.9	80	120	1.85	15	
Magnesium	5.14	0.300	5.00	0	103	80	120	0.520	15	
Potassium	4.95	0.300	5.00	0	99.1	80	120	1.27	15	
Sodium	5.24	0.300	5.00	0	105	80	120	0.588	15	

Sample ID	**1411134-08A SD**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:48:00 A**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	7.77	1.50	0	7.74				0.363	10	

Sample ID	**1411134-08A PDS**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 12:08:00 P**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	12.6	0.300	5.00	7.74	98.0	80	120			

Sample ID	**1411134-08A MS**	Batch ID:	**66598**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 12:10:00 P**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	220	0.300	5.00	219	28.7	80	120			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141124C

Sample ID	1411134-08A MS	Batch ID:	66598	TestNo:	SW6020A	Units:	mg/L
SampType:	MS	Run ID:	ICP-MS4_141124C	Analysis Date:	11/24/2014 12:10:00 P	Prep Date:	11/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	77.8	0.300	5.00	72.0	116	80	120			
Potassium	12.4	0.300	5.00	7.74	93.8	80	120			
Sodium	358	0.300	5.00	351	146	80	120			S

Sample ID	1411134-08A MSD	Batch ID:	66598	TestNo:	SW6020A	Units:	mg/L
SampType:	MSD	Run ID:	ICP-MS4_141124C	Analysis Date:	11/24/2014 12:12:00 P	Prep Date:	11/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	223	0.300	5.00	219	85.2	80	120	1.27	15	
Magnesium	78.2	0.300	5.00	72.0	125	80	120	0.554	15	S
Potassium	12.6	0.300	5.00	7.74	96.2	80	120	0.946	15	
Sodium	361	0.300	5.00	351	213	80	120	0.930	15	S

Sample ID	1411134-08A SD	Batch ID:	66598	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_141124C	Analysis Date:	11/24/2014 12:46:00 P	Prep Date:	11/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	219	150	0	221				0.958	10	
Magnesium	79.6	150	0	78.6				1.36	10	
Sodium	419	150	0	389				7.44	10	

Sample ID	1411134-08A PDS	Batch ID:	66598	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_141124C	Analysis Date:	11/24/2014 12:48:00 P	Prep Date:	11/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	758	30.0	500	221	108	80	120			
Magnesium	651	30.0	500	78.6	114	80	120			
Sodium	968	30.0	500	389	116	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141124C

Sample ID	**ICV-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 10:02:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.38	0.300	2.50	0	95.2	90	110			
Magnesium	2.55	0.300	2.50	0	102	90	110			
Potassium	2.44	0.300	2.50	0	97.8	90	110			
Sodium	2.54	0.300	2.50	0	102	90	110			

Sample ID	**LCVL-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 10:07:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0943	0.300	0.100	0	94.3	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.0945	0.300	0.100	0	94.5	70	130			
Sodium	0.110	0.300	0.100	0	110	70	130			

Sample ID	**CCV2-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:18:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.70	0.300	5.00	0	94.0	90	110			
Magnesium	5.02	0.300	5.00	0	100	90	110			
Potassium	4.91	0.300	5.00	0	98.3	90	110			
Sodium	5.17	0.300	5.00	0	103	90	110			

Sample ID	**LCVL2-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 11:23:00 A**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0923	0.300	0.100	0	92.3	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.0995	0.300	0.100	0	99.5	70	130			
Sodium	0.206	0.300	0.100	0	206	70	130			S

Sample ID	**CCV3-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 12:14:00 P**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.77	0.300	5.00	0	95.5	90	110			
Magnesium	5.05	0.300	5.00	0	101	90	110			
Potassium	4.96	0.300	5.00	0	99.2	90	110			
Sodium	5.24	0.300	5.00	0	105	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_141124C

Sample ID	**LCVL3-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 12:32:00 P**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0950	0.300	0.100	0	95.0	70	130			
Magnesium	0.103	0.300	0.100	0	103	70	130			
Potassium	0.104	0.300	0.100	0	104	70	130			
Sodium	0.203	0.300	0.100	0	203	70	130			S

Sample ID	**CCV4-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 1:10:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	5.05	0.300	5.00	0	101	90	110			
Potassium	4.95	0.300	5.00	0	98.9	90	110			
Sodium	5.10	0.300	5.00	0	102	90	110			

Sample ID	**LCVL4-141124**	Batch ID:	**R76511**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_141124C**	Analysis Date:	**11/24/2014 1:28:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	0.101	0.300	0.100	0	101	70	130			
Potassium	0.0969	0.300	0.100	0	96.9	70	130			
Sodium	0.154	0.300	0.100	0	154	70	130			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_141118A

The QC data in batch 66588 applies to the following samples: 1411131-01C

Sample ID	MB-66588	Batch ID:	66588	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_141118A	Analysis Date:	11/18/2014 10:07:02 A	Prep Date:	11/18/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	LCS-66588	Batch ID:	66588	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_141118A	Analysis Date:	11/18/2014 10:21:39 A	Prep Date:	11/18/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110			
Nitrate-N	5.01	0.500	5.000	0	100	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

Sample ID	LCSD-66588	Batch ID:	66588	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_141118A	Analysis Date:	11/18/2014 10:36:15 A	Prep Date:	11/18/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110	0.602	20	
Nitrate-N	4.99	0.500	5.000	0	99.8	90	110	0.382	20	
Sulfate	30.2	3.00	30.00	0	101	90	110	0.343	20	

Sample ID	1411133-02AMS	Batch ID:	66588	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_141118A	Analysis Date:	11/18/2014 12:06:54 P	Prep Date:	11/18/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2260	100	2000	228.1	102	90	110			
Nitrate-N	443	50.0	451.6	0	98.2	90	110			
Sulfate	4210	300	2000	2108	105	90	110			

Sample ID	1411133-02AMSD	Batch ID:	66588	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_141118A	Analysis Date:	11/18/2014 12:21:30 P	Prep Date:	11/18/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2260	100	2000	228.1	102	90	110	0.002	20	
Nitrate-N	445	50.0	451.6	0	98.5	90	110	0.355	20	
Sulfate	4220	300	2000	2108	105	90	110	0.210	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_141118A

Sample ID	ICV-141118	Batch ID:	R76411	TestNo:	E300	Units:	mg/L
SampType:	ICV	Run ID:	IC_141118A	Analysis Date:	11/18/2014 9:48:20 AM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.6	1.00	25.00	0	102	90	110			
Nitrate-N	12.8	0.500	12.50	0	103	90	110			
Sulfate	76.5	3.00	75.00	0	102	90	110			

Sample ID	CCV1-141118	Batch ID:	R76411	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC_141118A	Analysis Date:	11/18/2014 1:42:56 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.96	1.00	10.00	0	99.6	90	110			
Nitrate-N	4.96	0.500	5.000	0	99.3	90	110			
Sulfate	29.9	3.00	30.00	0	99.6	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_141120A

The QC data in batch 66612 applies to the following samples: 1411131-01C

Sample ID	MB-66612	Batch ID:	66612	TestNo:	M2320 B	Units:	mg/L @ pH 4.5
SampType:	MBLK	Run ID:	TITRATOR_141120A	Analysis Date:	11/20/2014 12:28:00 P	Prep Date:	11/20/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	LCS-66612	Batch ID:	66612	TestNo:	M2320 B	Units:	mg/L @ pH 4.52
SampType:	LCS	Run ID:	TITRATOR_141120A	Analysis Date:	11/20/2014 12:33:00 P	Prep Date:	11/20/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.0	20.0	50.00	0	106	74	129			

Sample ID	1411117-01D DUP	Batch ID:	66612	TestNo:	M2320 B	Units:	mg/L @ pH 4.52
SampType:	DUP	Run ID:	TITRATOR_141120A	Analysis Date:	11/20/2014 1:05:00 PM	Prep Date:	11/20/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	289	20.0	0	283.9				1.92	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	289	20.0	0	283.9				1.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_141120A

Sample ID **ICV-141120**	Batch ID: **R76450**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **ICV**	Run ID: **TITRATOR_141120A**	Analysis Date: **11/20/2014 12:23:00 P**	Prep Date: **11/20/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	4.48	20.0	0							
Alkalinity, Carbonate (As CaCO3)	96.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	98	102			

Sample ID **CCV1-141120**	Batch ID: **R76450**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.5**
SampType: **CCV**	Run ID: **TITRATOR_141120A**	Analysis Date: **11/20/2014 2:12:00 PM**	Prep Date: **11/20/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.28	20.0	0							
Alkalinity, Carbonate (As CaCO3)	96.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1411131
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_141119B

The QC data in batch 66618 applies to the following samples: 1411131-01C

Sample ID	**MB-66618**	Batch ID:	**66618**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_141119B**	Analysis Date:	**11/20/2014 9:00:00 AM**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-66618**	Batch ID:	**66618**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_141119B**	Analysis Date:	**11/20/2014 9:00:00 AM**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	742	10.0	745.6	0	99.5	90	113			

Sample ID	**1411117-01D-DUP**	Batch ID:	**66618**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_141119B**	Analysis Date:	**11/20/2014 9:00:00 AM**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3090	50.0	0	3120				1.13	5	

Sample ID	**1411138-01D-DUP**	Batch ID:	**66618**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_141119B**	Analysis Date:	**11/20/2014 9:00:00 AM**	Prep Date:	**11/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4500	50.0	0	4625				2.74	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

June 26, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1406204

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 6/19/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-12

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DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 65823

CHAIN-OF-CUSTODY

CLIENT: Larson and associates
ADDRESS: 507 N Marienfield ste 200
PHONE: 432-687-0901 FAX/E-MAIL:
DATA REPORTED TO: mark Larson
ADDITIONAL REPORT COPIES TO: coty wolf

DATE: 6-18-14 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1406204
PROJECT LOCATION OR NAME: 12-0126-01 Legacy chamberlin
CLENT PROJECT #: ✓ COLLECTOR: RW

Authorize 5% surcharge for TRRP Report? ☐ Yes ☑ No

S=SOIL W=WATER A=AIR L=LIQUID P=PAINT SL=SLUDGE O=OTHER SO=SOLID

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☑ MTBE ☐ (METHOD 8021) | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO (METHOD 8015) ☐ DRO (METHOD 8105) ☐ | VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐ | 8081 PEST ☐ 608 PEST/PCB ☐ 8270 PEST ☐ | 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ | 8321 HERB ☐ 8330 EXPL ☐ PERCHLORATE ☐ | METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐ | RCRA ☐ TX11 ☐ ____ ☐ | PH ☐ HEX CHROM ☐ ALKALINITY ☑ | CHLORIDE ☑ ANIONS ☐ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☑ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | nitrates | sodium, magnesium, calcium | sulfates, chlorides, alkalinity

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	FIELD NOTES
mw 1	01	6-18-14	10:50	W	Poly/Glas		✓	✓		✓		
TOTAL												

RELINQUISHED BY: (Signature) DATE/TIME 6-18-14 3:34pm RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME 6/19/14 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ~~☐~~ 6/19/14
NORMAL ☑
OTHER ☐ ____

LABORATORY USE ONLY:
RECEIVING TEMP: 4.6 THERM #: 57
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #:
☐ APC DELIVERY
☐ HAND DELIVERED

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Airbill No. 48852756

48852756

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Company Name

Street Address (No P.O. Box or P.O. Box Zip Code Deliveries)

Suite / Floor

City | State | Zip

2. From: Print Name (Person) | Phone (Important) 432-687-0901

Company Name
LARSON & ASSOCIATES, INC.

Street Address
507 N. MARIENFELD ST.

Suite / Floor
#200

City | State | Zip
MIDLAND | TX | 79701

3. Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.

- ☑ **LSO Priority Overnight*** By 10:30 a.m. to most cities
- ☐ **LSO Early Overnight*** By 8:30 a.m. select cities
- ☐ **LSO Economy Next Day*** By 3 p.m. to most cities
- ☐ **LSO 2nd Day***
- ☐ **LSO Ground**
- ☐ **LSO Saturday***
- ☐ Other_____

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Assumed LSO Priority Overnight service unless otherwise noted.

☐ Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

4. Package: Weight:

Your Company's Billing Reference Information

Ship Date: (mm/dd/yy) 6/18/11

5. Payment:

FOR DRIVER USE ONLY

Driver Number _____

☐ Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location _____

Date: _____

Time: _____

City Code:

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DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates | Date Received: 6/19/2014

Work Order Number 1406204 | Received by JB

Checklist completed by [signature] 6/19/2014 (Signature / Date) | Reviewed by [initials] 6/19/2014 (Initials / Date)

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	4.6 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by 9
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc. **Date:** *26-Jun-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1406204

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW6020A - Metals Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 6/19/2014. A total of 1 sample was received and analyzed. The samples arrived in good condition and were properly packaged. The Time of Collection was Mountain Standard Time.

METALS ANALYSIS

For metals Analysis, the recovery of Calcium for the Low Level Calibration Verification (LCVL-140620) was slightly above the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was detected in the associated samples at greater than 10x the amount detected in the bracketing QC sample. No further corrective actions were taken.

For Metals Analysis, the recovery of Calcium for the Matrix Spike and Matrix Spike Duplicate (1406177-01 MS/MSD) was below the method control limits. These are flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. No further corrective actions were taken.

For Metals Analysis, the recoveries of Magnesium, Potassium and Sodium for the Post Digestion Spike (1406177-01 PDS) were above the method control limits. These are flagged accordingly in the QC Summary Report. These analytes were within method control limits in the associated Serial Dilution. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *26-Jun-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1406204

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1406204-01	MW-1		06/18/14 10:50 AM	6/19/2014

Lab Order: 1406204
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1406204-01A	MW-1	06/18/14 10:50 AM	Aqueous	SW5030C	Purge and Trap Water GC	06/24/14 08:52 AM	64311
1406204-01B	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
1406204-01C	MW-1	06/18/14 10:50 AM	Aqueous	M2320 B	Alkalinity Preparation	06/24/14 09:02 AM	64317
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	M2540C	TDS Preparation	06/19/14 10:36 AM	64196

Lab Order: 1406204
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1406204-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	64311	1	06/24/14 01:52 PM	GC8_140624A
1406204-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	1	06/20/14 12:30 PM	ICP-MS4_140620B
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	50	06/20/14 12:22 PM	ICP-MS4_140620B
1406204-01C	MW-1	Aqueous	M2320 B	Alkalinity	64317	1	06/24/14 10:49 AM	TITRATOR_140624B
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	10	06/19/14 04:41 PM	IC_140619A
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	1	06/19/14 03:23 PM	IC_140619A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	64196	1	06/20/14 09:15 AM	WC_140619D

DHL Analytical, Inc.

Date: *26-Jun-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1406204-01
Project No:	12-0126-01	**Collection Date:**	06/18/14 10:50 AM
Lab Order:	1406204	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	06/24/14 01:52 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Toluene	ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	06/24/14 01:52 PM
Surr: a,a,a-Trifluorotoluene	106	0	87-113		%REC	1	06/24/14 01:52 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SW**
Calcium	170	5.00	15.0		mg/L	50	06/20/14 12:22 PM
Magnesium	13.7	5.00	15.0	J	mg/L	50	06/20/14 12:22 PM
Potassium	2.91	0.100	0.300		mg/L	1	06/20/14 12:30 PM
Sodium	223	5.00	15.0		mg/L	50	06/20/14 12:22 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	120	3.00	10.0		mg/L	10	06/19/14 04:41 PM
Nitrate-N	2.05	0.100	0.500		mg/L	1	06/19/14 03:23 PM
Sulfate	92.7	1.00	3.00		mg/L	1	06/19/14 03:23 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	353	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Total (As CaCO3)	353	20.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **MK**
Total Dissolved Solids (Residue, Filterable)	816	10.0	10.0		mg/L	1	06/20/14 09:15 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc. **Date:** *26-Jun-14*

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140624A

The QC data in batch 64311 applies to the following samples: 1406204-01A

Sample ID **LCS-64311**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 10:16:38 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0511	0.00200	0.0500	0	102	81	125			
Toluene	0.0551	0.00600	0.0500	0	110	84	123			
Ethylbenzene	0.0560	0.00600	0.0500	0	112	83	119			
Xylenes, Total	0.168	0.00900	0.150	0	112	81	117			
Surr: a,a,a-Trifluorotoluene	207		200.0		103	87	113			

Sample ID **MB-64311**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 10:56:43 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	199		200.0		99.6	87	113			

Sample ID **1406203-02AMS**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 12:14:35 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0507	0.00200	0.0500	0	101	81	125			
Toluene	0.0540	0.00600	0.0500	0	108	84	123			
Ethylbenzene	0.0544	0.00600	0.0500	0	109	83	119			
Xylenes, Total	0.163	0.00900	0.150	0	109	81	117			
Surr: a,a,a-Trifluorotoluene	210		200.0		105	87	113			

Sample ID **1406203-02AMSD**	Batch ID: **64311**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 12:33:53 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0428	0.00200	0.0500	0	85.6	81	125	16.8	20	
Toluene	0.0457	0.00600	0.0500	0	91.3	84	123	16.7	20	
Ethylbenzene	0.0454	0.00600	0.0500	0	90.9	83	119	18.0	20	
Xylenes, Total	0.137	0.00900	0.150	0	91.4	81	117	17.4	20	
Surr: a,a,a-Trifluorotoluene	176		200.0		87.8	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140624A

Sample ID **ICV-140624**	Batch ID: **R73937**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 9:40:44 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0977	0.00200	0.100	0	97.7	80	120			
Toluene	0.103	0.00600	0.100	0	103	80	120			
Ethylbenzene	0.104	0.00600	0.100	0	104	80	120			
Xylenes, Total	0.310	0.00900	0.300	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	208		200.0		104	87	113			

Sample ID **CCV1-140624**	Batch ID: **R73937**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_140624A**	Analysis Date: **6/24/2014 3:22:40 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0489	0.00200	0.0500	0	97.9	80	120			
Toluene	0.0520	0.00600	0.0500	0	104	80	120			
Ethylbenzene	0.0525	0.00600	0.0500	0	105	80	120			
Xylenes, Total	0.155	0.00900	0.150	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	204		200.0		102	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

The QC data in batch 64244 applies to the following samples: 1406204-01B

Sample ID **MB-64244** Batch ID: **64244** TestNo: **SW6020A** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 11:32:00 AM** Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID **LCS-64244** Batch ID: **64244** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 11:36:00 AM** Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.74	0.300	5.00	0	94.9	80	120			
Magnesium	5.00	0.300	5.00	0	99.9	80	120			
Potassium	5.02	0.300	5.00	0	100	80	120			
Sodium	5.00	0.300	5.00	0	100	80	120			

Sample ID **LCSD-64244** Batch ID: **64244** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 11:38:00 AM** Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.75	0.300	5.00	0	94.9	80	120	0.018	15	
Magnesium	4.95	0.300	5.00	0	99.0	80	120	0.939	15	
Potassium	5.02	0.300	5.00	0	100	80	120	0.033	15	
Sodium	4.98	0.300	5.00	0	99.6	80	120	0.475	15	

Sample ID **1406177-01B SD** Batch ID: **64244** TestNo: **SW6020A** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 11:46:00 AM** Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	34.7	15.0	0	33.0				4.89	10	
Potassium	0	15.0	0	2.16				0	10	
Sodium	33.0	15.0	0	31.6				4.51	10	

Sample ID **1406177-01B PDS** Batch ID: **64244** TestNo: **SW6020A** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS4_140620B** Analysis Date: **6/20/2014 12:05:00 PM** Prep Date: **6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	97.6	3.00	50.0	33.0	129	80	120			S
Potassium	62.6	3.00	50.0	2.16	121	80	120			S
Sodium	97.7	3.00	50.0	31.6	132	80	120			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID	**1406177-01B MS**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:07:00 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	122	3.00	5.00	124	-43.8	80	120			S
Magnesium	37.7	3.00	5.00	33.0	92.3	80	120			
Potassium	6.90	3.00	5.00	2.16	94.7	80	120			
Sodium	35.8	3.00	5.00	31.6	84.5	80	120			

Sample ID	**1406177-01B MSD**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:09:00 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	124	3.00	5.00	124	-10.7	80	120	1.35	15	S
Magnesium	38.4	3.00	5.00	33.0	107	80	120	1.90	15	
Potassium	7.04	3.00	5.00	2.16	97.5	80	120	2.01	15	
Sodium	36.4	3.00	5.00	31.6	96.0	80	120	1.59	15	

Sample ID	**1406177-01B SD**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:38:00 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	125	75.0	0	122				1.93	10	

Sample ID	**1406177-01B PDS**	Batch ID:	**64244**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:40:00 PM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	376	15.0	250	123	101	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID	**ICV-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:21:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.56	0.300	2.50	0	103	90	110			
Magnesium	2.74	0.300	2.50	0	110	90	110			
Potassium	2.74	0.300	2.50	0	110	90	110			
Sodium	2.75	0.300	2.50	0	110	90	110			

Sample ID	**LCVL-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 11:24:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.105	0.300	0.100	0	105	70	130			
Magnesium	0.109	0.300	0.100	0	109	70	130			
Potassium	0.112	0.300	0.100	0	112	70	130			
Sodium	0.136	0.300	0.100	0	136	70	130			S

Sample ID	**CCV1-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:11:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.62	0.300	5.00	0	92.5	90	110			
Magnesium	4.95	0.300	5.00	0	99.0	90	110			
Potassium	4.79	0.300	5.00	0	95.8	90	110			
Sodium	4.96	0.300	5.00	0	99.1	90	110			

Sample ID	**LCVL1-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:18:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.102	0.300	0.100	0	102	70	130			
Magnesium	0.113	0.300	0.100	0	113	70	130			
Potassium	0.115	0.300	0.100	0	115	70	130			
Sodium	0.122	0.300	0.100	0	122	70	130			

Sample ID	**CCV2-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:42:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.66	0.300	5.00	0	93.2	90	110			
Magnesium	4.97	0.300	5.00	0	99.4	90	110			
Potassium	4.83	0.300	5.00	0	96.7	90	110			
Sodium	4.89	0.300	5.00	0	97.8	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_140620B

Sample ID	**LCVL2-140620**	Batch ID:	**R73874**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_140620B**	Analysis Date:	**6/20/2014 12:47:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.104	0.300	0.100	0	104	70	130			
Magnesium	0.114	0.300	0.100	0	114	70	130			
Potassium	0.111	0.300	0.100	0	111	70	130			
Sodium	0.109	0.300	0.100	0	109	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

The QC data in batch 64235 applies to the following samples: 1406204-01C

Sample ID	MB-64235	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_140619A	Analysis Date:	6/19/2014 9:53:27 AM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	LCS-64235	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_140619A	Analysis Date:	6/19/2014 10:08:04 AM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			
Nitrate-N	4.98	0.500	5.000	0	99.6	90	110			
Sulfate	30.2	3.00	30.00	0	101	90	110			

Sample ID	LCSD-64235	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_140619A	Analysis Date:	6/19/2014 10:22:40 AM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.94	1.00	10.00	0	99.4	90	110	0.932	20	
Nitrate-N	4.92	0.500	5.000	0	98.5	90	110	1.16	20	
Sulfate	29.8	3.00	30.00	0	99.5	90	110	1.25	20	

Sample ID	1406179-01AMS	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140619A	Analysis Date:	6/19/2014 1:25:10 PM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2320	100	2000	384.8	96.6	90	110			
Nitrate-N	429	50.0	451.6	0	94.9	90	110			
Sulfate	4210	300	2000	2180	102	90	110			

Sample ID	1406179-01AMSD	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_140619A	Analysis Date:	6/19/2014 1:39:47 PM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2300	100	2000	384.8	95.7	90	110	0.760	20	
Nitrate-N	424	50.0	451.6	0	93.9	90	110	1.02	20	
Sulfate	4190	300	2000	2180	101	90	110	0.390	20	

Sample ID	1406200-02AMS	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140619A	Analysis Date:	6/19/2014 1:54:23 PM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

Sample ID	1406200-02AMS	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140619A	Analysis Date:	6/19/2014 1:54:23 PM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2190	100	2000	256.3	96.8	90	110			
Nitrate-N	418	50.0	451.6	0	92.6	90	110			
Sulfate	4180	300	2000	2271	95.5	90	110			

Sample ID	1406200-02AMSD	Batch ID:	64235	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_140619A	Analysis Date:	6/19/2014 2:08:59 PM	Prep Date:	6/19/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2200	100	2000	256.3	97.3	90	110	0.472	20	
Nitrate-N	420	50.0	451.6	0	93.0	90	110	0.408	20	
Sulfate	4190	300	2000	2271	95.7	90	110	0.113	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140619A

Sample ID	ICV-140619	Batch ID:	R73863	TestNo:	E300	Units:	mg/L
SampType:	ICV	Run ID:	IC_140619A	Analysis Date:	6/19/2014 9:36:24 AM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.2	1.00	25.00	0	101	90	110			
Nitrate-N	12.5	0.500	12.50	0	99.9	90	110			
Sulfate	75.2	3.00	75.00	0	100	90	110			

Sample ID	CCV1-140619	Batch ID:	R73863	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC_140619A	Analysis Date:	6/19/2014 2:23:36 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.99	1.00	10.00	0	99.9	90	110			
Nitrate-N	4.91	0.500	5.000	0	98.3	90	110			
Sulfate	30.0	3.00	30.00	0	100	90	110			

Sample ID	CCV2-140619	Batch ID:	R73863	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC_140619A	Analysis Date:	6/19/2014 5:04:02 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.85	1.00	10.00	0	98.5	90	110			
Nitrate-N	4.87	0.500	5.000	0	97.4	90	110			
Sulfate	29.4	3.00	30.00	0	97.9	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140624B

The QC data in batch 64317 applies to the following samples: 1406204-01C

Sample ID	**MB-64317**	Batch ID:	**64317**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.48**
SampType:	**MBLK**	Run ID:	**TITRATOR_140624B**	Analysis Date:	**6/24/2014 10:14:00 AM**	Prep Date:	**6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	**LCS-64317**	Batch ID:	**64317**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.36**
SampType:	**LCS**	Run ID:	**TITRATOR_140624B**	Analysis Date:	**6/24/2014 10:18:00 AM**	Prep Date:	**6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.0	20.0	50.00	0	106	74	129			

Sample ID	**1406204-01C DUP**	Batch ID:	**64317**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.51**
SampType:	**DUP**	Run ID:	**TITRATOR_140624B**	Analysis Date:	**6/24/2014 10:55:00 AM**	Prep Date:	**6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	352	20.0	0	352.8				0.170	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	352	20.0	0	352.8				0.170	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140624B

Sample ID **ICV-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.4**
SampType: **ICV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 9:59:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.52	20.0	0							
Alkalinity, Carbonate (As CaCO3)	93.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	98.8	20.0	100.0	0	98.8	98	102			

Sample ID **CCV1-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.19**
SampType: **CCV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 11:08:00 AM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	5.84	20.0	0							
Alkalinity, Carbonate (As CaCO3)	97.4	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	103	20.0	100.0	0	103	90	110			

Sample ID **CCV2-140624**	Batch ID: **R73925**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.06**
SampType: **CCV**	Run ID: **TITRATOR_140624B**	Analysis Date: **6/24/2014 12:06:00 PM**	Prep Date: **6/24/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	9.68	20.0	0							
Alkalinity, Carbonate (As CaCO3)	95.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	105	20.0	100.0	0	105	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1406204
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_140619D

The QC data in batch 64196 applies to the following samples: 1406204-01C

Sample ID	**MB-64196**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-64196**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	763	10.0	745.6	0	102	90	113			

Sample ID	**1406197-02A-DUP**	Batch ID:	**64196**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_140619D**	Analysis Date:	**6/20/2014 9:15:00 AM**	Prep Date:	**6/19/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3070	50.0	0	3085				0.487	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

March 19, 2014

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1403093

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 2 sample(s) on 3/12/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-13-11

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CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Cory Wolf

DATE: 3/11/14 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: 1403093
PROJECT LOCATION OR NAME: Legacy Chamberlain
LAI PROJECT #: 12-0126-01 COLLECTOR: CH

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☒	VOC + Sulfates (SO4) Cat (Na, K, Mg)	FIELD NOTES
MW-1	01	3/11/14	2000	GW	3	X			X		X											X				X	X	X	
11		"	"	"	2				X																				
"		"	"	"	1		X		X																				
Trip Blank	02	3/11/14	—	W	2	X			X		X																			Run only on 3/12/14
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 3/11/14 5:39pm RECEIVED BY: (Signature) Forest

RELINQUISHED BY:(Signature) DATE/TIME 3/12/14 8:30 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.5 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☒ CARRIER BILL # Forest
☐ HAND DELIVERED

LSO

WWW.LSO.COM
Questions? Call 800-800-8984

Airbill No. 48814330

48814330

1. To: Print Name (Person): T. Barker Phone (Important): 5123888222

Company Name: DHL

Street Address (No P.O. Box or P.O. Box Zip Code Deliveries): 2300 Double Creek Dr.

Suite / Floor:

City: Round Rock State: TX Zip: 78664

2. From: Print Name (Person): [illegible] Phone (Important): [illegible]

Company Name: [illegible]

Street Address: [illegible]

Suite / Floor: [illegible]

City: [illegible] State: TX Zip: 79701

3. Service: Visit www.lso.com for availability of services to your destination and enjoy added features by creating your shipping label online.

- [x] **LSO Priority Overnight*** By 10:30 a.m. to most cities
- [ ] **LSO Early Overnight*** By 8:30 a.m. select cities
- [ ] **LSO Economy Next Day*** By 3 p.m. to most cities
- [ ] **LSO 2nd Day***
- [ ] **LSO Ground**
- [ ] **LSO Saturday** MIA
- [ ] Other

*Check commitment times and availability at www.lso.com

Assumed LSO Priority Overnight service unless otherwise noted.

- [ ] Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

4. Package: Weight: [illegible]

Your Company's Billing Reference Information: 12-0126-01

Ship Date: (mm/dd/yy) 03/11/14

5. Payment:

FOR DRIVER USE ONLY

Driver Number: 104371

- [ ] Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location: [illegible]

Date: 03.11.14

Time: 1859

City Code: AUS

*LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSO IS NOT INTENDED FOR USE ON LSO GROUND SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.***

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Larson & Associates**

Date Received: **3/12/2014**

Work Order Number **1403093**

Received by **JB**

Checklist completed by: _____ 3/12/2014
Signature | Date

Reviewed by: JD 3/12/2014
Initials | Date

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	1.5 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 7179
	Adjusted? pS		Checked by 9
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *19-Mar-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1403093

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method SW6020A - Metals Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 3/12/14. A total of 2 samples were received. The Time of Collection was Mountain Standard Time. The samples arrived in good condition and were properly packaged.

ANIONS ANALYSIS

For Anions analysis performed on 3/12/14 the matrix spike duplicate recovery was below control limits for Nitrate-N. This is flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

METALS ANALYSIS

For Metals analysis performed on 3/13/14 the matrix spike and matrix spike duplicate recoveries were below control limits for Calcium and Sodium. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *19-Mar-14*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1403093

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1403093-01	MW-1		03/11/14 02:00 PM	3/12/2014
1403093-02	Trip Blank		03/11/14	3/12/2014

Lab Order: 1403093
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1403093-01A	MW-1	03/11/14 02:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322
1403093-01B	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
1403093-01C	MW-1	03/11/14 02:00 PM	Aqueous	M2320 B	Alkalinity Preparation	03/12/14 01:14 PM	62313
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
1403093-01D	MW-1	03/11/14 02:00 PM	Aqueous	M2540C	TDS Preparation	03/13/14 01:13 PM	62325
1403093-02A	Trip Blank	03/11/14	Trip Blank	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322

Lab Order: 1403093
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1403093-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:31 PM	GC8_140313A
1403093-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	50	03/13/14 04:17 PM	ICP-MS3_140313A
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	1	03/13/14 03:29 PM	ICP-MS3_140313A
1403093-01C	MW-1	Aqueous	M2320 B	Alkalinity	62313	1	03/12/14 02:16 PM	TITRATOR_140312A
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	1	03/12/14 11:49 AM	IC_140312B
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	10	03/12/14 11:00 AM	IC_140312B
1403093-01D	MW-1	Aqueous	M2540C	Total Dissolved Solids	62325	1	03/14/14 08:40 AM	WC_140313A
1403093-02A	Trip Blank	Trip Blank	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:11 PM	GC8_140313A

DHL Analytical, Inc.

Date: *19-Mar-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1403093-01
Project No:	12-0126-01	**Collection Date:**	03/11/14 02:00 PM
Lab Order:	1403093	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **AV**
Benzene	ND	0.000800	0.00200		mg/L	1	03/13/14 12:31 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:31 PM
Toluene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:31 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	03/13/14 12:31 PM
Surr: a,a,a-Trifluorotoluene	105	0	87-113		%REC	1	03/13/14 12:31 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **SW**
Calcium	361	5.00	15.0		mg/L	50	03/13/14 04:17 PM
Magnesium	14.1	0.100	0.300		mg/L	1	03/13/14 03:29 PM
Potassium	3.05	0.100	0.300		mg/L	1	03/13/14 03:29 PM
Sodium	196	5.00	15.0		mg/L	50	03/13/14 04:17 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **JBC**
Chloride	147	3.00	10.0		mg/L	10	03/12/14 11:00 AM
Nitrate-N	1.96	0.100	0.500		mg/L	1	03/12/14 11:49 AM
Sulfate	93.8	10.0	30.0		mg/L	10	03/12/14 11:00 AM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	294	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
Alkalinity, Total (As CaCO3)	294	20.0	20.0		mg/L @ pH 4.51	1	03/12/14 02:16 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **MK**
Total Dissolved Solids (Residue, Filterable)	798	10.0	10.0		mg/L	1	03/14/14 08:40 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc.

Date: *19-Mar-14*

CLIENT:	Larson & Associates	**Client Sample ID:**	Trip Blank
Project:	Legacy Chamberlain	**Lab ID:**	1403093-02
Project No:	12-0126-01	**Collection Date:**	03/11/14
Lab Order:	1403093	**Matrix:**	TRIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **AV**
Benzene	ND	0.000800	0.00200		mg/L	1	03/13/14 12:11 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM
Toluene	ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	03/13/14 12:11 PM
Surr: a,a,a-Trifluorotoluene	104	0	87-113		%REC	1	03/13/14 12:11 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140313A

The QC data in batch 62322 applies to the following samples: 1403093-01A, 1403093-02A

Sample ID **LCS-62322** Batch ID: **62322** TestNo: **SW8021B** Units: **mg/L**
SampType: **LCS** Run ID: **GC8_140313A** Analysis Date: **3/13/2014 10:43:12 AM** Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0511	0.00200	0.0500	0	102	81	125			
Toluene	0.0532	0.00600	0.0500	0	106	84	123			
Ethylbenzene	0.0537	0.00600	0.0500	0	107	83	119			
Xylenes, Total	0.160	0.00900	0.150	0	107	81	117			
Surr: a,a,a-Trifluorotoluene	207		200.0		103	87	113			

Sample ID **MB-62322** Batch ID: **62322** TestNo: **SW8021B** Units: **mg/L**
SampType: **MBLK** Run ID: **GC8_140313A** Analysis Date: **3/13/2014 11:23:14 AM** Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	209		200.0		105	87	113			

Sample ID **1403093-01AMS** Batch ID: **62322** TestNo: **SW8021B** Units: **mg/L**
SampType: **MS** Run ID: **GC8_140313A** Analysis Date: **3/13/2014 12:51:12 PM** Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00200	0.0500	0	95.0	81	125			
Toluene	0.0488	0.00600	0.0500	0	97.6	84	123			
Ethylbenzene	0.0493	0.00600	0.0500	0	98.7	83	119			
Xylenes, Total	0.147	0.00900	0.150	0	98.1	81	117			
Surr: a,a,a-Trifluorotoluene	190		200.0		94.9	87	113			

Sample ID **1403093-01AMSD** Batch ID: **62322** TestNo: **SW8021B** Units: **mg/L**
SampType: **MSD** Run ID: **GC8_140313A** Analysis Date: **3/13/2014 1:11:15 PM** Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0512	0.00200	0.0500	0	102	81	125	7.62	20	
Toluene	0.0532	0.00600	0.0500	0	106	84	123	8.60	20	
Ethylbenzene	0.0533	0.00600	0.0500	0	107	83	119	7.78	20	
Xylenes, Total	0.159	0.00900	0.150	0	106	81	117	8.09	20	
Surr: a,a,a-Trifluorotoluene	206		200.0		103	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_140313A

Sample ID **ICV-140313**	Batch ID: **R71771**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 9:47:19 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.104	0.00200	0.100	0	104	80	120			
Toluene	0.107	0.00600	0.100	0	107	80	120			
Ethylbenzene	0.107	0.00600	0.100	0	107	80	120			
Xylenes, Total	0.322	0.00900	0.300	0	107	80	120			
Surr: a,a,a-Trifluorotoluene	214		200.0		107	87	113			

Sample ID **CCV1-140313**	Batch ID: **R71771**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_140313A**	Analysis Date: **3/13/2014 2:08:36 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0502	0.00200	0.0500	0	100	80	120			
Toluene	0.0524	0.00600	0.0500	0	105	80	120			
Ethylbenzene	0.0530	0.00600	0.0500	0	106	80	120			
Xylenes, Total	0.159	0.00900	0.150	0	106	80	120			
Surr: a,a,a-Trifluorotoluene	209		200.0		104	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

The QC data in batch 62314 applies to the following samples: 1403093-01B

Sample ID	MB-62314	Batch ID:	62314	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS3_140313A	Analysis Date:	3/13/2014 2:47:00 PM	Prep Date:	3/13/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID	LCS-62314	Batch ID:	62314	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS3_140313A	Analysis Date:	3/13/2014 2:53:00 PM	Prep Date:	3/13/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.26	0.300	5.00	0	105	80	120			
Magnesium	5.01	0.300	5.00	0	100	80	120			
Potassium	5.32	0.300	5.00	0	106	80	120			
Sodium	5.10	0.300	5.00	0	102	80	120			

Sample ID	LCSD-62314	Batch ID:	62314	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS3_140313A	Analysis Date:	3/13/2014 2:59:00 PM	Prep Date:	3/13/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.19	0.300	5.00	0	104	80	120	1.28	15	
Magnesium	4.91	0.300	5.00	0	98.2	80	120	1.92	15	
Potassium	5.17	0.300	5.00	0	103	80	120	2.84	15	
Sodium	5.00	0.300	5.00	0	99.9	80	120	1.98	15	

Sample ID	1403072-01C SD	Batch ID:	62314	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS3_140313A	Analysis Date:	3/13/2014 3:17:00 PM	Prep Date:	3/13/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	5.06	1.50	0	4.96				2.10	10	
Potassium	7.21	1.50	0	7.05				2.23	10	

Sample ID	1403072-01C PDS	Batch ID:	62314	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS3_140313A	Analysis Date:	3/13/2014 3:41:00 PM	Prep Date:	3/13/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	9.51	0.300	5.00	4.96	91.2	80	120			
Potassium	11.8	0.300	5.00	7.05	94.6	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID **1403072-01C MS**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 3:47:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	0.300	5.00	198	38.0	80	120			S
Magnesium	9.50	0.300	5.00	4.96	90.8	80	120			
Potassium	12.0	0.300	5.00	7.05	99.6	80	120			
Sodium	52.6	0.300	5.00	48.7	78.2	80	120			S

Sample ID **1403072-01C MSD**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 3:53:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	200	0.300	5.00	198	26.0	80	120	0.300	15	S
Magnesium	9.47	0.300	5.00	4.96	90.4	80	120	0.242	15	
Potassium	11.9	0.300	5.00	7.05	97.0	80	120	1.09	15	
Sodium	52.0	0.300	5.00	48.7	67.2	80	120	1.05	15	S

Sample ID **1403072-01C SD**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 4:05:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	205	15.0	0	204				0.464	10	
Sodium	49.3	15.0	0	50.1				1.49	10	

Sample ID **1403072-01C PDS**	Batch ID: **62314**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 4:11:00 PM**	Prep Date: **3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	253	3.00	50.0	204	97.6	80	120			
Sodium	102	3.00	50.0	50.1	103	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID	**ILCVL-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 12:58:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0929	0.300	0.100	0	92.9	70	130			
Magnesium	0.105	0.300	0.100	0	105	70	130			
Potassium	0.115	0.300	0.100	0	115	70	130			
Sodium	0.114	0.300	0.100	0	114	70	130			

Sample ID	**LCVL1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:35:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0927	0.300	0.100	0	92.7	70	130			
Magnesium	0.104	0.300	0.100	0	104	70	130			
Potassium	0.117	0.300	0.100	0	117	70	130			
Sodium	0.102	0.300	0.100	0	102	70	130			

Sample ID	**LCVL2-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 4:35:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.106	0.300	0.100	0	106	70	130			
Magnesium	0.100	0.300	0.100	0	100	70	130			
Potassium	0.122	0.300	0.100	0	122	70	130			
Sodium	0.102	0.300	0.100	0	102	70	130			

Sample ID	**ICV1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 12:46:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.34	0.300	2.50	0	93.8	90	110			
Magnesium	2.42	0.300	2.50	0	96.6	90	110			
Potassium	2.45	0.300	2.50	0	98.0	90	110			
Sodium	2.42	0.300	2.50	0	96.6	90	110			

Sample ID	**CCV1-140313**	Batch ID:	**R71770**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS3_140313A**	Analysis Date:	**3/13/2014 2:10:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.48	0.300	5.00	0	110	90	110			
Magnesium	5.22	0.300	5.00	0	104	90	110			
Potassium	5.37	0.300	5.00	0	107	90	110			
Sodium	5.40	0.300	5.00	0	108	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_140313A

Sample ID **CCV2-140313**	Batch ID: **R71770**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS3_140313A**	Analysis Date: **3/13/2014 4:23:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.46	0.300	5.00	0	109	90	110			
Magnesium	5.11	0.300	5.00	0	102	90	110			
Potassium	5.49	0.300	5.00	0	110	90	110			
Sodium	5.15	0.300	5.00	0	103	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

The QC data in batch 62308 applies to the following samples: 1403093-01C

Sample ID	LCS-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:13:33 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Nitrate-N	5.18	0.500	5.000	0	104	90	110			
Sulfate	31.4	3.00	30.00	0	105	90	110			

Sample ID	LCSD-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:28:10 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.8	1.00	10.00	0	108	90	110	1.75	20	
Nitrate-N	5.25	0.500	5.000	0	105	90	110	1.24	20	
Sulfate	31.8	3.00	30.00	0	106	90	110	1.31	20	

Sample ID	MB-62308	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_140312B	Analysis Date:	3/12/2014 10:42:46 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	1403093-01C MS	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 11:20:01 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	347	10.0	200.0	147.3	99.8	90	110			
Sulfate	307	30.0	200.0	93.77	107	90	110			

Sample ID	1403093-01C MSD	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_140312B	Analysis Date:	3/12/2014 11:34:37 AM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	348	10.0	200.0	147.3	100	90	110	0.331	20	
Sulfate	307	30.0	200.0	93.77	107	90	110	0.018	20	

Sample ID	1403093-01C MS	Batch ID:	62308	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_140312B	Analysis Date:	3/12/2014 12:03:50 PM	Prep Date:	3/12/2014

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.09	0.500	4.516	1.955	91.5	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

Sample ID	**1403093-01C MSD**	Batch ID:	**62308**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC_140312B**	Analysis Date:	**3/12/2014 12:18:26 PM**	Prep Date:	**3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	6.13	0.500	4.516	2.905	71.4	90	110	0.712	20	S

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_140312B

Sample ID	**ICV-140312**	Batch ID:	**R71738**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**IC_140312B**	Analysis Date:	**3/12/2014 8:40:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.8	1.00	25.00	0	107	90	110			
Nitrate-N	13.3	0.500	12.50	0	107	90	110			
Sulfate	79.6	3.00	75.00	0	106	90	110			

Sample ID	**CCV1-140312**	Batch ID:	**R71738**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC_140312B**	Analysis Date:	**3/12/2014 12:47:39 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	11.0	1.00	10.00	0	110	90	110			
Nitrate-N	5.30	0.500	5.000	0	106	90	110			
Sulfate	32.5	3.00	30.00	0	108	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140312A

The QC data in batch 62313 applies to the following samples: 1403093-01C

Sample ID	**LCS-62313**	Batch ID:	**62313**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.35**
SampType:	**LCS**	Run ID:	**TITRATOR_140312A**	Analysis Date:	**3/12/2014 2:05:00 PM**	Prep Date:	**3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.4	20.0	50.00	0	107	74	129			

Sample ID	**MB-62313**	Batch ID:	**62313**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.42**
SampType:	**MBLK**	Run ID:	**TITRATOR_140312A**	Analysis Date:	**3/12/2014 2:07:00 PM**	Prep Date:	**3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	**1403093-01C DUP**	Batch ID:	**62313**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.51**
SampType:	**DUP**	Run ID:	**TITRATOR_140312A**	Analysis Date:	**3/12/2014 2:23:00 PM**	Prep Date:	**3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	294	20.0	0	294.2				0.109	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	294	20.0	0	294.2				0.109	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_140312A

Sample ID **ICV-140312**	Batch ID: **R71744**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **ICV**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:01:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	16.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	85.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	98	102			

Sample ID **CCV-140312**	Batch ID: **R71744**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.48**
SampType: **CCV**	Run ID: **TITRATOR_140312A**	Analysis Date: **3/12/2014 2:29:00 PM**	Prep Date: **3/12/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	17.8	20.0	0							
Alkalinity, Carbonate (As CaCO3)	83.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1403093
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_140313A

The QC data in batch 62325 applies to the following samples: 1403093-01D

Sample ID	**MB-62325**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-62325**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	757	10.0	745.6	0	102	90	113			

Sample ID	**1403093-01D-DUP**	Batch ID:	**62325**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_140313A**	Analysis Date:	**3/14/2014 8:40:00 AM**	Prep Date:	**3/13/2014**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	796	10.0	0	798.0				0.251	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

December 10, 2015

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1512059

RE: Legacy Chamberlain

Dear Mark Larson:

DHL Analytical, Inc. received 1 sample(s) on 12/4/2015 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-15-15

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CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 12/3/15 PAGE 1 OF 1
PO #: LAB WORK ORDER #: 1572059
PROJECT LOCATION OR NAME: Legacy Chamberlin
LAI PROJECT #: 12-0126-01 COLLECTOR: Sarah Shrode

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☒	Sulfates Nitrates Cat Matrt, Mgt	FIELD NOTES
MW-1	01	12/3/15	10:45	W	5	X	X		X		X													X			X	X	X	
TOTAL																													

RELINQUISHED BY:(Signature) Sarah Shrode DATE/TIME 12/3/15 5:00pm RECEIVED BY: (Signature) FEDEX
RELINQUISHED BY:(Signature) FEDEX DATE/TIME 12/4/15 1000 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.0 THERM #: 78
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☑ NOT USED
☐ CARRIER BILL # FEDEX
☐ HAND DELIVERED

12-0126-018 14-0107-01
Express Package US Airbill
FedEx Tracking Number 8057 8763 3974
Form ID No. 0215
Sender's Name
Phone
Company
Address
City
State TX ZIP
Dept./Floor/Suite/Room
2 Your Internal Billing Reference
3 To
Recipient's Name J. Barker
Company D'L Analytical
Phone 512 388-8222
Address 2300 Double Creek Dr.
Cannot deliver to P.O. boxes or P.O. ZIP codes.
Use this line for the HOLD location address or for continuation of your shipping address.
City Round Rock State TX ZIP 78664
HOLD Weekday
HOLD Saturday
4 Express Package Service
NOTE: Service order has changed. Please select carefully.
Packages up to 150 lbs.
For packages over 150 lbs., use the FedEx Express Freight US Airbill.
Next Business Day
FedEx First Overnight
FedEx Priority Overnight
FedEx Standard Overnight
2 or 3 Business Days
FedEx 2Day A.M.
FedEx 2Day
FedEx Express Saver
5 Packaging
FedEx Envelope*
FedEx Pak*
FedEx Box
FedEx Tube
Other
6 Special Handling and Delivery Signature Options
SATURDAY Delivery
No Signature Required
Direct Signature
Indirect Signature
Does this shipment contain dangerous goods?
No
Yes
Dry Ice
Cargo Aircraft Only
7 Payment Bill to:
Sender
Recipient
Third Party
Credit Card
Cash/Check
Total Packages
Total Weight
lbs.
Credit Card Auth.
611
fedex.com 1.800.GoFedEx 1.800.463.3339
3974

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates

Date Received: 12/4/2015

Work Order Number 1512059

Received by MB

Checklist completed by: _____ 12/4/2015
Signature Date

Reviewed by OL 12/4/2015
Initials Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	2.0 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by _____
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc. **Date:** *10-Dec-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1512059

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method SW8021B - Volatile Organics by GC Analysis
Method E300 - Anions Analysis
Method SW6020A - Metals Analysis
Method E300 - Anions Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 12/4/2015. A total of 1 sample was received and analyzed. The sample arrived in good condition and was properly packaged. The samples were collected in Mountain Standard Time.

ANIONS ANALYSIS

For Anions Analysis, the recovery of Nitrate-N for the Matrix Spike (1512042-02 MS) was marginally above the method control limits. This is flagged accordingly in the QC Summary Report. This anion was within method control limits in the associated LCS/MSD. No further corrective action was taken.

METALS ANALYSIS

For Metals Analysis, the recoveries of three analytes for the Matrix Spike and Matrix Spike Duplicate (1512060-01 MS/MSD) were outside of the method control limits. These are flagged accordingly in the QC Summary Report. These analytes were within method control limits in the associated LCS. No further corrective action was taken.

For Metals Analysis, the recovery of Sodium for the Low Level Calibration Verification (LCVL1-151208) was above the method control limits. This is flagged accordingly in the QC Summary Report. The concentration of this analyte is similar to the CCV spike levels. This analyte meets method control limits in the associated bracketing QC. No further corrective action was taken.

DHL Analytical, Inc.

Date: *10-Dec-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1512059

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1512059-01	MW-1		12/03/15 10:45 AM	12/4/2015

Lab Order: 1512059
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512059-01A	MW-1	12/03/15 10:45 AM	Aqueous	SW5030C	Purge and Trap Water GC	12/08/15 08:15 AM	72597
1512059-01B	MW-1	12/03/15 10:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/07/15 08:51 AM	72574
	MW-1	12/03/15 10:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/07/15 08:51 AM	72574
1512059-01C	MW-1	12/03/15 10:45 AM	Aqueous	M2320 B	Alkalinity Preparation	12/09/15 08:34 AM	72624
	MW-1	12/03/15 10:45 AM	Aqueous	E300	Anion Preparation	12/04/15 12:50 PM	72553
	MW-1	12/03/15 10:45 AM	Aqueous	E300	Anion Preparation	12/04/15 12:50 PM	72553
	MW-1	12/03/15 10:45 AM	Aqueous	M2540C	TDS Preparation	12/08/15 01:47 PM	72614

Lab Order: 1512059
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512059-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	72597	1	12/08/15 01:29 PM	GC8_151208B
1512059-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72574	1	12/08/15 01:59 PM	ICP-MS4_151208A
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72574	100	12/08/15 01:12 PM	ICP-MS4_151208A
1512059-01C	MW-1	Aqueous	M2320 B	Alkalinity	72624	1	12/09/15 11:11 AM	TITRATOR_151209B
	MW-1	Aqueous	E300	Anions by IC method - Water	72553	10	12/04/15 02:23 PM	IC2_151204A
	MW-1	Aqueous	E300	Anions by IC method - Water	72553	1	12/04/15 01:05 PM	IC2_151204A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	72614	1	12/09/15 08:00 AM	WC_151208C

DHL Analytical, Inc.

Date: *10-Dec-15*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1512059-01
Project No:	12-0126-01	**Collection Date:**	12/03/15 10:45 AM
Lab Order:	1512059	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	12/08/15 01:29 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	12/08/15 01:29 PM
Toluene	ND	0.00200	0.00600		mg/L	1	12/08/15 01:29 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	12/08/15 01:29 PM
Surr: a,a,a-Trifluorotoluene	96.8	0	87-113		%REC	1	12/08/15 01:29 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **RO**
Calcium	108	10.0	30.0		mg/L	100	12/08/15 01:12 PM
Magnesium	8.79	0.100	0.300		mg/L	1	12/08/15 01:59 PM
Potassium	2.39	0.100	0.300		mg/L	1	12/08/15 01:59 PM
Sodium	207	10.0	30.0		mg/L	100	12/08/15 01:12 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	159	3.00	10.0		mg/L	10	12/04/15 02:23 PM
Nitrate-N	1.17	0.100	0.500		mg/L	1	12/04/15 01:05 PM
Sulfate	63.7	1.00	3.00		mg/L	1	12/04/15 01:05 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	291	10.0	20.0		mg/L @ pH 4.52	1	12/09/15 11:11 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.52	1	12/09/15 11:11 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.52	1	12/09/15 11:11 AM
Alkalinity, Total (As CaCO3)	291	20.0	20.0		mg/L @ pH 4.52	1	12/09/15 11:11 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **BJT**
Total Dissolved Solids (Residue, Filterable)	705	10.0	10.0		mg/L	1	12/09/15 08:00 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

DHL Analytical, Inc. **Date:** *10-Dec-15*

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_151208B

The QC data in batch 72597 applies to the following samples: 1512059-01A

Sample ID **LCS-72597**	Batch ID: **72597**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 10:05:29 AM**	Prep Date: **12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0495	0.00200	0.0464	0	107	81	125			
Toluene	0.0490	0.00600	0.0464	0	106	84	123			
Ethylbenzene	0.0497	0.00600	0.0464	0	107	83	119			
Xylenes, Total	0.148	0.00900	0.139	0	107	81	117			
Surr: a,a,a-Trifluorotoluene	196		200.0		98.0	87	113			

Sample ID **MB-72597**	Batch ID: **72597**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 10:50:37 AM**	Prep Date: **12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	192		200.0		95.8	87	113			

Sample ID **1512048-02AMS**	Batch ID: **72597**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 4:52:39 PM**	Prep Date: **12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0521	0.00200	0.0464	0.00266	107	81	125			
Toluene	0.0505	0.00600	0.0464	0	109	84	123			
Ethylbenzene	0.0518	0.00600	0.0464	0.00251	106	83	119			
Xylenes, Total	0.157	0.00900	0.139	0.00688	108	81	117			
Surr: a,a,a-Trifluorotoluene	188		200.0		94.0	87	113			

Sample ID **1512048-02AMSD**	Batch ID: **72597**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 5:15:11 PM**	Prep Date: **12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0526	0.00200	0.0464	0.00266	108	81	125	0.799	20	
Toluene	0.0501	0.00600	0.0464	0	108	84	123	0.764	20	
Ethylbenzene	0.0525	0.00600	0.0464	0.00251	108	83	119	1.51	20	
Xylenes, Total	0.158	0.00900	0.139	0.00688	108	81	117	0.487	20	
Surr: a,a,a-Trifluorotoluene	187		200.0		93.4	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_151208B

Sample ID **ICV-151208**	Batch ID: **R83009**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 9:20:08 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0951	0.00200	0.0928	0	102	80	120			
Toluene	0.0948	0.00600	0.0928	0	102	80	120			
Ethylbenzene	0.0968	0.00600	0.0928	0	104	80	120			
Xylenes, Total	0.286	0.00900	0.278	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	196		200.0		98.2	87	113			

Sample ID **CCV1-151208**	Batch ID: **R83009**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 3:44:47 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0492	0.00200	0.0464	0	106	80	120			
Toluene	0.0483	0.00600	0.0464	0	104	80	120			
Ethylbenzene	0.0488	0.00600	0.0464	0	105	80	120			
Xylenes, Total	0.146	0.00900	0.139	0	105	80	120			
Surr: a,a,a-Trifluorotoluene	190		200.0		95.2	87	113			

Sample ID **CCV2-151208**	Batch ID: **R83009**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_151208B**	Analysis Date: **12/8/2015 6:00:21 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0486	0.00200	0.0464	0	105	80	120			
Toluene	0.0477	0.00600	0.0464	0	103	80	120			
Ethylbenzene	0.0484	0.00600	0.0464	0	104	80	120			
Xylenes, Total	0.144	0.00900	0.139	0	104	80	120			
Surr: a,a,a-Trifluorotoluene	189		200.0		94.6	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151208A

The QC data in batch 72574 applies to the following samples: 1512059-01B

Sample ID **MB-72574** Batch ID: **72574** TestNo: **SW6020A** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS4_151208A** Analysis Date: **12/8/2015 1:01:00 PM** Prep Date: **12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID **LCS-72574** Batch ID: **72574** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS4_151208A** Analysis Date: **12/8/2015 1:03:00 PM** Prep Date: **12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.55	0.300	5.00	0	91.0	80	120			
Magnesium	4.81	0.300	5.00	0	96.1	80	120			
Potassium	4.85	0.300	5.00	0	97.1	80	120			
Sodium	4.90	0.300	5.00	0	97.9	80	120			

Sample ID **LCSD-72574** Batch ID: **72574** TestNo: **SW6020A** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS4_151208A** Analysis Date: **12/8/2015 1:04:00 PM** Prep Date: **12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.60	0.300	5.00	0	92.1	80	120	1.24	15	
Magnesium	4.86	0.300	5.00	0	97.1	80	120	1.04	15	
Potassium	4.93	0.300	5.00	0	98.5	80	120	1.46	15	
Sodium	4.95	0.300	5.00	0	99.0	80	120	1.04	15	

Sample ID **1512060-01B SD** Batch ID: **72574** TestNo: **SW6020A** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS4_151208A** Analysis Date: **12/8/2015 1:10:00 PM** Prep Date: **12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	98.3	150	0	93.6				4.97	10	
Magnesium	57.2	150	0	54.7				4.42	10	
Sodium	203	150	0	190				6.83	10	

Sample ID **1512060-01B PDS** Batch ID: **72574** TestNo: **SW6020A** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS4_151208A** Analysis Date: **12/8/2015 1:30:00 PM** Prep Date: **12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	557	30.0	500	93.5	92.8	80	120			
Magnesium	558	30.0	500	54.7	101	80	120			
Sodium	694	30.0	500	190	101	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151208A

Sample ID	**1512060-01B MS**	Batch ID:	**72574**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 1:32:00 PM**	Prep Date:	**12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	96.1	0.300	5.00	92.8	65.6	80	120			S
Magnesium	56.4	0.300	5.00	53.2	64.3	80	120			S
Potassium	13.5	0.300	5.00	8.91	92.5	80	120			
Sodium	175	0.300	5.00	176	-13.6	80	120			S

Sample ID	**1512060-01B MSD**	Batch ID:	**72574**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 1:34:00 PM**	Prep Date:	**12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	95.2	0.300	5.00	92.8	48.9	80	120	0.873	15	S
Magnesium	55.8	0.300	5.00	53.2	51.7	80	120	1.12	15	S
Potassium	13.4	0.300	5.00	8.91	89.0	80	120	1.29	15	
Sodium	172	0.300	5.00	176	-73.2	80	120	1.71	15	S

Sample ID	**1512060-01B SD**	Batch ID:	**72574**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 1:49:00 PM**	Prep Date:	**12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	9.13	1.50	0	8.91				2.54	10	

Sample ID	**1512060-01B PDS**	Batch ID:	**72574**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 2:04:00 PM**	Prep Date:	**12/7/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	13.2	0.300	5.00	8.91	86.1	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151208A

Sample ID	**ICV-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 12:05:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.39	0.300	2.50	0	95.7	90	110			
Magnesium	2.63	0.300	2.50	0	105	90	110			
Potassium	2.58	0.300	2.50	0	103	90	110			
Sodium	2.58	0.300	2.50	0	103	90	110			

Sample ID	**LCVL-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 12:13:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.102	0.300	0.100	0	102	70	130			
Magnesium	0.105	0.300	0.100	0	105	70	130			
Potassium	0.109	0.300	0.100	0	109	70	130			
Sodium	0.122	0.300	0.100	0	122	70	130			

Sample ID	**CCV1-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 12:52:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.95	0.300	5.00	0	98.9	90	110			
Magnesium	5.14	0.300	5.00	0	103	90	110			
Potassium	5.23	0.300	5.00	0	105	90	110			
Sodium	5.24	0.300	5.00	0	105	90	110			

Sample ID	**LCVL1-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 12:56:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.106	0.300	0.100	0	106	70	130			
Magnesium	0.105	0.300	0.100	0	105	70	130			
Potassium	0.106	0.300	0.100	0	106	70	130			
Sodium	0.133	0.300	0.100	0	133	70	130			S

Sample ID	**CCV2-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 1:36:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.93	0.300	5.00	0	98.7	90	110			
Magnesium	5.22	0.300	5.00	0	104	90	110			
Potassium	5.26	0.300	5.00	0	105	90	110			
Sodium	5.31	0.300	5.00	0	106	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151208A

Sample ID	**LCVL2-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 1:43:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.101	0.300	0.100	0	101	70	130			
Magnesium	0.106	0.300	0.100	0	106	70	130			
Potassium	0.105	0.300	0.100	0	105	70	130			
Sodium	0.129	0.300	0.100	0	129	70	130			

Sample ID	**CCV3-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 2:06:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	5.27	0.300	5.00	0	105	90	110			
Potassium	5.30	0.300	5.00	0	106	90	110			

Sample ID	**LCVL3-151208**	Batch ID:	**R82993**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_151208A**	Analysis Date:	**12/8/2015 2:26:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	0.106	0.300	0.100	0	106	70	130			
Potassium	0.108	0.300	0.100	0	108	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151204A

The QC data in batch 72553 applies to the following samples: 1512059-01C

Sample ID	**LCS-72553**	Batch ID:	**72553**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 9:33:53 AM**	Prep Date:	**12/4/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.81	1.00	10.00	0	98.1	90	110			
Nitrate-N	5.45	0.500	5.000	0	109	90	110			
Sulfate	29.8	3.00	30.00	0	99.4	90	110			

Sample ID	**LCSD-72553**	Batch ID:	**72553**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 9:48:29 AM**	Prep Date:	**12/4/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.82	1.00	10.00	0	98.2	90	110	0.144	20	
Nitrate-N	5.43	0.500	5.000	0	109	90	110	0.275	20	
Sulfate	29.9	3.00	30.00	0	99.5	90	110	0.186	20	

Sample ID	**MB-72553**	Batch ID:	**72553**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 10:03:05 AM**	Prep Date:	**12/4/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	**1512042-02AMS**	Batch ID:	**72553**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 11:10:15 AM**	Prep Date:	**12/4/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2160	100	2000	95.57	103	90	110			
Nitrate-N	500	50.0	451.6	0	111	90	110			S
Sulfate	3610	300	2000	1485	106	90	110			

Sample ID	**1512042-02AMSD**	Batch ID:	**72553**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 11:24:51 AM**	Prep Date:	**12/4/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2160	100	2000	95.57	103	90	110	0.001	20	
Nitrate-N	494	50.0	451.6	0	109	90	110	1.27	20	
Sulfate	3620	300	2000	1485	107	90	110	0.352	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151204A

Sample ID	**ICV-151204**	Batch ID:	**R82939**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 9:01:02 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.1	1.00	25.00	0	96.4	90	110			
Nitrate-N	13.6	0.500	12.50	0	109	90	110			
Sulfate	75.4	3.00	75.00	0	101	90	110			

Sample ID	**CCV1-151204**	Batch ID:	**R82939**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 12:03:35 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.80	1.00	10.00	0	98.0	90	110			
Nitrate-N	5.40	0.500	5.000	0	108	90	110			
Sulfate	29.7	3.00	30.00	0	98.9	90	110			

Sample ID	**CCV2-151204**	Batch ID:	**R82939**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC2_151204A**	Analysis Date:	**12/4/2015 3:37:46 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.74	1.00	10.00	0	97.4	90	110			
Nitrate-N	5.38	0.500	5.000	0	108	90	110			
Sulfate	29.8	3.00	30.00	0	99.3	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151209B

The QC data in batch 72624 applies to the following samples: 1512059-01C

Sample ID	LCS-72624	Batch ID:	72624	TestNo:	M2320 B	Units:	mg/L @ pH 4.51
SampType:	LCS	Run ID:	TITRATOR_151209B	Analysis Date:	12/9/2015 11:00:00 AM	Prep Date:	12/9/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	52.9	20.0	50.00	0	106	74	129			

Sample ID	MB-72624	Batch ID:	72624	TestNo:	M2320 B	Units:	mg/L @ pH 4.5
SampType:	MBLK	Run ID:	TITRATOR_151209B	Analysis Date:	12/9/2015 11:02:00 AM	Prep Date:	12/9/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	1512059-01C DUP	Batch ID:	72624	TestNo:	M2320 B	Units:	mg/L @ pH 4.52
SampType:	DUP	Run ID:	TITRATOR_151209B	Analysis Date:	12/9/2015 11:18:00 AM	Prep Date:	12/9/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	289	20.0	0	291.2				0.643	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	289	20.0	0	291.2				0.643	20	

Sample ID	1512104-10B DUP	Batch ID:	72624	TestNo:	M2320 B	Units:	mg/L @ pH 4.53
SampType:	DUP	Run ID:	TITRATOR_151209B	Analysis Date:	12/9/2015 2:46:00 PM	Prep Date:	12/9/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	263	20.0	0	263.2				0.228	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	263	20.0	0	263.2				0.228	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151209B

Sample ID **ICV-151209**	Batch ID: **R83024**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **ICV**	Run ID: **TITRATOR_151209B**	Analysis Date: **12/9/2015 10:54:00 AM**	Prep Date: **12/9/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	12.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	85.4	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	98.1	20.0	100.0	0	98.1	98	102			

Sample ID **CCV1-151209**	Batch ID: **R83024**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **CCV**	Run ID: **TITRATOR_151209B**	Analysis Date: **12/9/2015 12:33:00 PM**	Prep Date: **12/9/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	21.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)	79.0	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Sample ID **CCV2-151209**	Batch ID: **R83024**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **CCV**	Run ID: **TITRATOR_151209B**	Analysis Date: **12/9/2015 2:26:00 PM**	Prep Date: **12/9/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	30.8	20.0	0							
Alkalinity, Carbonate (As CaCO3)	68.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	99.4	20.0	100.0	0	99.4	90	110			

Sample ID **CCV3-151209**	Batch ID: **R83024**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.5**
SampType: **CCV**	Run ID: **TITRATOR_151209B**	Analysis Date: **12/9/2015 2:55:00 PM**	Prep Date: **12/9/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	10.7	20.0	0							
Alkalinity, Carbonate (As CaCO3)	90.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1512059
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_151208C

The QC data in batch 72614 applies to the following samples: 1512059-01C

Sample ID	**MB-72614**	Batch ID:	**72614**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_151208C**	Analysis Date:	**12/9/2015 8:00:00 AM**	Prep Date:	**12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-72614**	Batch ID:	**72614**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_151208C**	Analysis Date:	**12/9/2015 8:00:00 AM**	Prep Date:	**12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	745	10.0	745.6	0	99.9	90	113			

Sample ID	**1512050-01C-DUP**	Batch ID:	**72614**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_151208C**	Analysis Date:	**12/9/2015 8:00:00 AM**	Prep Date:	**12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	257	10.0	0	256.0				0.390	5	

Sample ID	**1512087-04G-DUP**	Batch ID:	**72614**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_151208C**	Analysis Date:	**12/9/2015 8:00:00 AM**	Prep Date:	**12/8/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3970	50.0	0	4000				0.753	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

August 27, 2015

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1508206

RE: Legacy Chamberlain

Dear Mark Larson:

DHL Analytical, Inc. received 1 sample(s) on 8/20/2015 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-15-14

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DHL ANALYTICAL
2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: www.dhlanalytical.com
E-Mail: login@dhlanalytical.com

№ 62038

CHAIN-OF-CUSTODY

CLIENT: Larson and Associates
ADDRESS: 507 N Marienfeld St. 205 Midland, TX 79701
PHONE: (432) 687-0901 FAX/E-MAIL:
DATA REPORTED TO: Mark Larson
ADDITIONAL REPORT COPIES TO:

DATE: 8/18/15 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1508206
PROJECT LOCATION OR NAME: Legacy Chamberlin
CLENT PROJECT #: 12-0126-81 / COLLECTOR: Sean Shirley

Authorize 5% surcharge for TRRP Report? ☐ Yes ☒ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR O=OTHER
L=LIQUID SO=SOLID

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8081 PEST ☐ 608 PEST/PCB ☐ 8270 PCB ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PEST ☐	8321 HERB ☐ 8330 EXPL ☐ PERCHLORATE ☐	METALS 6020 ☐ METALS 200.8 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☒	CHLORIDE ☒ ANIONS ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCI ☐ TOX ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	TDS ☒ TSS ☐ % MOISTURE ☐ FLASHPOINT ☐	NO3, SO4 Cl, Na, F, K, Mg ☐ CYANIDE ☐	FIELD NOTES
MW-1	01	8/18/15	1030	W	Poly	1		X																		X	
" "					↓	1				X													XX		XX		
" "					VOA	3	X				X																	
TOTAL																											

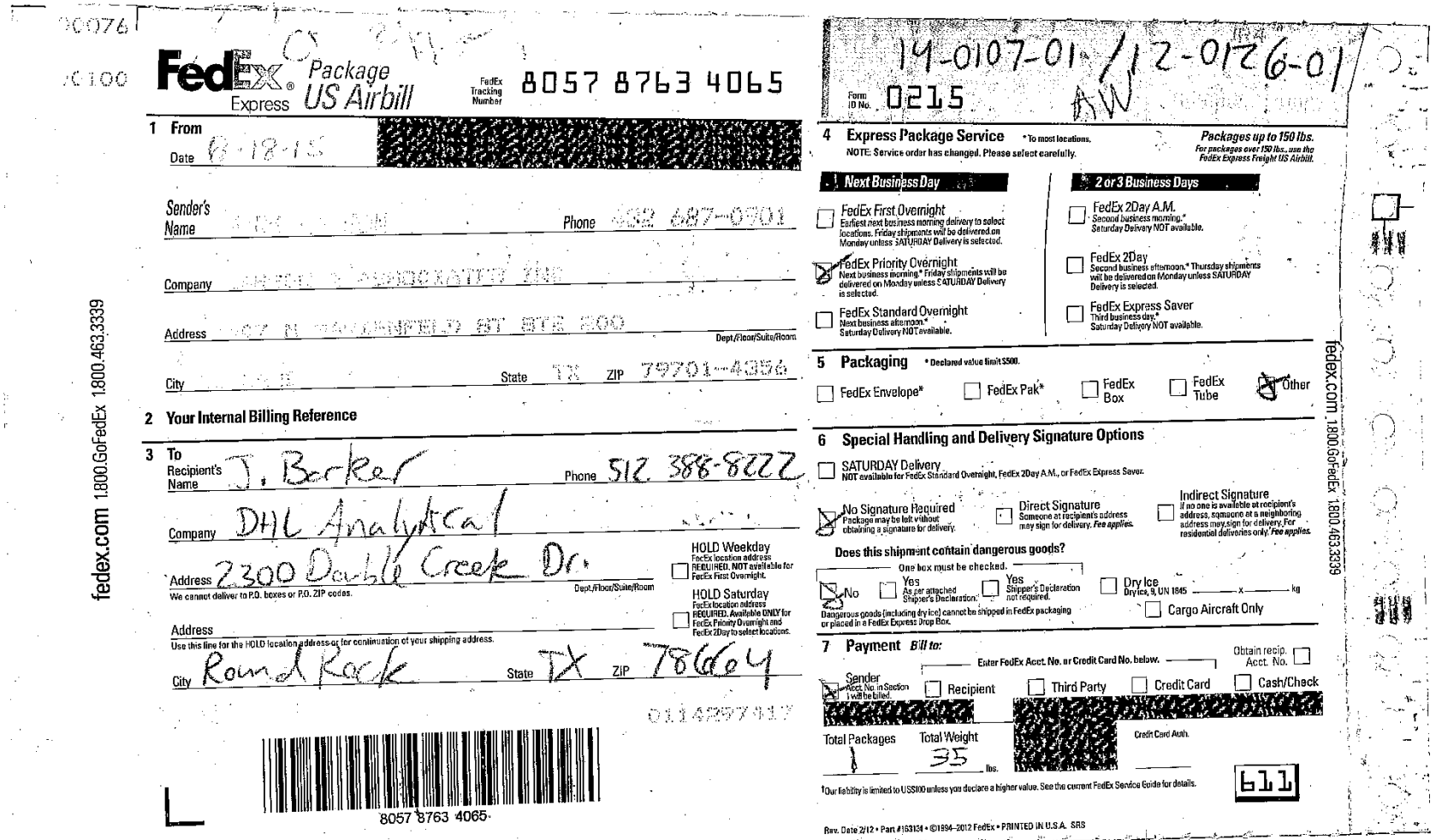
RELINQUISHED BY: (Signature) Sean Shirley DATE/TIME 8/18/15 5:00PM RECEIVED BY: (Signature) Fedex
RELINQUISHED BY: (Signature) Fedex DATE/TIME 8/20/15 915 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 5-2 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☒ NOT USED
☒ CARRIER BILL #: Fed ex
☐ APC DELIVERY
☐ HAND DELIVERED



FedEx Express Package US Airbill

FedEx Tracking Number 8057 8763 4065

14-0107-01 / 12-0126-01

Form ID No. 0215 AW

1 From

Date 8-12-15

Sender's Name [redacted] Phone 682 687-0701

Company [redacted]

Address [redacted] Dept./Floor/Suite/Room

City [redacted] State TX ZIP 79701-4356

2 Your Internal Billing Reference

3 To

Recipient's Name J. Barker Phone 512 388-8222

Company DHL Analytical

Address 2300 Double Creek Dr. Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City Round Rock State TX ZIP 78664

HOLD Weekday FedEx location address REQUIRED. NOT available for FedEx First Overnight.

HOLD Saturday FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

0114297017

8057 8763 4065

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. For packages over 150 lbs., use the FedEx Express Freight US Airbill.

1 Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

- [x] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

- [ ] Cargo Aircraft Only

7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below. Obtain recip. Acct. No. [ ]

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 Total Weight 35 lbs. Credit Card Auth.

611

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Larson & Associates** Date Received: **8/20/2015**

Work Order Number **1508206** Received by **MB**

Checklist completed by: _____ 8/20/2015 Reviewed by BL 8/20/2015
Signature Date Initials Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**5.2** °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? ND		Checked by _____
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments:

Corrective Action:

DHL Analytical, Inc. **Date:** *27-Aug-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1508206

CASE NARRATIVE

The samples were analyzed using the methods outlined in the following references:

Method SW6020A - Metals Analysis
Method SW8021B - Volatile Organics by GC Analysis
Method E300 - Anions Analysis
Method M2540C - Total Dissolved Solids Analysis
Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 8/20/2015. A total of 1 sample was received and analyzed. Due to a one day delay in the Federal Express delivery, the sample arrived at DHL Analytical just prior to the expiration of the holdtime for Nitrate-N. The sample was analyzed as quickly as feasible, approximately 5½ hours outside of the method specified 48 hour holdtime. The results were "C" flagged in the Analytical Data Report. The remaining parameters arrived within holdtime and the sample was properly packaged. The sample was collected in Mountain Time Zone.

METALS ANALYSIS

For Metals Analysis, the recoveries of up to two analytes for the Matrix Spike and Matrix Spike Duplicate (1508207-05 MS/MSD) were below the method control limits. These are flagged accordingly in the QC summary Report. These analytes were within method control limit in the associated LCS. No further corrective action was taken.

ANIONS ANALYSIS

For Anions Analysis, the recoveries of up to two anions for the Matrix Spike and Matrix Spike Duplicate (1508207-05 MS/MSD) were outside of the method control limits. These are flagged accordingly in the QC summary Report. These analytes were within method control limit in the associated LCS. No further corrective action was taken.

DHL Analytical, Inc.

Date: *27-Aug-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1508206

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1508206-01	MW-1		08/18/15 10:30 AM	8/20/2015

Lab Order: 1508206
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1508206-01A	MW-1	08/18/15 10:30 AM	Aqueous	SW5030C	Purge and Trap Water GC	08/20/15 08:36 AM	71054
1508206-01B	MW-1	08/18/15 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/20/15 10:44 AM	71071
	MW-1	08/18/15 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/20/15 10:44 AM	71071
1508206-01C	MW-1	08/18/15 10:30 AM	Aqueous	M2320 B	Alkalinity Preparation	08/24/15 08:44 AM	71107
	MW-1	08/18/15 10:30 AM	Aqueous	E300	Anion Preparation	08/20/15 02:04 PM	71075
	MW-1	08/18/15 10:30 AM	Aqueous	E300	Anion Preparation	08/20/15 02:04 PM	71075
	MW-1	08/18/15 10:30 AM	Aqueous	M2540C	TDS Preparation	08/21/15 08:40 AM	71082

Lab Order: 1508206
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1508206-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	71054	1	08/20/15 04:12 PM	GC8_150820A
1508206-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	71071	1	08/25/15 01:53 PM	ICP-MS4_150825B
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	71071	50	08/25/15 01:26 PM	ICP-MS4_150825B
1508206-01C	MW-1	Aqueous	M2320 B	Alkalinity	71107	1	08/24/15 11:11 AM	TITRATOR_150824B
	MW-1	Aqueous	E300	Anions by IC method - Water	71075	10	08/20/15 07:59 PM	IC2_150820A
	MW-1	Aqueous	E300	Anions by IC method - Water	71075	1	08/20/15 04:52 PM	IC2_150820A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	71082	1	08/24/15 08:35 AM	WC_150821B

DHL Analytical, Inc.

Date: *27-Aug-15*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1508206-01
Project No:	12-0126-81	**Collection Date:**	08/18/15 10:30 AM
Lab Order:	1508206	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	08/20/15 04:12 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	08/20/15 04:12 PM
Toluene	ND	0.00200	0.00600		mg/L	1	08/20/15 04:12 PM
Xylenes, Total	ND	0.00300	0.00900		mg/L	1	08/20/15 04:12 PM
Surr: a,a,a-Trifluorotoluene	103	0	87-113		%REC	1	08/20/15 04:12 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **RO**
Calcium	41.0	5.00	15.0		mg/L	50	08/25/15 01:26 PM
Magnesium	9.43	5.00	15.0	J	mg/L	50	08/25/15 01:26 PM
Potassium	2.21	0.100	0.300		mg/L	1	08/25/15 01:53 PM
Sodium	183	5.00	15.0		mg/L	50	08/25/15 01:26 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	134	3.00	10.0		mg/L	10	08/20/15 07:59 PM
Nitrate-N	1.52	0.100	0.500	C	mg/L	1	08/20/15 04:52 PM
Sulfate	76.0	1.00	3.00		mg/L	1	08/20/15 04:52 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	302	10.0	20.0		mg/L @ pH 4.52	1	08/24/15 11:11 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.52	1	08/24/15 11:11 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.52	1	08/24/15 11:11 AM
Alkalinity, Total (As CaCO3)	302	20.0	20.0		mg/L @ pH 4.52	1	08/24/15 11:11 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	623	10.0	10.0		mg/L	1	08/24/15 08:35 AM

Qualifiers:				
	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_150820A

The QC data in batch 71054 applies to the following samples: 1508206-01A

Sample ID **LCS-71054**	Batch ID: **71054**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 10:09:59 AM**	Prep Date: **8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0477	0.00200	0.0464	0	103	81	125			
Toluene	0.0480	0.00600	0.0464	0	103	84	123			
Ethylbenzene	0.0486	0.00600	0.0464	0	105	83	119			
Xylenes, Total	0.148	0.00900	0.139	0	106	81	117			
Surr: a,a,a-Trifluorotoluene	206		200.0		103	87	113			

Sample ID **MB-71054**	Batch ID: **71054**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 10:32:38 AM**	Prep Date: **8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	206		200.0		103	87	113			

Sample ID **1508181-01AMS**	Batch ID: **71054**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 2:41:58 PM**	Prep Date: **8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0467	0.00200	0.0464	0	101	81	125			
Toluene	0.0467	0.00600	0.0464	0	101	84	123			
Ethylbenzene	0.0469	0.00600	0.0464	0	101	83	119			
Xylenes, Total	0.143	0.00900	0.139	0	103	81	117			
Surr: a,a,a-Trifluorotoluene	205		200.0		102	87	113			

Sample ID **1508181-01AMSD**	Batch ID: **71054**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 3:04:36 PM**	Prep Date: **8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0470	0.00200	0.0464	0	101	81	125	0.467	20	
Toluene	0.0471	0.00600	0.0464	0	102	84	123	0.803	20	
Ethylbenzene	0.0474	0.00600	0.0464	0	102	83	119	1.01	20	
Xylenes, Total	0.144	0.00900	0.139	0	103	81	117	0.390	20	
Surr: a,a,a-Trifluorotoluene	208		200.0		104	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_150820A

Sample ID **ICV-150820**	Batch ID: **R81268**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 9:47:16 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0896	0.00200	0.0928	0	96.5	80	120			
Toluene	0.0909	0.00600	0.0928	0	98.0	80	120			
Ethylbenzene	0.0917	0.00600	0.0928	0	98.8	80	120			
Xylenes, Total	0.279	0.00900	0.278	0	100	80	120			
Surr: a,a,a-Trifluorotoluene	203		200.0		102	87	113			

Sample ID **CCV1-150820**	Batch ID: **R81268**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 3:49:47 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0469	0.00200	0.0464	0	101	80	120			
Toluene	0.0470	0.00600	0.0464	0	101	80	120			
Ethylbenzene	0.0473	0.00600	0.0464	0	102	80	120			
Xylenes, Total	0.143	0.00900	0.139	0	103	80	120			
Surr: a,a,a-Trifluorotoluene	205		200.0		102	87	113			

Sample ID **CCV2-150820**	Batch ID: **R81268**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_150820A**	Analysis Date: **8/20/2015 6:06:01 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0464	0.00200	0.0464	0	100	80	120			
Toluene	0.0465	0.00600	0.0464	0	100	80	120			
Ethylbenzene	0.0464	0.00600	0.0464	0	100	80	120			
Xylenes, Total	0.142	0.00900	0.139	0	102	80	120			
Surr: a,a,a-Trifluorotoluene	205		200.0		102	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150825B

The QC data in batch 71071 applies to the following samples: 1508206-01B

Sample ID	**MB-71071**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:22:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID	**LCS-71071**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:26:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.48	0.300	5.00	0	89.7	80	120			
Magnesium	4.82	0.300	5.00	0	96.5	80	120			
Potassium	4.64	0.300	5.00	0	92.9	80	120			
Sodium	4.86	0.300	5.00	0	97.3	80	120			

Sample ID	**LCSD-71071**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:28:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.60	0.300	5.00	0	92.0	80	120	2.60	15	
Magnesium	4.96	0.300	5.00	0	99.1	80	120	2.68	15	
Potassium	4.77	0.300	5.00	0	95.4	80	120	2.64	15	
Sodium	4.98	0.300	5.00	0	99.7	80	120	2.43	15	

Sample ID	**1508160-01A SD**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:34:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	11.3	1.50	0	10.9				3.13	10	

Sample ID	**1508160-01A PDS**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:53:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	15.2	0.300	5.00	10.9	85.7	80	120			

Sample ID	**1508160-01A MS**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:55:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	389	0.300	5.00	384	116	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150825B

Sample ID	**1508160-01A MS**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:55:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	137	0.300	5.00	133	84.5	80	120			
Potassium	15.6	0.300	5.00	10.9	93.1	80	120			
Sodium	133	0.300	5.00	130	59.5	80	120			S

Sample ID	**1508160-01A MSD**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:57:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	387	0.300	5.00	384	61.8	80	120	0.702	15	S
Magnesium	138	0.300	5.00	133	102	80	120	0.624	15	
Potassium	15.7	0.300	5.00	10.9	96.2	80	120	0.973	15	
Sodium	133	0.300	5.00	130	76.6	80	120	0.645	15	S

Sample ID	**1508160-01A SD**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**SD**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:49:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	388	150	0	388				0.110	10	
Magnesium	144	150	0	142				1.35	10	
Sodium	133	150	0	136				1.95	10	

Sample ID	**1508160-01A PDS**	Batch ID:	**71071**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**PDS**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:51:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	843	30.0	500	388	91.0	80	120			
Magnesium	662	30.0	500	142	104	80	120			
Sodium	651	30.0	500	136	103	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150825B

Sample ID	**ICV-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 10:39:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.34	0.300	2.50	0	93.6	90	110			
Magnesium	2.55	0.300	2.50	0	102	90	110			
Potassium	2.47	0.300	2.50	0	98.6	90	110			
Sodium	2.51	0.300	2.50	0	101	90	110			

Sample ID	**LCVL-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 10:45:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0937	0.300	0.100	0	93.7	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.0979	0.300	0.100	0	97.9	70	130			
Sodium	0.0891	0.300	0.100	0	89.1	70	130			

Sample ID	**CCV2-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 11:59:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.85	0.300	5.00	0	97.1	90	110			
Magnesium	5.24	0.300	5.00	0	105	90	110			
Potassium	4.93	0.300	5.00	0	98.7	90	110			
Sodium	5.22	0.300	5.00	0	104	90	110			

Sample ID	**LCVL2-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 12:12:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0977	0.300	0.100	0	97.7	70	130			
Magnesium	0.103	0.300	0.100	0	103	70	130			
Potassium	0.0918	0.300	0.100	0	91.8	70	130			
Sodium	0.0846	0.300	0.100	0	84.6	70	130			

Sample ID	**CCV3-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:10:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.81	0.300	5.00	0	96.1	90	110			
Magnesium	5.18	0.300	5.00	0	104	90	110			
Potassium	4.93	0.300	5.00	0	98.6	90	110			
Sodium	5.11	0.300	5.00	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150825B

Sample ID	**LCVL3-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:14:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.102	0.300	0.100	0	102	70	130			
Magnesium	0.108	0.300	0.100	0	108	70	130			
Potassium	0.0906	0.300	0.100	0	90.6	70	130			
Sodium	0.0818	0.300	0.100	0	81.8	70	130			

Sample ID	**CCV4-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:38:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.81	0.300	5.00	0	96.2	90	110			
Magnesium	5.20	0.300	5.00	0	104	90	110			
Potassium	4.91	0.300	5.00	0	98.1	90	110			
Sodium	5.16	0.300	5.00	0	103	90	110			

Sample ID	**LCVL4-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:43:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0999	0.300	0.100	0	99.9	70	130			
Magnesium	0.108	0.300	0.100	0	108	70	130			
Potassium	0.0880	0.300	0.100	0	88.0	70	130			
Sodium	0.0980	0.300	0.100	0	98.0	70	130			

Sample ID	**CCV5-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 1:59:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.77	0.300	5.00	0	95.5	90	110			
Magnesium	5.19	0.300	5.00	0	104	90	110			
Potassium	4.87	0.300	5.00	0	97.3	90	110			
Sodium	5.11	0.300	5.00	0	102	90	110			

Sample ID	**LCVL5-150825**	Batch ID:	**R81358**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150825B**	Analysis Date:	**8/25/2015 2:03:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0943	0.300	0.100	0	94.3	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.0813	0.300	0.100	0	81.3	70	130			
Sodium	0.0778	0.300	0.100	0	77.8	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_150820A

The QC data in batch 71075 applies to the following samples: 1508206-01C

Sample ID	**LCS-71075**	Batch ID:	**71075**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 3:10:06 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110			
Nitrate-N	4.84	0.500	5.000	0	96.9	90	110			
Sulfate	29.9	3.00	30.00	0	99.7	90	110			

Sample ID	**LCSD-71075**	Batch ID:	**71075**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**LCSD**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 3:24:40 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110	0.425	20	
Nitrate-N	4.82	0.500	5.000	0	96.4	90	110	0.523	20	
Sulfate	29.5	3.00	30.00	0	98.4	90	110	1.34	20	

Sample ID	**MB-71075**	Batch ID:	**71075**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 3:39:15 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	**1508207-05DMS**	Batch ID:	**71075**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 9:27:00 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	293	10.0	200.0	95.63	98.9	90	110			
Nitrate-N	46.8	5.00	45.16	6.287	89.7	90	110			
Sulfate	657	30.0	200.0	429.0	114	90	110			S

Sample ID	**1508207-05DMSD**	Batch ID:	**71075**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 9:41:34 PM**	Prep Date:	**8/20/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	292	10.0	200.0	95.63	98.2	90	110	0.479	20	
Nitrate-N	46.4	5.00	45.16	6.287	88.7	90	110	0.983	20	S
Sulfate	658	30.0	200.0	429.0	115	90	110	0.230	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_150820A

Sample ID	**ICV-150820**	Batch ID:	**R81278**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 2:39:42 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.6	1.00	25.00	0	102	90	110			
Nitrate-N	12.6	0.500	12.50	0	101	90	110			
Sulfate	76.8	3.00	75.00	0	102	90	110			

Sample ID	**CCV1-150820**	Batch ID:	**R81278**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 6:32:06 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Nitrate-N	4.89	0.500	5.000	0	97.8	90	110			
Sulfate	31.3	3.00	30.00	0	104	90	110			

Sample ID	**CCV2-150820**	Batch ID:	**R81278**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**IC2_150820A**	Analysis Date:	**8/20/2015 9:56:09 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Nitrate-N	4.88	0.500	5.000	0	97.7	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_150824B

The QC data in batch 71107 applies to the following samples: 1508206-01C

Sample ID	**MB-71107**	Batch ID:	**71107**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.52**
SampType:	**MBLK**	Run ID:	**TITRATOR_150824B**	Analysis Date:	**8/24/2015 10:08:00 AM**	Prep Date:	**8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID	**LCS-71107**	Batch ID:	**71107**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.5**
SampType:	**LCS**	Run ID:	**TITRATOR_150824B**	Analysis Date:	**8/24/2015 10:12:00 AM**	Prep Date:	**8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	54.1	20.0	50.00	0	108	74	129			

Sample ID	**1508207-04D DUP**	Batch ID:	**71107**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.54**
SampType:	**DUP**	Run ID:	**TITRATOR_150824B**	Analysis Date:	**8/24/2015 12:24:00 PM**	Prep Date:	**8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	392	20.0	0	393.0				0.255	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	392	20.0	0	393.0				0.255	20	

Sample ID	**1508223-06D DUP**	Batch ID:	**71107**	TestNo:	**M2320 B**	Units:	**mg/L @ pH 4.53**
SampType:	**DUP**	Run ID:	**TITRATOR_150824B**	Analysis Date:	**8/24/2015 2:37:00 PM**	Prep Date:	**8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	207	20.0	0	208.3				0.529	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	207	20.0	0	208.3				0.529	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_150824B

Sample ID **ICV-150824**	Batch ID: **R81332**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **ICV**	Run ID: **TITRATOR_150824B**	Analysis Date: **8/24/2015 10:06:00 AM**	Prep Date: **8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	7.92	20.0	0							
Alkalinity, Carbonate (As CaCO3)	92.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	98	102			

Sample ID **CCV1-150824**	Batch ID: **R81332**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.53**
SampType: **CCV**	Run ID: **TITRATOR_150824B**	Analysis Date: **8/24/2015 12:31:00 PM**	Prep Date: **8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	22.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	77.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	99.9	20.0	100.0	0	99.9	90	110			

Sample ID **CCV2-150824**	Batch ID: **R81332**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **CCV**	Run ID: **TITRATOR_150824B**	Analysis Date: **8/24/2015 3:02:00 PM**	Prep Date: **8/24/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	7.76	20.0	0							
Alkalinity, Carbonate (As CaCO3)	92.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1508206
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_150821B

The QC data in batch 71082 applies to the following samples: 1508206-01C

Sample ID	**MB-71082**	Batch ID:	**71082**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_150821B**	Analysis Date:	**8/24/2015 8:35:00 AM**	Prep Date:	**8/21/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-71082**	Batch ID:	**71082**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_150821B**	Analysis Date:	**8/24/2015 8:35:00 AM**	Prep Date:	**8/21/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	751	10.0	745.6	0	101	90	113			

Sample ID	**1508188-05E-DUP**	Batch ID:	**71082**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_150821B**	Analysis Date:	**8/24/2015 8:35:00 AM**	Prep Date:	**8/21/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	535	10.0	0	517.0				3.42	5	

Sample ID	**1508188-06E-DUP**	Batch ID:	**71082**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_150821B**	Analysis Date:	**8/24/2015 8:35:00 AM**	Prep Date:	**8/21/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	502	10.0	0	493.0				1.81	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

February 05, 2015

Coty Woolf
Larson & Associates
507 N. Marienfeld #200
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1501282

RE: Legacy Chamberlain

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 1/29/2015 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-13

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DHL ANALYTICAL

2300 Double Creek Dr. ■ Round Rock, TX 78664
Phone (512) 388-8222 ■ FAX (512) 388-8229
Web: *www.dhlanalytical.com*
E-Mail: *login@dhlanalytical.com*

№ 66477

CHAIN-OF-CUSTODY

CLIENT: Larson and Associates
ADDRESS: 507 N. Marienfeld Ste. 205 Midland, TX 79701
PHONE: (432) 687-0901 FAX/E-MAIL:
DATA REPORTED TO: Mark Larson
ADDITIONAL REPORT COPIES TO: Cory Wolf

DATE: 1/28/2015 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1501282
PROJECT LOCATION OR NAME: [redacted] Chamberlain
CLENT PROJECT #: 12-01 [redacted] COLLECTOR: Sarah Shasby

Authorize 5% surcharge for TRRP Report? ☐ Yes ☒ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR O=OTHER
L=LIQUID SO=SOLID

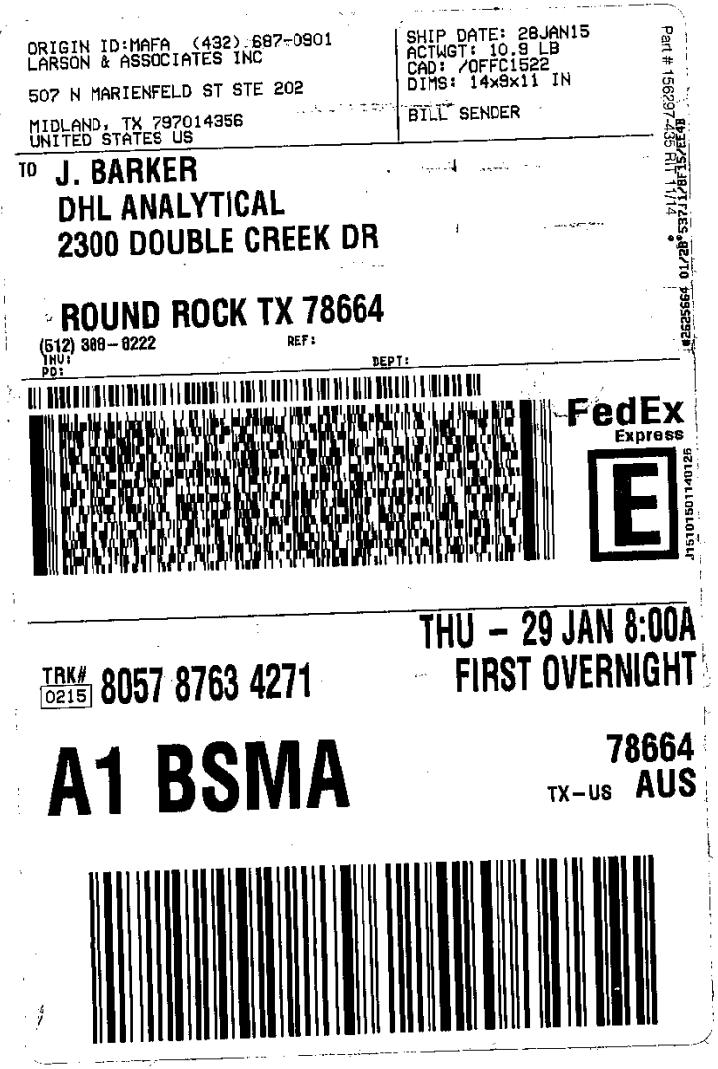
Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐ [METHOD 8021]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO [METHOD 8015] ☐ DRO [METHOD 8105] ☐	VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐	8081 PEST ☐ 608 PEST/PCB ☐ 8270 PEST ☐	8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐	8321 HERB ☐ 8330 EXPL ☐ PERCHLORATE ☐	METALS 6020 ☐ METALS 2008 ☐ DISS. METALS ☐	RCRA ☐ TX11 ☐ _____ ☐	PH ☐ HEX CHROM ☐ ALKALINITY ☒	CHLORIDE ☒ ANIONS ☐	TCLP SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	NO3 SO4 Cat, Na, K, Mg, T	FIELD NOTES
MW-1	01	1/28/15	12:00	W	Poly	1		X																			X	
"					Poly	1				X																		
"					VOA	3	X					X										X	X			X	X	
TOTAL																												

RELINQUISHED BY: (Signature) DATE/TIME 1/28/2015 5:00PM RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME 1/29/15 833 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return 3

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: 0.6 THERM #: 57
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☒ NOT USED
☒ CARRIER BILL #: Fedex
☐ APC DELIVERY
☐ HAND DELIVERED


ORIGIN ID:MAFA (432) 687-0901
LARSON & ASSOCIATES INC
507 N MARIENFELD ST STE 202
MIDLAND, TX 797014356
UNITED STATES US
SHIP DATE: 28JAN15
ACTWGT: 10.9 LB
CAD: /OFFC1522
DIMS: 14x8x11 IN
BILL SENDER
TO J. BARKER
DHL ANALYTICAL
2300 DOUBLE CREEK DR
ROUND ROCK TX 78664
(512) 388-8222
REF:
INV:
PO:
DEPT:
FedEx
Express
THU - 29 JAN 8:00A
FIRST OVERNIGHT
TRK# 0215 8057 8763 4271
A1 BSMA
78664
TX-US AUS
Part # 156297-435 RIT 11/14

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Larson & Associates** Date Received: **1/29/2015**

Work Order Number **1501282** Received by **JB**

Checklist completed by: Signature 1/29/2015 Date Reviewed by SS Initials 1/29/2015 Date

Carrier name FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**0.6** °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 8086
	Adjusted? NO		Checked by S
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted?		Checked by

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

DHL Analytical, Inc. **Date:** *05-Feb-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1501282

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method SW8021B - Volatile Organics by GC Analysis
Method SW6020A - Metals Analysis
Method E300 - Anions Analysis
Method M2320 B - Alkalinity Analysis
Method M2540C - TDS Analysis

LOG IN

The sample was received and log-in performed on 1/29/15. A total of 1 sample was received. The Time of Collection was Mountain Standard Time. The sample arrived in good condition and was properly packaged.

METALS ANALYSIS

For Metals analysis performed on 2/1/15 the matrix spike and matrix spike duplicate recoveries were below control limits for three analytes. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 2/2/15 LCVL8-150202 was above control limits for Sodium. This is flagged accordingly. The associated CCV8-150202 was within control limits for this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 1/29/15 the matrix spike recovery was slightly below control limits for Nitrate-N. This is flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

DHL Analytical, Inc.

Date: *05-Feb-15*

CLIENT: Larson & Associates
Project: Legacy Chamberlain
Lab Order: 1501282

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1501282-01	MW-1		01/28/15 12:00 PM	1/29/2015

Lab Order: 1501282
Client: Larson & Associates
Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1501282-01A	MW-1	01/28/15 12:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	01/29/15 10:08 AM	67975
1501282-01B	MW-1	01/28/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/30/15 08:42 AM	67999
	MW-1	01/28/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/30/15 08:42 AM	67999
1501282-01C	MW-1	01/28/15 12:00 PM	Aqueous	M2320 B	Alkalinity Preparation	02/02/15 09:34 AM	68041
	MW-1	01/28/15 12:00 PM	Aqueous	E300	Anion Preparation	01/29/15 12:45 PM	67992
	MW-1	01/28/15 12:00 PM	Aqueous	E300	Anion Preparation	01/29/15 12:45 PM	67992
	MW-1	01/28/15 12:00 PM	Aqueous	M2540C	TDS Preparation	01/29/15 09:44 AM	67984

Lab Order: 1501282
Client: Larson & Associates
Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1501282-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	67975	1	01/29/15 12:51 PM	GC8_150129A
1501282-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	67999	1	02/02/15 05:05 PM	ICP-MS4_150202E
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	67999	50	02/01/15 05:50 PM	ICP-MS4_150201C
1501282-01C	MW-1	Aqueous	M2320 B	Alkalinity	68041	1	02/02/15 10:37 AM	TITRATOR_150202B
	MW-1	Aqueous	E300	Anions by IC method - Water	67992	10	01/29/15 04:33 PM	IC_150129A
	MW-1	Aqueous	E300	Anions by IC method - Water	67992	1	01/29/15 02:40 PM	IC_150129A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	67984	1	01/30/15 08:30 AM	WC_150129A

DHL Analytical, Inc.

Date: *05-Feb-15*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Legacy Chamberlain	**Lab ID:**	1501282-01
Project No:	12-0126-01	**Collection Date:**	01/28/15 12:00 PM
Lab Order:	1501282	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANICS BY GC		**SW8021B**					Analyst: **LM**
Benzene	ND	0.000800	0.00200		mg/L	1	01/29/15 12:51 PM
Ethylbenzene	ND	0.00200	0.00600		mg/L	1	01/29/15 12:51 PM
Toluene	ND	0.00200	0.00600		mg/L	1	01/29/15 12:51 PM
Xylenes, Total	0.00368	0.00300	0.00900	J	mg/L	1	01/29/15 12:51 PM
Surr: a,a,a-Trifluorotoluene	100	0	87-113		%REC	1	01/29/15 12:51 PM
TRACE METALS: ICP-MS - WATER		**SW6020A**					Analyst: **RO**
Calcium	309	5.00	15.0		mg/L	50	02/01/15 05:50 PM
Magnesium	14.1	5.00	15.0	J	mg/L	50	02/01/15 05:50 PM
Potassium	3.02	0.100	0.300		mg/L	1	02/02/15 05:05 PM
Sodium	226	5.00	15.0		mg/L	50	02/01/15 05:50 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **AV**
Chloride	133	3.00	10.0		mg/L	10	01/29/15 04:33 PM
Nitrate-N	1.71	0.100	0.500		mg/L	1	01/29/15 02:40 PM
Sulfate	78.8	1.00	3.00		mg/L	1	01/29/15 02:40 PM
ALKALINITY		**M2320 B**					Analyst: **LM**
Alkalinity, Bicarbonate (As CaCO3)	330	10.0	20.0		mg/L @ pH 4.53	1	02/02/15 10:37 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.53	1	02/02/15 10:37 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.53	1	02/02/15 10:37 AM
Alkalinity, Total (As CaCO3)	330	20.0	20.0		mg/L @ pH 4.53	1	02/02/15 10:37 AM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **PT**
Total Dissolved Solids (Residue, Filterable)	672	10.0	10.0		mg/L	1	01/30/15 08:30 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
	C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
	E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
	MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
	RL	Reporting Limit	S	Spike Recovery outside control limits
	N	Parameter not NELAC certified		

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_150129A

The QC data in batch 67975 applies to the following samples: 1501282-01A

Sample ID **LCS-67975**	Batch ID: **67975**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 10:08:36 AM**	Prep Date: **1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0447	0.00200	0.0464	0	96.2	81	125			
Toluene	0.0451	0.00600	0.0464	0	97.1	84	123			
Ethylbenzene	0.0451	0.00600	0.0464	0	97.2	83	119			
Xylenes, Total	0.137	0.00900	0.139	0	98.2	81	117			
Surr: a,a,a-Trifluorotoluene	202		200.0		101	87	113			

Sample ID **MB-67975**	Batch ID: **67975**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 10:29:54 AM**	Prep Date: **1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.00200								
Toluene	ND	0.00600								
Ethylbenzene	ND	0.00600								
Xylenes, Total	ND	0.00900								
Surr: a,a,a-Trifluorotoluene	201		200.0		101	87	113			

Sample ID **1501253-02AMS**	Batch ID: **67975**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MS**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 2:49:24 PM**	Prep Date: **1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.13	0.200	4.64	0.158	107	81	125			
Toluene	14.1	0.600	4.64	8.98	110	84	123			
Ethylbenzene	6.15	0.600	4.64	0.802	115	83	119			
Xylenes, Total	19.4	0.900	13.9	3.64	113	81	117			
Surr: a,a,a-Trifluorotoluene	20100		20000		101	87	113			

Sample ID **1501253-02AMSD**	Batch ID: **67975**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 3:11:02 PM**	Prep Date: **1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	5.07	0.200	4.64	0.158	106	81	125	1.12	20	
Toluene	14.0	0.600	4.64	8.98	109	84	123	0.316	20	
Ethylbenzene	5.96	0.600	4.64	0.802	111	83	119	3.15	20	
Xylenes, Total	19.6	0.900	13.9	3.64	114	81	117	0.909	20	
Surr: a,a,a-Trifluorotoluene	19900		20000		99.5	87	113	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: GC8_150129A

Sample ID **ICV-150129**	Batch ID: **R77806**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 9:47:01 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0882	0.00200	0.0928	0	95.0	80	120			
Toluene	0.0883	0.00600	0.0928	0	95.1	80	120			
Ethylbenzene	0.0897	0.00600	0.0928	0	96.7	80	120			
Xylenes, Total	0.271	0.00900	0.278	0	97.5	80	120			
Surr: a,a,a-Trifluorotoluene	201		200.0		101	87	113			

Sample ID **CCV1-150129**	Batch ID: **R77806**	TestNo: **SW8021B**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC8_150129A**	Analysis Date: **1/29/2015 3:53:46 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0453	0.00200	0.0464	0	97.7	80	120			
Toluene	0.0466	0.00600	0.0464	0	101	80	120			
Ethylbenzene	0.0464	0.00600	0.0464	0	99.9	80	120			
Xylenes, Total	0.141	0.00900	0.139	0	101	80	120			
Surr: a,a,a-Trifluorotoluene	199		200.0		99.7	87	113			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150201C

The QC data in batch 67999 applies to the following samples: 1501282-01B

Sample ID	MB-67999	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:20:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	0.300								
Magnesium	ND	0.300								
Potassium	ND	0.300								
Sodium	ND	0.300								

Sample ID	LCS-67999	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:31:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.09	0.300	5.00	0	102	80	120			
Magnesium	5.04	0.300	5.00	0	101	80	120			
Potassium	4.97	0.300	5.00	0	99.5	80	120			
Sodium	5.08	0.300	5.00	0	102	80	120			

Sample ID	LCSD-67999	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:38:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.14	0.300	5.00	0	103	80	120	0.978	15	
Magnesium	5.09	0.300	5.00	0	102	80	120	0.996	15	
Potassium	4.98	0.300	5.00	0	99.5	80	120	0.059	15	
Sodium	5.14	0.300	5.00	0	103	80	120	1.15	15	

Sample ID	1501203-02C SD	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:44:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	2.19	1.50	0	2.23				1.53	10	

Sample ID	1501203-02C PDS	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 6:04:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Potassium	7.66	0.300	5.00	2.23	109	80	120			

Sample ID	1501203-02C MS	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	MS	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 6:06:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	175	0.300	5.00	173	54.0	80	120			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150201C

Sample ID	**1501203-02C MS**	Batch ID:	**67999**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MS**	Run ID:	**ICP-MS4_150201C**	Analysis Date:	**2/1/2015 6:06:00 PM**	Prep Date:	**1/30/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	43.1	0.300	5.00	39.4	74.1	80	120			S
Potassium	7.11	0.300	5.00	2.23	97.6	80	120			
Sodium	61.7	0.300	5.00	57.9	76.1	80	120			S

Sample ID	**1501203-02C MSD**	Batch ID:	**67999**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**ICP-MS4_150201C**	Analysis Date:	**2/1/2015 6:08:00 PM**	Prep Date:	**1/30/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	175	0.300	5.00	173	56.4	80	120	0.069	15	S
Magnesium	42.9	0.300	5.00	39.4	70.0	80	120	0.475	15	S
Potassium	7.13	0.300	5.00	2.23	98.1	80	120	0.309	15	
Sodium	61.2	0.300	5.00	57.9	65.9	80	120	0.828	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150201C

Sample ID	ICV-150201	Batch ID:	R77824	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 3:32:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.49	0.300	2.50	0	99.6	90	110			
Magnesium	2.64	0.300	2.50	0	106	90	110			
Potassium	2.62	0.300	2.50	0	105	90	110			
Sodium	2.64	0.300	2.50	0	106	90	110			

Sample ID	LCVL-150201	Batch ID:	R77824	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 3:37:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0974	0.300	0.100	0	97.4	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.111	0.300	0.100	0	111	70	130			
Sodium	0.107	0.300	0.100	0	107	70	130			

Sample ID	CCV2-150201	Batch ID:	R77824	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:09:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.12	0.300	5.00	0	102	90	110			
Magnesium	5.19	0.300	5.00	0	104	90	110			
Potassium	5.16	0.300	5.00	0	103	90	110			
Sodium	5.26	0.300	5.00	0	105	90	110			

Sample ID	LCVL2-150201	Batch ID:	R77824	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 5:15:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.113	0.300	0.100	0	113	70	130			
Magnesium	0.101	0.300	0.100	0	101	70	130			
Potassium	0.104	0.300	0.100	0	104	70	130			
Sodium	0.114	0.300	0.100	0	114	70	130			

Sample ID	CCV3-150201	Batch ID:	R77824	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_150201C	Analysis Date:	2/1/2015 6:10:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.10	0.300	5.00	0	102	90	110			
Magnesium	5.19	0.300	5.00	0	104	90	110			
Potassium	5.15	0.300	5.00	0	103	90	110			
Sodium	5.24	0.300	5.00	0	105	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150201C

Sample ID **LCVL3-150201**	Batch ID: **R77824**	TestNo: **SW6020A**		Units: **mg/L**	
SampType: **LCVL**	Run ID: **ICP-MS4_150201C**	Analysis Date: **2/1/2015 6:14:00 PM**		Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.100	0.300	0.100	0	100	70	130			
Magnesium	0.102	0.300	0.100	0	102	70	130			
Potassium	0.0946	0.300	0.100	0	94.6	70	130			
Sodium	0.122	0.300	0.100	0	122	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150202E

The QC data in batch 67999 applies to the following samples: 1501282-01B

Sample ID	1501203-02C SD	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS4_150202E	Analysis Date:	2/2/2015 4:57:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	168	15.0	0	168				0.453	10	
Magnesium	40.0	15.0	0	39.8				0.432	10	
Sodium	58.0	15.0	0	57.6				0.686	10	

Sample ID	1501203-02C PDS	Batch ID:	67999	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS4_150202E	Analysis Date:	2/2/2015 4:59:00 PM	Prep Date:	1/30/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	219	3.00	50.0	168	102	80	120			
Magnesium	95.3	3.00	50.0	39.8	111	80	120			
Sodium	114	3.00	50.0	57.6	112	80	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150202E

Sample ID	**ICV-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**ICV**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 10:45:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.48	0.300	2.50	0	99.1	90	110			
Magnesium	2.64	0.300	2.50	0	106	90	110			
Sodium	2.62	0.300	2.50	0	105	90	110			

Sample ID	**LCVL-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 10:49:00 AM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0923	0.300	0.100	0	92.3	70	130			
Magnesium	0.101	0.300	0.100	0	101	70	130			
Sodium	0.100	0.300	0.100	0	100	70	130			

Sample ID	**CCV7-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 4:34:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.81	0.300	5.00	0	96.2	90	110			
Magnesium	5.00	0.300	5.00	0	99.9	90	110			
Sodium	4.96	0.300	5.00	0	99.3	90	110			

Sample ID	**LCVL7-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 4:38:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0991	0.300	0.100	0	99.1	70	130			
Magnesium	0.0997	0.300	0.100	0	99.7	70	130			
Sodium	0.101	0.300	0.100	0	101	70	130			

Sample ID	**CCV8-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**CCV**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 5:20:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.78	0.300	5.00	0	95.5	90	110			
Magnesium	4.93	0.300	5.00	0	98.6	90	110			
Sodium	4.97	0.300	5.00	0	99.3	90	110			

Sample ID	**LCVL8-150202**	Batch ID:	**R77850**	TestNo:	**SW6020A**	Units:	**mg/L**
SampType:	**LCVL**	Run ID:	**ICP-MS4_150202E**	Analysis Date:	**2/2/2015 5:31:00 PM**	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.103	0.300	0.100	0	103	70	130			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_150202E

Sample ID **LCVL8-150202**	Batch ID: **R77850**	TestNo: **SW6020A**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_150202E**	Analysis Date: **2/2/2015 5:31:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	0.0985	0.300	0.100	0	98.5	70	130			
Sodium	0.148	0.300	0.100	0	148	70	130			S

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_150129A

The QC data in batch 67992 applies to the following samples: 1501282-01C

Sample ID	MB-67992	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC_150129A	Analysis Date:	1/29/2015 1:55:22 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.00								
Nitrate-N	ND	0.500								
Sulfate	ND	3.00								

Sample ID	LCS-67992	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC_150129A	Analysis Date:	1/29/2015 2:09:58 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.78	1.00	10.00	0	97.8	90	110			
Nitrate-N	4.90	0.500	5.000	0	97.9	90	110			
Sulfate	29.4	3.00	30.00	0	98.0	90	110			

Sample ID	LCSD-67992	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC_150129A	Analysis Date:	1/29/2015 2:24:35 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110	5.72	20	
Nitrate-N	4.87	0.500	5.000	0	97.4	90	110	0.549	20	
Sulfate	29.1	3.00	30.00	0	97.1	90	110	0.922	20	

Sample ID	1501283-01AMS	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_150129A	Analysis Date:	1/29/2015 3:35:19 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	5.30	0.500	4.516	1.357	87.3	90	110			S
Sulfate	134	3.00	20.00	111.8	109	90	110			

Sample ID	1501283-01AMSD	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC_150129A	Analysis Date:	1/29/2015 3:49:55 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate-N	5.57	0.500	4.516	1.357	93.2	90	110	4.91	20	
Sulfate	133	3.00	20.00	111.8	109	90	110	0.122	20	

Sample ID	1501283-01AMS	Batch ID:	67992	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC_150129A	Analysis Date:	1/29/2015 4:04:31 PM	Prep Date:	1/29/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	272	10.0	200.0	71.32	101	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_150129A

Sample ID	**1501283-01AMSD**	Batch ID:	**67992**	TestNo:	**E300**	Units:	**mg/L**
SampType:	**MSD**	Run ID:	**IC_150129A**	Analysis Date:	**1/29/2015 4:19:08 PM**	Prep Date:	**1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	271	10.0	200.0	71.32	99.9	90	110	0.462	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
J	Analyte detected between MDL and RL
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
J	Analyte detected between SDL and RL
DF	Dilution Factor
MDL	Method Detection Limit
R	RPD outside accepted control limits
S	Spike Recovery outside control limits
N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: IC_150129A

Sample ID	ICV-150129	Batch ID:	R77813	TestNo:	E300	Units:	mg/L
SampType:	ICV	Run ID:	IC_150129A	Analysis Date:	1/29/2015 12:55:17 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.8	1.00	25.00	0	99.3	90	110			
Nitrate-N	12.5	0.500	12.50	0	99.8	90	110			
Sulfate	74.0	3.00	75.00	0	98.7	90	110			

Sample ID	CCV1-150129	Batch ID:	R77813	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC_150129A	Analysis Date:	1/29/2015 5:19:15 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.86	1.00	10.00	0	98.6	90	110			
Nitrate-N	4.91	0.500	5.000	0	98.2	90	110			
Sulfate	29.4	3.00	30.00	0	98.1	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_150202B

The QC data in batch 68041 applies to the following samples: 1501282-01C

Sample ID **MB-68041**	Batch ID: **68041**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.49**
SampType: **MBLK**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 10:19:00 AM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID **LCS-68041**	Batch ID: **68041**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **LCS**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 10:24:00 AM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.0	20.0	50.00	0	106	74	129			

Sample ID **1501296-06E DUP**	Batch ID: **68041**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.54**
SampType: **DUP**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 11:54:00 AM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	41.5	20.0	0	42.40				2.15	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	41.5	20.0	0	42.40				2.15	20	

Sample ID **1502001-05E DUP**	Batch ID: **68041**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.53**
SampType: **DUP**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 3:16:00 PM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	241	20.0	0	241.1				0.221	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	241	20.0	0	241.1				0.221	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_150202B

Sample ID **ICV-150202**	Batch ID: **R77870**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **ICV**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 10:17:00 AM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	6.96	20.0	0							
Alkalinity, Carbonate (As CaCO3)	93.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	98	102			

Sample ID **CCV1-150202**	Batch ID: **R77870**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.52**
SampType: **CCV**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 12:01:00 PM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	19.0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	81.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Sample ID **CCV2-150202**	Batch ID: **R77870**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **CCV**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 3:07:00 PM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	8.64	20.0	0							
Alkalinity, Carbonate (As CaCO3)	91.8	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Sample ID **CCV3-150202**	Batch ID: **R77870**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.51**
SampType: **CCV**	Run ID: **TITRATOR_150202B**	Analysis Date: **2/2/2015 3:33:00 PM**	Prep Date: **2/2/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	13.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)	86.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	99.4	20.0	100.0	0	99.4	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Larson & Associates
Work Order: 1501282
Project: Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID: WC_150129A

The QC data in batch 67984 applies to the following samples: 1501282-01C

Sample ID	**MB-67984**	Batch ID:	**67984**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**MBLK**	Run ID:	**WC_150129A**	Analysis Date:	**1/30/2015 8:30:00 AM**	Prep Date:	**1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10.0								

Sample ID	**LCS-67984**	Batch ID:	**67984**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**LCS**	Run ID:	**WC_150129A**	Analysis Date:	**1/30/2015 8:30:00 AM**	Prep Date:	**1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	783	10.0	745.6	0	105	90	113			

Sample ID	**1501246-01D-DUP**	Batch ID:	**67984**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_150129A**	Analysis Date:	**1/30/2015 8:30:00 AM**	Prep Date:	**1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	263	10.0	0	268.0				1.88	5	

Sample ID	**1501246-02D-DUP**	Batch ID:	**67984**	TestNo:	**M2540C**	Units:	**mg/L**
SampType:	**DUP**	Run ID:	**WC_150129A**	Analysis Date:	**1/30/2015 8:30:00 AM**	Prep Date:	**1/29/2015**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	206	10.0	0	207.0				0.484	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

APPENDIX B

PHOTO DOCUMENTATION, AUGUST 3, 2015

Finished Remediation, Viewing South, October 3, 2013

Finished Remediation, Viewing Southwest, October 3, 2013

Remediated Area, Viewing South, August 3, 2015

Remediated Area, Viewing Southeast August 3, 2015

Remediated Area, Viewing Southeast, August 3, 2015

Remediated Area, Viewing South, August 3, 2015

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 22, 2013

Work Order: 13041610

Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326431	HA-1 (0.5')	soil	2013-04-12	11:30	2013-04-15
326432	HA-2 (0.5')	soil	2013-04-12	11:35	2013-04-15
326433	HA-3 (0.5')	soil	2013-04-12	11:40	2013-04-15
326434	HA-4 (0.5')	soil	2013-04-12	11:45	2013-04-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-04-15 and assigned to work order 13041610. Samples for work order 13041610 were received intact at a temperature of 4.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	85254	2013-04-18 at 12:00	100617	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85287	2013-04-19 at 12:00	100650	2013-04-19 at 16:46
TPH DRO - NEW	S 8015 D	85212	2013-04-17 at 10:00	100570	2013-04-17 at 23:00
TPH GRO	S 8015 D	85248	2013-04-18 at 16:03	100612	2013-04-18 at 16:03

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041610 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100650	Date Analyzed:	2013-04-19	Analyzed By:	RL
Prep Batch:	85287	Sample Preparation:	2013-04-19	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**5540**	mg/Kg	20	25.0

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**144**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		140	mg/Kg	1	100	140	70 - 130

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter		Flag	Cert	Result	RL Units	Dilution	RL
GRO	1	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.15	mg/Kg	5	2.00	108	69.6 - 124

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	5	2.00	109	77.7 - 120

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**306**	mg/Kg	2	25.0

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**95.5**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [2]	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	5	2.00	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	5	2.00	104	77.7 - 120

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**45.8**	mg/Kg	1	25.0

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	77.7 - 120

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**47.5**	mg/Kg	1	25.0

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.51	mg/Kg	1	2.00	126	69.6 - 124
4-Bromofluorobenzene (4-BFB)				2.33	mg/Kg	1	2.00	116	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 100570

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	7.14	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Method Blank (1) QC Batch: 100612

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	77.7 - 120

Method Blank (1) QC Batch: 100617

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100650

QC Batch:	100650	Date Analyzed:	2013-04-19	Analyzed By:	RL
Prep Batch:	85287	QC Preparation:	2013-04-19	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	247	mg/Kg	1	250	7.14	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	242	mg/Kg	1	250	7.14	94	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	111	mg/Kg	1	100	116	111	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.97	mg/Kg	1	2.00	92	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.16	mg/Kg	1	2.00	105	108	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	246	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	245	mg/Kg	1	250	<6.30	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100650 | Date Analyzed: 2013-04-19 | Analyzed By: RL
Prep Batch: 85287 | QC Preparation: 2013-04-19 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	254	mg/Kg	1	250	<6.30	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	251	mg/Kg	1	250	<6.30	100	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	7.38	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	217	mg/Kg	1	250	7.38	84	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	116	113	mg/Kg	1	100	116	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326425

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.7	mg/Kg	1	20.0	<0.230	94	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.91	mg/Kg	1	2	104	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.35	2.19	mg/Kg	1	2	118	110	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326427

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2360	mg/Kg	5	1250	945	113	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2390	mg/Kg	5	1250	945	116	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326431

QC Batch: 100650 | Date Analyzed: 2013-04-19 | Analyzed By: RL
Prep Batch: 85287 | QC Preparation: 2013-04-19 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	11300	mg/Kg	20	5000	5540	115	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	11300	mg/Kg	20	5000	5540	115	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	246	98	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	240	96	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.999	100	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100650 | Date Analyzed: 2013-04-19 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	27.5	110	90 - 110	2013-04-19

Standard (CCV-2)

QC Batch: 100650 Date Analyzed: 2013-04-19 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.1	100	90 - 110	2013-04-19

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Dilution due to surfactants.
2 Dilution due to surfactants.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13041610

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-12-2013 PAGE 1 OF 1

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-8, 0'	420	4/12/13	09:22	S	1			✓	✓			✓	✓													✓		
BH-8, 5'	421	4/12/13	09:25	S	1			✓	✓			✓	✓													✓		
BH-8, 10'	422	4/12/13	09:30	S	1			✓	✓			✓	✓													✓		
BH-8, 15'	423	4/12/13	09:35	S	1			✓	✓			✓	✓													✓		
BH-8, 20'	424	4/12/13	09:40	S	1			✓	✓			✓	✓													✓		
BH-8, 25'	425	4/12/13	10:05	S	1			✓	✓			✓	✓													✓		
BH-8, 30'	426	4/12/13	10:20	S	1			✓	✓			✓	✓													✓		
BH-8, 40'	427	4/12/13	10:30	S	1			✓	✓			✓	✓													✓		
BH-8, 50'	428	4/12/13	10:38	S	1			✓	✓			✓	✓													✓		
SP-1 (South)	429	4/12/13	10:40	S	1			✓	✓			✓	✓													✓		
SP-2 (North)	430	4/12/13	10:45	S	1			✓	✓			✓	✓													✓		
HA-1 (0.5')	431	4/12/13	11:30	S	1			✓	✓			✓	✓													✓		
HA-2 (0.5')	432	4/12/13	11:35	S	1			✓	✓			✓	✓													✓		
HA-3 (0.5')	433	4/12/13	11:40	S	1			✓	✓			✓	✓													✓		
HA-4 (0.5')	434	4/12/13	11:45	S	1			✓	✓			✓	✓													✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/12/2013 15:50 RECEIVED BY:(Signature) Trace Analysis

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/16/13 RECEIVED BY:(Signature) Brenda Ward 4.2 | 4.5 LS 849

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1 THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED Lubbock - all

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: July 17, 2013

Work Order: 12052511

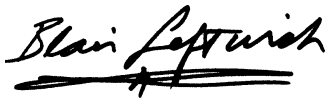
Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
298931	SW-A (2.5')	soil	2012-05-24	10:55	2012-05-25
298932	SW-A (4')	soil	2012-05-24	11:00	2012-05-25
298933	SW-B (2')	soil	2012-05-24	11:10	2012-05-25
298934	SW-B (4.5')	soil	2012-05-24	11:12	2012-05-25
298935	SW-C (1')	soil	2012-05-24	11:20	2012-05-25
298936	SW-C (3')	soil	2012-05-24	11:22	2012-05-25
298937	SW-D (1')	soil	2012-05-24	11:30	2012-05-25
298938	SW-D (3')	soil	2012-05-24	11:33	2012-05-25
298939	SW-E (1')	soil	2012-05-24	11:50	2012-05-25
298940	SW-E (3.5)	soil	2012-05-24	11:53	2012-05-25
298941	PB (3')	soil	2012-05-24	12:40	2012-05-25
298942	PB (7')	soil	2012-05-24	13:00	2012-05-25
298943	SW-F (1')	soil	2012-05-24	13:10	2012-05-25
298944	SW-G (1')	soil	2012-05-24	13:15	2012-05-25

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 50 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2012-05-25 and assigned to work order 12052511. Samples for work order 12052511 were received intact at a temperature of 4.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	77745	2012-05-30 at 08:30	91636	2012-05-30 at 09:23
Chloride (IC)	E 300.0	77788	2012-05-30 at 10:20	91691	2012-05-30 at 19:23
Chloride (IC)	E 300.0	77788	2012-05-30 at 10:20	91692	2012-05-31 at 10:24
Chloride (IC)	E 300.0	77788	2012-05-30 at 10:20	91693	2012-05-31 at 10:24
TPH DRO - NEW	S 8015 D	77892	2012-05-30 at 16:00	91808	2012-06-05 at 09:43
TPH DRO - NEW	S 8015 D	77893	2012-05-30 at 17:00	91809	2012-06-05 at 09:48
TPH GRO	S 8015 D	77745	2012-05-30 at 08:30	91637	2012-05-30 at 09:49
TPH ORO	S 8015 D	77892	2012-05-30 at 16:00	91810	2012-06-05 at 09:49
TPH ORO	S 8015 D	77893	2012-05-30 at 17:00	91811	2012-06-05 at 09:50

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 12052511 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 298931 - SW-A (2.5')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		2	**0.534**	mg/Kg	10	0.0200
Toluene		2	**0.619**	mg/Kg	10	0.0200
Ethylbenzene		2	**2.43**	mg/Kg	10	0.0200
Xylene		2	**8.60**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.93	mg/Kg	10	10.0	99	70 - 145.4
4-Bromofluorobenzene (4-BFB)			7.91	mg/Kg	10	10.0	79	53.6 - 158.9

Sample: 298931 - SW-A (2.5')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91691	Date Analyzed:	2012-05-30	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1970**	mg/Kg	10	10.0

Sample: 298931 - SW-A (2.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**20100**	mg/Kg	20	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		1910	mg/Kg	20	100	1910	75.4 - 130

Sample: 298931 - SW-A (2.5')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	**342**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.28	mg/Kg	10	10.0	93	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			10.6	mg/Kg	10	10.0	106	45.1 - 162.2

Sample: 298931 - SW-A (2.5')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**5050**	**5050**	**5050**	**5050**	mg/Kg	20	17.1	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		1910	mg/Kg	20	100	1910	61.5 - 159
n-Triacontane	Qsr	Qsr		0.00	mg/Kg	20	100	0	70 - 166

Sample: 298932 - SW-A (4')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.32	mg/Kg	1	2.00	116	70 - 145.4
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	53.6 - 158.9

Sample: 298932 - SW-A (4')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91691	Date Analyzed:	2012-05-30	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**1350**	mg/Kg	10	10.0

Sample: 298932 - SW-A (4')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	75.4 - 130

Sample: 298932 - SW-A (4')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	45.1 - 162.2

Sample: 298932 - SW-A (4')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	61.5 - 159
n-Triacontane			125	mg/Kg	1	100	125	70 - 166

Sample: 298933 - SW-B (2')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.34	mg/Kg	1	2.00	117	70 - 145.4
4-Bromofluorobenzene (4-BFB)			1.57	mg/Kg	1	2.00	78	53.6 - 158.9

Sample: 298933 - SW-B (2')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91691	Date Analyzed:	2012-05-30	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**4310**	mg/Kg	10	10.0

Sample: 298933 - SW-B (2')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO [1]	Qs,U	1	<250	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			124	mg/Kg	5	100	124	75.4 - 130

Sample: 298933 - SW-B (2')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.11	mg/Kg	1	2.00	106	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	45.1 - 162.2

Sample: 298933 - SW-B (2')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<85.5	<250	<250	<250	mg/Kg	5	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			124	mg/Kg	5	100	124	61.5 - 159
n-Triacontane			152	mg/Kg	5	100	152	70 - 166

Sample: 298934 - SW-B (4.5')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.25	mg/Kg	1	2.00	112	70 - 145.4
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	1	2.00	72	53.6 - 158.9

Sample: 298934 - SW-B (4.5')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91691	Date Analyzed:	2012-05-30	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**664**	mg/Kg	10	10.0

Sample: 298934 - SW-B (4.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	75.4 - 130

Sample: 298934 - SW-B (4.5')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.07	mg/Kg	1	2.00	104	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.61	mg/Kg	1	2.00	80	45.1 - 162.2

Sample: 298934 - SW-B (4.5')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	61.5 - 159
n-Triacontane			123	mg/Kg	1	100	123	70 - 166

Sample: 298935 - SW-C (1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.17	mg/Kg	1	2.00	58	53.6 - 158.9

Sample: 298935 - SW-C (1')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91691	Date Analyzed:	2012-05-30	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**7690**	mg/Kg	100	10.0

Sample: 298935 - SW-C (1')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
DRO	Qs,U	1		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			125	mg/Kg	1	100	125	75.4 - 130

Sample: 298935 - SW-C (1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO	U	2		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	1	2.00	90	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.32	mg/Kg	1	2.00	66	45.1 - 162.2

Sample: 298935 - SW-C (1')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			125	mg/Kg	1	100	125	61.5 - 159

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			128	mg/Kg	1	100	128	70 - 166

Sample: 298936 - SW-C (3')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	0.991	mg/Kg	1	2.00	50	53.6 - 158.9

Sample: 298936 - SW-C (3')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**783**	mg/Kg	10	10.0

Sample: 298936 - SW-C (3')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	75.4 - 130

Sample: 298936 - SW-C (3')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.17	mg/Kg	1	2.00	58	45.1 - 162.2

Sample: 298936 - SW-C (3')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	61.5 - 159
n-Triacontane			122	mg/Kg	1	100	122	70 - 166

Sample: 298937 - SW-D (1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.27	mg/Kg	1	2.00	64	53.6 - 158.9

Sample: 298937 - SW-D (1')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Qs		**784**	mg/Kg	10	10.0

Sample: 298937 - SW-D (1')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	75.4 - 130

Sample: 298937 - SW-D (1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	1	2.00	72	45.1 - 162.2

Sample: 298937 - SW-D (1')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	61.5 - 159
n-Triacontane			119	mg/Kg	1	100	119	70 - 166

Sample: 298938 - SW-D (3')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200

continued ...

sample 298938 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.23	mg/Kg	1	2.00	62	53.6 - 158.9

Sample: 298938 - SW-D (3')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**582**	mg/Kg	10	10.0

Sample: 298938 - SW-D (3')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	75.4 - 130

Sample: 298938 - SW-D (3')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.40	mg/Kg	1	2.00	70	45.1 - 162.2

Sample: 298938 - SW-D (3')

Laboratory: Lubbock
Analysis: TPH ORO | Analytical Method: S 8015 D | Prep Method: N/A
QC Batch: 91810 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | Sample Preparation: 2012-05-30 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			120	mg/Kg	1	100	120	61.5 - 159
n-Triacontane			122	mg/Kg	1	100	122	70 - 166

Sample: 298939 - SW-E (1')

Laboratory: Midland
Analysis: BTEX | Analytical Method: S 8021B | Prep Method: S 5035
QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | Sample Preparation: 2012-05-30 | Prepared By: AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.200	mg/Kg	10	0.0200
Toluene	U	2	<0.200	mg/Kg	10	0.0200
Ethylbenzene	U	2	<0.200	mg/Kg	10	0.0200
Xylene	U	2	<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			10.3	mg/Kg	10	10.0	103	70 - 145.4
4-Bromofluorobenzene (4-BFB)			6.61	mg/Kg	10	10.0	66	53.6 - 158.9

Sample: 298939 - SW-E (1')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Qs		**3500**	mg/Kg	10	10.0

Sample: 298939 - SW-E (1')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	B,Qs	1	**7340**	mg/Kg	10	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		651	mg/Kg	10	100	651	75.4 - 130

Sample: 298939 - SW-E (1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO		2	**68.4**	mg/Kg	10	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.51	mg/Kg	10	10.0	95	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			10.3	mg/Kg	10	10.0	103	45.1 - 162.2

Sample: 298939 - SW-E (1')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**893**	**893**	**893**	**893**	mg/Kg	10	17.1	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		651	mg/Kg	10	100	651	61.5 - 159
n-Triacontane	Qsr	Qsr		436	mg/Kg	10	100	436	70 - 166

Sample: 298940 - SW-E (3.5)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.100	mg/Kg	5	0.0200
Toluene	U	2	<0.100	mg/Kg	5	0.0200
Ethylbenzene	U	2	<0.100	mg/Kg	5	0.0200
Xylene	U	2	<0.100	mg/Kg	5	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				5.01	mg/Kg	5	5.00	100	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2.86	mg/Kg	5	5.00	57	53.6 - 158.9

Sample: 298940 - SW-E (3.5)

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs		**1640**	mg/Kg	10	10.0

Sample: 298940 - SW-E (3.5)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qs	1	**3280**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	390	mg/Kg	10	100	390	75.4 - 130

Sample: 298940 - SW-E (3.5)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	**55.7**	mg/Kg	5	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			4.62	mg/Kg	5	5.00	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			4.22	mg/Kg	5	5.00	84	45.1 - 162.2

Sample: 298940 - SW-E (3.5)

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<171	<500	<500	<500	mg/Kg	10	17.1	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		390	mg/Kg	10	100	390	61.5 - 159
n-Triacontane	Qsr	Qsr		295	mg/Kg	10	100	295	70 - 166

Sample: 298941 - PB (3')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.33	mg/Kg	1	2.00	116	70 - 145.4
4-Bromofluorobenzene (4-BFB)			1.46	mg/Kg	1	2.00	73	53.6 - 158.9

Sample: 298941 - PB (3')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91693	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**252**	mg/Kg	10	10.0

Sample: 298941 - PB (3')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Jb,Qs	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			127	mg/Kg	1	100	127	75.4 - 130

Sample: 298941 - PB (3')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		2	**5.28**	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.16	mg/Kg	1	2.00	108	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	45.1 - 162.2

Sample: 298941 - PB (3')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			127	mg/Kg	1	100	127	61.5 - 159

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			122	mg/Kg	1	100	122	70 - 166

Sample: 298942 - PB (7')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	70 - 145.4
4-Bromofluorobenzene (4-BFB)			1.40	mg/Kg	1	2.00	70	53.6 - 158.9

Sample: 298942 - PB (7')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91693	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**161**	mg/Kg	10	10.0

Sample: 298942 - PB (7')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	75.4 - 130

Sample: 298942 - PB (7')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.60	mg/Kg	1	2.00	80	45.1 - 162.2

Sample: 298942 - PB (7')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	1	100	122	61.5 - 159
n-Triacontane			127	mg/Kg	1	100	127	70 - 166

Sample: 298943 - SW-F (1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.27	mg/Kg	1	2.00	64	53.6 - 158.9

Sample: 298943 - SW-F (1')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91693	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**207**	mg/Kg	10	10.0

Sample: 298943 - SW-F (1')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb,Qs	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		148	mg/Kg	1	100	148	75.4 - 130

Sample: 298943 - SW-F (1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.07	mg/Kg	1	2.00	104	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.42	mg/Kg	1	2.00	71	45.1 - 162.2

Sample: 298943 - SW-F (1')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91810	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			148	mg/Kg	1	100	148	61.5 - 159
n-Triacontane			144	mg/Kg	1	100	144	70 - 166

Sample: 298944 - SW-G (1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	91636	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	2	<0.0200	mg/Kg	1	0.0200
Toluene	U	2	<0.0200	mg/Kg	1	0.0200

continued ...

sample 298944 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Ethylbenzene	U	2	<0.0200	mg/Kg	1	0.0200
Xylene	U	2	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 145.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.18	mg/Kg	1	2.00	59	53.6 - 158.9

Sample: 298944 - SW-G (1')

Laboratory:	Midland				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	91693	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	Sample Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**500**	mg/Kg	10	10.0

Sample: 298944 - SW-G (1')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91809	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77893	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	136	mg/Kg	1	100	136	75.4 - 130

Sample: 298944 - SW-G (1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	91637	Date Analyzed:	2012-05-30	Analyzed By:	AG
Prep Batch:	77745	Sample Preparation:	2012-05-30	Prepared By:	AG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	2	<2.00	mg/Kg	1	2.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			1.28	mg/Kg	1	2.00	64	45.1 - 162.2

Sample: 298944 - SW-G (1')

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	91811	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77893	Sample Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	Qr,Qs,U		<17.1	<50.0	<50.0	<50.0	mg/Kg	1	17.1	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			136	mg/Kg	1	100	136	61.5 - 159
n-Triacontane			138	mg/Kg	1	100	138	70 - 166

Method Blanks

Method Blank (1) QC Batch: 91636

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		2	<0.00470	mg/Kg	0.02
Toluene		2	<0.00980	mg/Kg	0.02
Ethylbenzene		2	<0.00500	mg/Kg	0.02
Xylene		2	<0.0170	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.09	mg/Kg	1	2.00	104	78 - 123.6
4-Bromofluorobenzene (4-BFB)			1.22	mg/Kg	1	2.00	61	51.3 - 122.4

Method Blank (1) QC Batch: 91637

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		2	<1.22	mg/Kg	2

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	78.6 - 131
4-Bromofluorobenzene (4-BFB)			1.37	mg/Kg	1	2.00	68	51 - 130

Method Blank (1) QC Batch: 91691

QC Batch: 91691 | Date Analyzed: 2012-05-30 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<0.0460	mg/Kg	10

Method Blank (1) QC Batch: 91692

QC Batch:	91692	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	QC Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			0.829	mg/Kg	10

Method Blank (1) QC Batch: 91693

QC Batch:	91693	Date Analyzed:	2012-05-31	Analyzed By:	AR
Prep Batch:	77788	QC Preparation:	2012-05-30	Prepared By:	AR

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			0.840	mg/Kg	10

Method Blank (1) QC Batch: 91808

QC Batch:	91808	Date Analyzed:	2012-06-05	Analyzed By:	CM
Prep Batch:	77892	QC Preparation:	2012-05-30	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.50	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			123	mg/Kg	1	100	123	75.4 - 130

Method Blank (1) QC Batch: 91809

QC Batch: 91809 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<6.50	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	75.4 - 130

Method Blank (1) QC Batch: 91810

QC Batch: 91810 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | QC Preparation: 2012-05-30 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			<17.1	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			123	mg/Kg	1	100	123	61.5 - 159
n-Triacontane			123	mg/Kg	1	100	123	70 - 166

Method Blank (1) QC Batch: 91811

QC Batch: 91811 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			<17.1	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	61.5 - 159
n-Triacontane			120	mg/Kg	1	100	120	70 - 166

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.02	mg/Kg	1	2.00	<0.00470	101	86.5 - 124.9
Toluene		2	2.01	mg/Kg	1	2.00	<0.00980	100	84.7 - 122.5
Ethylbenzene		2	1.96	mg/Kg	1	2.00	<0.00500	98	79.4 - 118.9
Xylene		2	5.80	mg/Kg	1	6.00	<0.0170	97	77.5 - 119

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	2.14	mg/Kg	1	2.00	<0.00470	107	86.5 - 124.9	6	20
Toluene		2	2.15	mg/Kg	1	2.00	<0.00980	108	84.7 - 122.5	7	20
Ethylbenzene		2	2.12	mg/Kg	1	2.00	<0.00500	106	79.4 - 118.9	8	20
Xylene		2	6.20	mg/Kg	1	6.00	<0.0170	103	77.5 - 119	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.10	1.97	mg/Kg	1	2.00	105	98	73.9 - 127
4-Bromofluorobenzene (4-BFB)	1.74	1.66	mg/Kg	1	2.00	87	83	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	17.0	mg/Kg	1	20.0	<1.22	85	65.3 - 105.7

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	17.1	mg/Kg	1	20.0	<1.22	86	65.3 - 105.7	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.92	mg/Kg	1	2.00	88	96	79 - 131.2
4-Bromofluorobenzene (4-BFB)	1.58	1.72	mg/Kg	1	2.00	79	86	56.4 - 136.6

Laboratory Control Spike (LCS-1)

QC Batch: 91691 | Date Analyzed: 2012-05-30 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			242	mg/Kg	1	250	<0.0460	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			242	mg/Kg	1	250	<0.0460	97	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 91692 | Date Analyzed: 2012-05-31 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			242	mg/Kg	1	250	<0.0460	97	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			245	mg/Kg	1	250	<0.0460	98	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 91693 | Date Analyzed: 2012-05-31 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			233	mg/Kg	1	250	<0.0460	93	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			243	mg/Kg	1	250	<0.0460	97	90 - 110	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 91808 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | QC Preparation: 2012-05-30 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	276	mg/Kg	1	250	<6.50	110	73.2 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	287	mg/Kg	1	250	<6.50	115	73.2 - 118	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	118	116	mg/Kg	1	100	118	116	75.4 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 91809 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	274	mg/Kg	1	250	<6.50	110	73.2 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	284	mg/Kg	1	250	<6.50	114	73.2 - 118	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	120	119	mg/Kg	1	100	120	119	75.4 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 91810 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | QC Preparation: 2012-05-30 | Prepared By: CM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	118	116	mg/Kg	1	100	118	116	61.5 - 159
n-Triacontane	113	111	mg/Kg	1	100	113	111	70 - 166

Laboratory Control Spike (LCS-1)

QC Batch: 91811 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	120	119	mg/Kg	1	100	120	119	61.5 - 159
n-Triacontane	121	120	mg/Kg	1	100	121	120	70 - 166

Matrix Spike (MS-1) Spiked Sample: 298935

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		2	2.54	mg/Kg	1	2.00	<0.00470	127	69.3 - 159.2
Toluene		2	2.60	mg/Kg	1	2.00	<0.00980	130	68.7 - 157
Ethylbenzene		2	2.69	mg/Kg	1	2.00	<0.00500	134	71.6 - 158.2
Xylene		2	7.75	mg/Kg	1	6.00	<0.0170	129	70.8 - 159.8

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		2	2.26	mg/Kg	1	2.00	<0.00470	113	69.3 - 159.2	12	20
Toluene		2	2.31	mg/Kg	1	2.00	<0.00980	116	68.7 - 157	12	20
Ethylbenzene		2	2.40	mg/Kg	1	2.00	<0.00500	120	71.6 - 158.2	11	20
Xylene		2	6.90	mg/Kg	1	6.00	<0.0170	115	70.8 - 159.8	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.44	2.33	mg/Kg	1	2	122	116	71.4 - 133.9
4-Bromofluorobenzene (4-BFB)	1.80	1.66	mg/Kg	1	2	90	83	72.6 - 144.1

Matrix Spike (MS-1) Spiked Sample: 298936

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG
Prep Batch: 77745 | QC Preparation: 2012-05-30 | Prepared By: AG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		2	18.8	mg/Kg	1	20.0	<1.22	94	28.2 - 157.2

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		2	16.6	mg/Kg	1	20.0	<1.22	83	28.2 - 157.2	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	1.80	mg/Kg	1	2	100	90	75.5 - 122.3
4-Bromofluorobenzene (4-BFB)	1.82	1.65	mg/Kg	1	2	91	82	77.9 - 122.4

Matrix Spike (MS-1) Spiked Sample: 298935

QC Batch: 91691 | Date Analyzed: 2012-05-30 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			34600	mg/Kg	100	27500	7690	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			34300	mg/Kg	100	27500	7690	97	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 298940

QC Batch: 91692 | Date Analyzed: 2012-05-31 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			26400	mg/Kg	100	27500	1640	90	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Qs	Qs	26300	mg/Kg	100	27500	1640	90	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 298944

QC Batch: 91693 | Date Analyzed: 2012-05-31 | Analyzed By: AR
Prep Batch: 77788 | QC Preparation: 2012-05-30 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			27400	mg/Kg	100	27500	1320	95	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			27200	mg/Kg	100	27500	1320	94	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 298926

QC Batch: 91808 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | QC Preparation: 2012-05-30 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO Qs	Qs	1	4440	mg/Kg	5	250	3920	208	75.4 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO Qs	Qs	1	4440	mg/Kg	5	250	3920	208	75.4 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	535	540	mg/Kg	5	100	535	540	38.4 - 143

Matrix Spike (MS-1) Spiked Sample: 298944

QC Batch: 91809 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	214	mg/Kg	1	250	<6.50	86	75.4 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr,Qs Qr,Qs	1	174	mg/Kg	1	250	<6.50	70	75.4 - 130	21	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	128	118	mg/Kg	1	100	128	118	38.4 - 143

Matrix Spike (MS-1) Spiked Sample: 298926

QC Batch: 91810 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77892 | QC Preparation: 2012-05-30 | Prepared By: CM

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	535	540	mg/Kg	5	100	535	540	61.5 - 159
n-Triacontane	Qsr	Qsr	339	162	mg/Kg	5	100	339	162	70 - 166

Matrix Spike (MS-1) Spiked Sample: 298944

QC Batch: 91811 | Date Analyzed: 2012-06-05 | Analyzed By: CM
Prep Batch: 77893 | QC Preparation: 2012-05-30 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			148	mg/Kg	1	250	<17.1	59	58 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO	Qr,Qs Qr,Qs		<17.1	mg/Kg	1	250	<17.1	0	58 - 129	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

matrix spikes continued . . .

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	128	118	mg/Kg	1	100	128	118	61.5 - 159

Calibration Standards

Standard (CCV-1)

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.107	107	80 - 120	2012-05-30
Toluene		2	mg/kg	0.100	0.107	107	80 - 120	2012-05-30
Ethylbenzene		2	mg/kg	0.100	0.108	108	80 - 120	2012-05-30
Xylene		2	mg/kg	0.300	0.326	109	80 - 120	2012-05-30

Standard (CCV-2)

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.0968	97	80 - 120	2012-05-30
Toluene		2	mg/kg	0.100	0.0952	95	80 - 120	2012-05-30
Ethylbenzene		2	mg/kg	0.100	0.0916	92	80 - 120	2012-05-30
Xylene		2	mg/kg	0.300	0.263	88	80 - 120	2012-05-30

Standard (CCV-3)

QC Batch: 91636 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		2	mg/kg	0.100	0.0962	96	80 - 120	2012-05-30
Toluene		2	mg/kg	0.100	0.0952	95	80 - 120	2012-05-30
Ethylbenzene		2	mg/kg	0.100	0.0936	94	80 - 120	2012-05-30
Xylene		2	mg/kg	0.300	0.276	92	80 - 120	2012-05-30

Standard (CCV-1)

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	1.17	117	80 - 120	2012-05-30

Standard (CCV-2)

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.881	88	80 - 120	2012-05-30

Standard (CCV-3)

QC Batch: 91637 | Date Analyzed: 2012-05-30 | Analyzed By: AG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		2	mg/Kg	1.00	0.993	99	80 - 120	2012-05-30

Standard (CCV-1)

QC Batch: 91691 | Date Analyzed: 2012-05-30 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	23.9	96	90 - 110	2012-05-30

Standard (CCV-2)

QC Batch: 91691 | Date Analyzed: 2012-05-30 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	24.1	96	90 - 110	2012-05-30

Standard (CCV-1)

QC Batch: 91692 Date Analyzed: 2012-05-31 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	24.1	96	90 - 110	2012-05-31

Standard (CCV-2)

QC Batch: 91692 Date Analyzed: 2012-05-31 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	24.1	96	90 - 110	2012-05-31

Standard (CCV-1)

QC Batch: 91693 Date Analyzed: 2012-05-31 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	24.1	96	90 - 110	2012-05-31

Standard (CCV-2)

QC Batch: 91693 Date Analyzed: 2012-05-31 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	25.0	24.1	96	90 - 110	2012-05-31

Standard (CCV-1)

QC Batch: 91808 Date Analyzed: 2012-06-05 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	280	112	80 - 120	2012-06-05

Standard (CCV-2)

QC Batch: 91808 Date Analyzed: 2012-06-05 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	275	110	80 - 120	2012-06-05

Standard (CCV-3)

QC Batch: 91808 Date Analyzed: 2012-06-05 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	288	115	80 - 120	2012-06-05

Standard (CCV-1)

QC Batch: 91809 Date Analyzed: 2012-06-05 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	288	115	80 - 120	2012-06-05

Standard (CCV-2)

QC Batch: 91809 Date Analyzed: 2012-06-05 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	286	114	80 - 120	2012-06-05

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock
2	NELAP	T104704392-12-4	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Estimated concentration = 32.2 mg/kg.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

12052511

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: G Woolf

DATE: 5-24-12 PAGE 1 OF 2

PO #: 12052511 LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: D McGinnis

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ❑ NaOH ❑ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ❑ 8021B | TRPH 418.1 ❑ TPH 1005 ❑ TPH 1006 ❑ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ❑ | SVOC 8270 ❑ PAH 8270 ❑ HOLDPAH ❑ | 8081 PESTICIDES ❑ 8151 HERBICIDES ❑ | 8082 PCBS ❑ | TCLP - METALS (RCRA) ❑ TCLP VOC ❑ | TCLP - PEST ❑ HERB ❑ Semi-VOC ❑ | TOTAL METALS (RCRA) ❑ OTHER LIST ❑ | LEAD - TOTAL ❑ D.W. 200.8 ❑ TCLP ❑ | RCI ❑ TOX ❑ FLASHPOINT ❑ | TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑ | pH ❑ HEXAVALENT CHROMIUM ❑ | EXPLOSIVES ❑ PECHLORATE ❑ | CHLORIDE ☒ ANIONS ❑ ALKALINITY ❑

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ❑ NaOH ❑	ICE	UNPRESERVED	BTEX ☒ MTBE ❑ 8021B	TRPH 418.1 ❑ TPH 1005 ❑ TPH 1006 ❑	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ❑	SVOC 8270 ❑ PAH 8270 ❑ HOLDPAH ❑	8081 PESTICIDES ❑ 8151 HERBICIDES ❑	8082 PCBS ❑	TCLP - METALS (RCRA) ❑ TCLP VOC ❑	TCLP - PEST ❑ HERB ❑ Semi-VOC ❑	TOTAL METALS (RCRA) ❑ OTHER LIST ❑	LEAD - TOTAL ❑ D.W. 200.8 ❑ TCLP ❑	RCI ❑ TOX ❑ FLASHPOINT ❑	TDS ❑ TSS ❑ % MOISTURE ❑ CYANIDE ❑	pH ❑ HEXAVALENT CHROMIUM ❑	EXPLOSIVES ❑ PECHLORATE ❑	CHLORIDE ☒ ANIONS ❑ ALKALINITY ❑	FIELD NOTES
SP-A	298926	5-24	1000	S	1				X		X		X	X													X	8015 extended to C35
SP-B	927		1005																									
SP-C	928		1010																									
SP-D	929		1020																									
SP-E	930		1245																									
SW-A (2½)	931		1055																									
SW-A (4')	932		1100																									
SW-B (2')	933		1110																									
SW-B (4½')	934		1112																									
SW-C (1')	935		1120																									
SW-C (3')	936		1122																									
SW-D (1')	937		1130																									
SW-D (3')	938		1133																									
SW-E (1')	939		1150																									
SW-E (3½')	940		1153																									
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 5-25-12/0422 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 5/25/12 10:15 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) Brenda Ward 5/30/12

LS ZN 732000 40/3.9

TURN AROUND TIME
NORMAL ☒
1 DAY ❑
2 DAY ❑
OTHER ❑

LABORATORY USE ONLY: Midland - TPH GRO/DRO Cl
RECEIVING TEMP: 4.9 THERM #:
CUSTODY SEALS - ❑ BROKEN ❑ INTACT ❑ NOT USED
❑ CARRIER BILL # Xenco - TPH DRO/CL
☒ HAND DELIVERED

CHAIN-OF-CUSTODY

LAI Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: C. Woolf

DATE: 5-24-12 PAGE 2 OF 2

PO #: 1205255 11 LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: D McGinnis

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
PB (3')	941	5-24	1240	S	1				X		X		X	X													X	8015 extended to C35
PB (7')	942	↓	1300	↓	↓				↓		↓		↓	↓													↓	
SW-F (1')	943	↓	1310	↓	↓				↓		↓		↓	↓													↓	
SW-G (1')	944	↓	1315	↓	↓				↓		↓		↓	↓													↓	

TOTAL

RELINQUISHED BY:(Signature) DATE/TIME 5-25-12/0922 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 5/25/12 10:15 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature) Brenda Ward

5/30/12 LS 732000 4.0/3.9

TURN AROUND TIME

NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 4.9 THERM #:

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL #

☑ HAND DELIVERED

Analytical Report 450292

for

Larson & Associates

Project Manager: Coty Woolf

Chamberlain

25-OCT-12

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)
Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

25-OCT-12

Project Manager: **Coty Woolf**
Larson & Associates
P.O. Box 50685
Midland, TX 79710

Reference: XENCO Report No: **450292**
Chamberlain
Project Address:

Coty Woolf:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 450292. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 450292 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Nicholas Straccione
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 450292

Larson & Associates, Midland, TX

Chamberlain

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BS-3 (14')	S	10-04-12 09:20		450292-001
BS-17 (10')	S	10-04-12 09:35		450292-002
BS-15 (15')	S	10-04-12 09:50		450292-003
SW-7 (4')	S	10-04-12 10:00		450292-004
BS-19 (6')	S	10-04-12 10:05		450292-005
BS-18 (4')	S	10-04-12 10:15		450292-006
SW-8 (4')	S	10-04-12 10:20		450292-007
BS-16 (6')	S	10-04-12 10:28		450292-008
SW-9 (4')	S	10-04-12 10:30		450292-009
BS-14 (9')	S	10-04-12 10:37		450292-010
SW-6 (4')	S	10-04-12 10:40		450292-011
SW-10 (3')	S	10-04-12 10:48		450292-012
SW-5 (4')	S	10-04-12 11:05		450292-013
SW-4 (4')	S	10-04-12 11:12		450292-014
BS-7 (4')	S	10-04-12 11:17		450292-015
BS-6 (6')	S	10-04-12 11:20		450292-016
BS-5 (8')	S	10-04-12 11:30		450292-017
BS-4 (10')	S	10-04-12 11:40		450292-018
SW-3 (4')	S	10-04-12 11:41		450292-019
SW-2 (4')	S	10-04-12 11:45		450292-020
SW-1 (4')	S	10-04-12 11:49		450292-021
BS-1 (8')	S	10-04-12 11:52		450292-022
BS-2 (8')	S	10-04-12 11:58		450292-023
SW-11 (1')	S	10-04-12 12:00		450292-024
BS-10 (8')	S	10-04-12 12:04		450292-025
BS-9 (8')	S	10-04-12 12:07		450292-026
SW-12 (4')	S	10-04-12 12:15		450292-027
BS-8 (6')	S	10-04-12 12:27		450292-028
BS-11 (4')	S	10-04-12 12:35		450292-029
BS-12 (5')	S	10-04-12 12:38		450292-030
BS-13 (3')	S	10-04-12 12:45		450292-031

CASE NARRATIVE

Client Name: Larson & Associates
Project Name: Chamberlain

Project ID:
Work Order Number: 450292

Report Date: 25-OCT-12
Date Received: 10/05/2012

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-898393 BTEX by EPA 8021B
SW8021BM

Batch 898393, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis
Samples affected are: 450292-002,450292-001.

SW8021BM

Batch 898393, Ethylbenzene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 450292-022, -024, -001, -025, -002, -023, -026, -017, -018, -016, -019, -021, -027, -020, -028.
The Laboratory Control Sample for Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	450292-001		450292-002		450292-003		450292-004		450292-005		450292-006	
	Field Id:	BS-3 (14')		BS-17 (10')		BS-15 (15')		SW-7 (4')		BS-19 (6')		BS-18 (4')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-04-12 09:20		Oct-04-12 09:35		Oct-04-12 09:50		Oct-04-12 10:00		Oct-04-12 10:05		Oct-04-12 10:15	
BTEX by EPA 8021B	***Extracted:***	Oct-09-12 08:30		Oct-09-12 08:30		Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45	
	Analyzed:	Oct-09-12 14:02		Oct-09-12 14:17		Oct-08-12 17:19		Oct-08-12 14:04		Oct-08-12 14:19		Oct-08-12 14:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.217	ND	0.243	ND	0.00111	ND	0.00108	ND	0.00121	ND	0.00111
Toluene		0.445	0.434	ND	0.486	ND	0.00221	ND	0.00217	ND	0.00242	ND	0.00222
Ethylbenzene		0.881	0.217	1.03	0.243	ND	0.00111	ND	0.00108	ND	0.00121	ND	0.00111
m_p-Xylenes		10.0	0.434	14.9	0.486	ND	0.00221	ND	0.00217	ND	0.00242	ND	0.00222
o-Xylene		5.10	0.217	4.72	0.243	0.00116	0.00111	ND	0.00108	ND	0.00121	ND	0.00111
Total Xylenes		15.1	0.217	19.6	0.243	0.00116	0.00111	ND	0.00108	ND	0.00121	ND	0.00111
Total BTEX		16.4	0.217	20.7	0.243	0.00116	0.00111	ND	0.00108	ND	0.00121	ND	0.00111
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-08-12 21:22		Oct-08-12 21:54		Oct-08-12 22:10		Oct-08-12 22:26		Oct-08-12 22:42		Oct-08-12 22:58	
	Analyzed:	Oct-08-12 21:22		Oct-08-12 21:54		Oct-08-12 22:10		Oct-08-12 22:26		Oct-08-12 22:42		Oct-08-12 22:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1510	10.2	181	1.32	369	1.07	3680	11.7	247	11.6	114	1.04
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-09-12 15:30		Oct-09-12 15:30		Oct-09-12 15:30		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		8.25	1.00	17.8	1.00	9.58	1.00	7.77	1.00	17.4	1.00	10.1	1.00
TPH By SW8015B Mod	***Extracted:***	Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30	
	Analyzed:	Oct-08-12 19:32		Oct-09-12 11:21		Oct-08-12 20:39		Oct-08-12 21:13		Oct-08-12 21:46		Oct-08-12 22:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		525	16.3	1220	91.1	19.7	16.5	16.8	16.2	ND	18.1	ND	16.6
C10 - C28 Diesel Range Hydrocarbons		4310	16.3	9510	91.1	2690	16.5	23.7	16.2	23.8	18.1	111	16.6
Total TPH		4990	16.3	11200	91.1	2810	16.5	40.5	16.2	23.8	18.1	111	16.6

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Nicholas Straccione
Project Manager

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	450292-007		450292-008		450292-009		450292-010		450292-011		450292-012	
	Field Id:	SW-8 (4')		BS-16 (6')		SW-9 (4')		BS-14 (9')		SW-6 (4')		SW-10 (3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-04-12 10:20		Oct-04-12 10:28		Oct-04-12 10:30		Oct-04-12 10:37		Oct-04-12 10:40		Oct-04-12 10:48	
BTEX by EPA 8021B	***Extracted:***	Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45	
	Analyzed:	Oct-08-12 14:49		Oct-08-12 15:04		Oct-08-12 15:19		Oct-08-12 15:34		Oct-08-12 16:04		Oct-08-12 16:19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00103	ND	0.00119	ND	0.00114	ND	0.00114	ND	0.00121	ND	0.00109
Toluene		ND	0.00206	ND	0.00238	ND	0.00227	ND	0.00228	ND	0.00243	0.00229	0.00218
Ethylbenzene		ND	0.00103	ND	0.00119	ND	0.00114	ND	0.00114	ND	0.00121	0.0112	0.00109
m_p-Xylenes		ND	0.00206	ND	0.00238	ND	0.00227	ND	0.00228	ND	0.00243	0.0156	0.00218
o-Xylene		ND	0.00103	ND	0.00119	ND	0.00114	ND	0.00114	ND	0.00121	0.0106	0.00109
Total Xylenes		ND	0.00103	ND	0.00119	ND	0.00114	ND	0.00114	ND	0.00121	0.0262	0.00109
Total BTEX		ND	0.00103	ND	0.00119	ND	0.00114	ND	0.00114	ND	0.00121	0.0397	0.00109
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-08-12 23:47		Oct-09-12 00:03		Oct-09-12 00:19		Oct-09-12 00:35		Oct-09-12 00:51		Oct-09-12 01:07	
	Analyzed:	Oct-08-12 23:47		Oct-09-12 00:03		Oct-09-12 00:19		Oct-09-12 00:35		Oct-09-12 00:51		Oct-09-12 01:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		22.0	0.952	1900	12.9	2620	11.1	260	1.12	531	12.7	1780	12.0
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.50	1.00	16.4	1.00	12.5	1.00	12.1	1.00	17.8	1.00	8.96	1.00
TPH By SW8015B Mod	***Extracted:***	Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30	
	Analyzed:	Oct-09-12 11:50		Oct-08-12 23:25		Oct-08-12 23:58		Oct-09-12 01:04		Oct-09-12 01:37		Oct-09-12 02:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	15.5	ND	17.9	ND	17.2	ND	17.1	ND	18.2	66.2	16.5
C10 - C28 Diesel Range Hydrocarbons		ND	15.5	ND	17.9	39.8	17.2	1020	17.1	19.4	18.2	4270	16.5
Total TPH		ND	15.5	ND	17.9	39.8	17.2	1060	17.1	19.4	18.2	4500	16.5

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Nicholas Straccione
Project Manager

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	450292-013		450292-014		450292-015		450292-016		450292-017		450292-018	
	Field Id:	SW-5 (4')		SW-4 (4')		BS-7 (4')		BS-6 (6')		BS-5 (8')		BS-4 (10')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-04-12 11:05		Oct-04-12 11:12		Oct-04-12 11:17		Oct-04-12 11:20		Oct-04-12 11:30		Oct-04-12 11:40	
BTEX by EPA 8021B	***Extracted:***	Oct-08-12 11:45		Oct-08-12 11:45		Oct-08-12 11:45		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30	
	Analyzed:	Oct-08-12 16:34		Oct-08-12 16:49		Oct-08-12 17:04		Oct-09-12 10:04		Oct-09-12 10:19		Oct-09-12 10:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00115	ND	0.00110	ND	0.00123	ND	0.00116	ND	0.00117	ND	0.00113
Toluene		ND	0.00230	ND	0.00221	ND	0.00245	ND	0.00231	ND	0.00234	ND	0.00226
Ethylbenzene		ND	0.00115	ND	0.00110	ND	0.00123	ND	0.00116	ND	0.00117	0.00389	0.00113
m_p-Xylenes		ND	0.00230	ND	0.00221	ND	0.00245	ND	0.00231	ND	0.00234	0.00746	0.00226
o-Xylene		ND	0.00115	ND	0.00110	ND	0.00123	ND	0.00116	ND	0.00117	0.00213	0.00113
Total Xylenes		ND	0.00115	ND	0.00110	ND	0.00123	ND	0.00116	ND	0.00117	0.00959	0.00113
Total BTEX		ND	0.00115	ND	0.00110	ND	0.00123	ND	0.00116	ND	0.00117	0.0135	0.00113
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-09-12 01:23		Oct-09-12 01:39		Oct-09-12 01:55		Oct-09-12 02:11		Oct-09-12 03:00		Oct-09-12 03:16	
	Analyzed:	Oct-09-12 01:23		Oct-09-12 01:39		Oct-09-12 01:55		Oct-09-12 02:11		Oct-09-12 03:00		Oct-09-12 03:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		369	1.09	48.5	1.04	18.2	1.23	178	1.06	152	1.12	59.0	1.25
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:38		Oct-10-12 15:38		Oct-10-12 15:38	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		12.9	1.00	9.84	1.00	18.7	1.00	13.7	1.00	15.3	1.00	12.1	1.00
TPH By SW8015B Mod	***Extracted:***	Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30		Oct-08-12 13:30	
	Analyzed:	Oct-09-12 02:42		Oct-09-12 03:15		Oct-09-12 03:47		Oct-09-12 04:19		Oct-09-12 04:52		Oct-09-12 05:24	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	17.2	ND	16.6	ND	18.4	ND	17.4	ND	17.7	68.8	17.0
C10 - C28 Diesel Range Hydrocarbons		94.9	17.2	30.4	16.6	ND	18.4	ND	17.4	109	17.7	5730	17.0
Total TPH		94.9	17.2	30.4	16.6	ND	18.4	ND	17.4	109	17.7	6020	17.0

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Nicholas Straccione
Project Manager

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	450292-019		450292-020		450292-021		450292-022		450292-023		450292-024	
	Field Id:	SW-3 (4')		SW-2 (4')		SW-1 (4')		BS-1 (8')		BS-2 (8')		SW-11 (1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-04-12 11:41		Oct-04-12 11:45		Oct-04-12 11:49		Oct-04-12 11:52		Oct-04-12 11:58		Oct-04-12 12:00	
BTEX by EPA 8021B	***Extracted:***	Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30	
	Analyzed:	Oct-09-12 10:49		Oct-09-12 11:04		Oct-09-12 11:19		Oct-09-12 11:34		Oct-09-12 11:48		Oct-09-12 12:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00111	ND	0.00115	ND	0.00106	ND	0.00109	ND	0.00108	ND	0.00106
Toluene		ND	0.00222	ND	0.00231	ND	0.00212	0.00228	0.00219	ND	0.00215	ND	0.00211
Ethylbenzene		ND	0.00111	ND	0.00115	ND	0.00106	0.00356	0.00109	0.0278	0.00108	ND	0.00106
m_p-Xylenes		ND	0.00222	ND	0.00231	ND	0.00212	0.0173	0.00219	0.0850	0.00215	ND	0.00211
o-Xylene		ND	0.00111	ND	0.00115	ND	0.00106	0.00712	0.00109	0.0280	0.00108	ND	0.00106
Total Xylenes		ND	0.00111	ND	0.00115	ND	0.00106	0.0244	0.00109	0.113	0.00108	ND	0.00106
Total BTEX		ND	0.00111	ND	0.00115	ND	0.00106	0.0303	0.00109	0.141	0.00108	ND	0.00106
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-09-12 03:32		Oct-09-12 03:48		Oct-09-12 05:41		Oct-09-12 06:13		Oct-09-12 06:29		Oct-09-12 06:45	
	Analyzed:	Oct-09-12 03:32		Oct-09-12 03:48		Oct-09-12 05:41		Oct-09-12 06:13		Oct-09-12 06:29		Oct-09-12 06:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		417	11.2	1650	12.2	540	11.4	1480	10.1	3170	11.0	859	11.5
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-10-12 15:38		Oct-10-12 15:38		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		10.5	1.00	13.9	1.00	6.35	1.00	8.53	1.00	7.39	1.00	4.85	1.00
TPH By SW8015B Mod	***Extracted:***	Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10	
	Analyzed:	Oct-10-12 02:46		Oct-10-12 03:17		Oct-10-12 03:54		Oct-10-12 16:02		Oct-10-12 16:30		Oct-10-12 05:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		ND	16.7	ND	17.4	ND	16.0	117	82.0	ND	80.9	22.5	15.8
C10-C28 Diesel Range Hydrocarbons		26.8	16.7	72.3	17.4	115	16.0	10800	82.0	14200	80.9	1400	15.8
Total TPH		26.8	16.7	72.3	17.4	115	16.0	11600	82.0	15000	80.9	1530	15.8

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Nicholas Straccione
Project Manager

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested													
	Lab Id:	450292-025		450292-026		450292-027		450292-028		450292-029		450292-030	
	Field Id:	BS-10 (8')		BS-9 (8')		SW-12 (4')		BS-8 (6')		BS-11 (4')		BS-12 (5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-04-12 12:04		Oct-04-12 12:07		Oct-04-12 12:15		Oct-04-12 12:27		Oct-04-12 12:35		Oct-04-12 12:38	
BTEX by EPA 8021B	***Extracted:***	Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 08:30		Oct-09-12 15:15		Oct-09-12 15:15	
	Analyzed:	Oct-09-12 13:03		Oct-09-12 13:17		Oct-09-12 13:32		Oct-09-12 13:47		Oct-09-12 18:29		Oct-09-12 18:44	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00113	ND	0.00117	ND	0.00108	ND	0.00116	ND	0.00117	ND	0.00116
Toluene		ND	0.00226	ND	0.00234	ND	0.00216	ND	0.00232	ND	0.00235	ND	0.00232
Ethylbenzene		0.00452	0.00113	0.00470	0.00117	ND	0.00108	ND	0.00116	ND	0.00117	ND	0.00116
m_p-Xylenes		0.0163	0.00226	0.00440	0.00234	ND	0.00216	ND	0.00232	ND	0.00235	ND	0.00232
o-Xylene		0.00674	0.00113	0.00241	0.00117	ND	0.00108	ND	0.00116	ND	0.00117	ND	0.00116
Total Xylenes		0.0230	0.00113	0.00681	0.00117	ND	0.00108	ND	0.00116	ND	0.00117	ND	0.00116
Total BTEX		0.0276	0.00113	0.0115	0.00117	ND	0.00108	ND	0.00116	ND	0.00117	ND	0.00116
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-09-12 07:01		Oct-09-12 07:17		Oct-09-12 08:06		Oct-09-12 08:22		Oct-09-12 08:38		Oct-09-12 08:54	
	Analyzed:	Oct-09-12 07:01		Oct-09-12 07:17		Oct-09-12 08:06		Oct-09-12 08:22		Oct-09-12 08:38		Oct-09-12 08:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2420	12.1	664	10.9	3520	10.2	131	1.25	739	12.4	340	12.3
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50		Oct-10-12 15:50	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		12.1	1.00	15.3	1.00	7.65	1.00	14.3	1.00	14.7	1.00	13.8	1.00
TPH By SW8015B Mod	***Extracted:***	Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10		Oct-09-12 15:10	
	Analyzed:	Oct-10-12 17:01		Oct-10-12 06:35		Oct-10-12 07:10		Oct-10-12 07:45		Oct-10-12 08:54		Oct-10-12 09:25	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons		103	85.2	28.3	17.7	ND	16.2	ND	17.5	ND	17.6	ND	17.4
C10-C28 Diesel Range Hydrocarbons		7700	85.2	3170	17.7	1870	16.2	1260	17.5	1430	17.6	662	17.4
Total TPH		8210	85.2	3400	17.7	2050	16.2	1390	17.5	1560	17.6	714	17.4

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Nicholas Straccione
Project Manager

Certificate of Analysis Summary 450292

Larson & Associates, Midland, TX

Project Name: Chamberlain

Project Id:
Contact: Coty Woolf
Project Location:

Date Received in Lab: Fri Oct-05-12 11:15 am
Report Date: 25-OCT-12
Project Manager: Nicholas Straccione

Analysis Requested							
	Lab Id:	450292-031					
	Field Id:	BS-13 (3')					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Oct-04-12 12:45					
BTEX by EPA 8021B	***Extracted:***	Oct-09-12 15:15					
	Analyzed:	Oct-09-12 19:13					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00116				
Toluene		ND	0.00232				
Ethylbenzene		ND	0.00116				
m_p-Xylenes		ND	0.00232				
o-Xylene		ND	0.00116				
Total Xylenes		ND	0.00116				
Total BTEX		ND	0.00116				
Inorganic Anions by EPA 300/300.1 SUB: TX104704215	***Extracted:***	Oct-09-12 09:10					
	Analyzed:	Oct-09-12 09:10					
	Units/RL:	mg/kg	RL				
Chloride		2190	12.6				
Percent Moisture	***Extracted:***						
	Analyzed:	Oct-10-12 15:50					
	Units/RL:	%	RL				
Percent Moisture		13.9	1.00				
TPH By SW8015B Mod	***Extracted:***	Oct-09-12 15:10					
	Analyzed:	Oct-10-12 09:55					
	Units/RL:	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		ND	17.4				
C10-C28 Diesel Range Hydrocarbons		813	17.4				
Total TPH		887	17.4				

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Nicholas Straccione
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

* Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898279 **Sample:** 450292-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 14:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 898279 **Sample:** 450292-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 14:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 898279 **Sample:** 450292-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 14:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 898279 **Sample:** 450292-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 14:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 898279 **Sample:** 450292-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 15:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898279 **Sample:** 450292-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 15:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

Lab Batch #: 898279 **Sample:** 450292-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 15:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 898279 **Sample:** 450292-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 16:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 898279 **Sample:** 450292-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 16:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 898279 **Sample:** 450292-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 16:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898279 **Sample:** 450292-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 16:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 898279 **Sample:** 450292-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 17:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 898279 **Sample:** 450292-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 17:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 898304 **Sample:** 450292-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 19:32

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	40.5	50.0	81	70-135	

Lab Batch #: 898304 **Sample:** 450292-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 20:39

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	99.7	86	70-135	
o-Terphenyl	45.4	49.9	91	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898304 **Sample:** 450292-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 21:13

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.2	99.9	84	70-135	
o-Terphenyl	41.3	50.0	83	70-135	

Lab Batch #: 898304 **Sample:** 450292-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 21:46

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	99.7	86	70-135	
o-Terphenyl	42.4	49.9	85	70-135	

Lab Batch #: 898304 **Sample:** 450292-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 22:19

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.6	84	70-135	
o-Terphenyl	41.9	49.8	84	70-135	

Lab Batch #: 898304 **Sample:** 450292-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 23:25

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.4	99.7	86	70-135	
o-Terphenyl	41.9	49.9	84	70-135	

Lab Batch #: 898304 **Sample:** 450292-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 23:58

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.0	100	86	70-135	
o-Terphenyl	42.6	50.1	85	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898304 **Sample:** 450292-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 01:04

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.4	100	86	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 898304 **Sample:** 450292-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 01:37

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.6	99.6	87	70-135	
o-Terphenyl	42.6	49.8	86	70-135	

Lab Batch #: 898304 **Sample:** 450292-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 02:10

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.3	50.0	91	70-135	

Lab Batch #: 898304 **Sample:** 450292-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 02:42

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.6	99.8	85	70-135	
o-Terphenyl	42.0	49.9	84	70-135	

Lab Batch #: 898304 **Sample:** 450292-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 03:15

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.8	100	86	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898304 **Sample:** 450292-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 03:47

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.3	99.7	89	70-135	
o-Terphenyl	42.7	49.9	86	70-135	

Lab Batch #: 898304 **Sample:** 450292-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 04:19

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	99.9	88	70-135	
o-Terphenyl	42.6	50.0	85	70-135	

Lab Batch #: 898304 **Sample:** 450292-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 04:52

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.7	88	70-135	
o-Terphenyl	43.0	49.9	86	70-135	

Lab Batch #: 898304 **Sample:** 450292-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 05:24

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	48.2	49.9	97	70-135	

Lab Batch #: 898393 **Sample:** 450292-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 10:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898393 **Sample:** 450292-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 10:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 898393 **Sample:** 450292-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 10:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 898393 **Sample:** 450292-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 10:49

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 898393 **Sample:** 450292-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:04

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 898393 **Sample:** 450292-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0262	0.0300	87	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898304 **Sample:** 450292-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:21

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	99.9	96	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

Lab Batch #: 898393 **Sample:** 450292-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 898393 **Sample:** 450292-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 898304 **Sample:** 450292-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 11:50

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.9	92	70-135	
o-Terphenyl	42.8	50.0	86	70-135	

Lab Batch #: 898393 **Sample:** 450292-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 12:48

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898393 **Sample:** 450292-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 13:03

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 898393 **Sample:** 450292-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 13:17

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 898393 **Sample:** 450292-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 13:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0264	0.0300	88	80-120	

Lab Batch #: 898393 **Sample:** 450292-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 13:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 898393 **Sample:** 450292-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 14:02

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0193	0.0300	64	80-120	***
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898393 **Sample:** 450292-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 14:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0211	0.0300	70	80-120	***
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 898398 **Sample:** 450292-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 18:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0256	0.0300	85	80-120	

Lab Batch #: 898398 **Sample:** 450292-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 18:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 898398 **Sample:** 450292-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 19:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 898513 **Sample:** 450292-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 02:46

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.1	99.6	84	70-135	
o-Terphenyl	40.7	49.8	82	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898513 **Sample:** 450292-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 03:17

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	100	90	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 898513 **Sample:** 450292-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 03:54

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.9	99.7	85	70-135	
o-Terphenyl	41.4	49.9	83	70-135	

Lab Batch #: 898513 **Sample:** 450292-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 05:33

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	100	90	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 898513 **Sample:** 450292-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 06:35

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	100	92	70-135	
o-Terphenyl	46.1	50.1	92	70-135	

Lab Batch #: 898513 **Sample:** 450292-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 07:10

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.5	100	87	70-135	
o-Terphenyl	42.0	50.0	84	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898513 **Sample:** 450292-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 07:45

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.8	100	89	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 898513 **Sample:** 450292-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 08:54

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	100	91	70-135	
o-Terphenyl	45.9	50.2	91	70-135	

Lab Batch #: 898513 **Sample:** 450292-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 09:25

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.8	94	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

Lab Batch #: 898513 **Sample:** 450292-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 09:55

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	99.8	96	70-135	
o-Terphenyl	48.3	49.9	97	70-135	

Lab Batch #: 898513 **Sample:** 450292-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 16:02

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	41.0	50.0	82	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898513 **Sample:** 450292-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 16:30

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	37.7	50.0	75	70-135	

Lab Batch #: 898513 **Sample:** 450292-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 17:01

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	53.6	50.0	107	70-135	

Lab Batch #: 898279 **Sample:** 628289-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 13:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 898304 **Sample:** 628306-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 18:30

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.5	99.8	91	70-135	
o-Terphenyl	44.8	49.9	90	70-135	

Lab Batch #: 898393 **Sample:** 628362-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 09:48

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898398 **Sample:** 628365-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 16:15

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 898513 **Sample:** 628376-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/10/12 02:07

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.8	93	70-135	
o-Terphenyl	45.3	49.9	91	70-135	

Lab Batch #: 898279 **Sample:** 628289-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 12:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 898304 **Sample:** 628306-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 17:32

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.1	99.8	97	70-135	
o-Terphenyl	51.9	49.9	104	70-135	

Lab Batch #: 898393 **Sample:** 628362-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 09:19

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898398 **Sample:** 628365-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 15:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 898513 **Sample:** 628376-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/10/12 01:00

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.8	100	96	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 898279 **Sample:** 628289-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 12:43

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 898304 **Sample:** 628306-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/08/12 18:02

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.3	100	95	70-135	
o-Terphenyl	50.8	50.1	101	70-135	

Lab Batch #: 898393 **Sample:** 628362-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 09:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898398 **Sample:** 628365-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/09/12 16:00

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 898513 **Sample:** 628376-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/10/12 01:37

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.6	97	70-135	
o-Terphenyl	50.8	49.8	102	70-135	

Lab Batch #: 898279 **Sample:** 450292-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 18:03

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 898304 **Sample:** 450292-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 06:28

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	100	93	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 898393 **Sample:** 450292-016 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 14:32

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898398 **Sample:** 450295-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 19:28

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 898513 **Sample:** 450295-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 14:30

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.6	50.2	101	70-135	

Lab Batch #: 898279 **Sample:** 450292-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/08/12 18:18

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 898304 **Sample:** 450292-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 06:59

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.8	100	94	70-135	
o-Terphenyl	49.5	50.0	99	70-135	

Lab Batch #: 898393 **Sample:** 450292-016 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 14:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Chamberlain

Work Orders : 450292,

Project ID:

Lab Batch #: 898398 **Sample:** 450295-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/09/12 19:43

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 898513 **Sample:** 450295-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/10/12 14:58

TPH By SW8015B Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Chamberlain

Work Order #: 450292 **Project ID:**

Analyst: KEB **Date Prepared:** 10/08/2012 **Date Analyzed:** 10/08/2012

Lab Batch ID: 898279 **Sample:** 628289-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0838	84	0.100	0.0844	84	1	70-130	35	
Toluene	<0.00200	0.100	0.0845	85	0.100	0.0887	89	5	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0823	82	0.100	0.0847	85	3	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.174	87	0.200	0.180	90	3	70-135	35	
o-Xylene	<0.00100	0.100	0.0833	83	0.100	0.0879	88	5	71-133	35	

Analyst: KEB **Date Prepared:** 10/09/2012 **Date Analyzed:** 10/09/2012

Lab Batch ID: 898393 **Sample:** 628362-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000996	0.0996	0.0799	80	0.100	0.0819	82	2	70-130	35	
Toluene	<0.00199	0.0996	0.0805	81	0.100	0.0833	83	3	70-130	35	
Ethylbenzene	<0.000996	0.0996	0.0798	80	0.100	0.0824	82	3	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.170	85	0.200	0.174	87	2	70-135	35	
o-Xylene	<0.000996	0.0996	0.0842	85	0.100	0.0862	86	2	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Chamberlain

Work Order #: 450292 **Project ID:**

Analyst: KEB **Date Prepared:** 10/09/2012 **Date Analyzed:** 10/09/2012

Lab Batch ID: 898398 **Sample:** 628365-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000994	0.0994	0.104	105	0.100	0.0814	81	24	70-130	35	
Toluene	<0.00199	0.0994	0.106	107	0.100	0.0808	81	27	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.105	106	0.100	0.0802	80	27	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.223	112	0.201	0.171	85	26	70-135	35	
o-Xylene	<0.000994	0.0994	0.108	109	0.100	0.0844	84	25	71-133	35	

Analyst: TTE **Date Prepared:** 10/08/2012 **Date Analyzed:** 10/08/2012

Lab Batch ID: 898338 **Sample:** 628331-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.996	99.6	97.2	98	102	102	100	5	80-120	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: Chamberlain

Work Order #: 450292 **Project ID:**

Analyst: TTE **Date Prepared:** 10/09/2012 **Date Analyzed:** 10/09/2012

Lab Batch ID: 898339 **Sample:** 628332-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.996	99.6	96.2	97	102	99.9	98	4	80-120	20	

Analyst: KEB **Date Prepared:** 10/08/2012 **Date Analyzed:** 10/08/2012

Lab Batch ID: 898304 **Sample:** 628306-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<49.9	998	1000	100	1000	992	99	1	70-135	35	
C10 - C28 Diesel Range Hydrocarbons	<49.9	998	1070	107	1000	1030	103	4	70-135	35	

Analyst: KEB **Date Prepared:** 10/09/2012 **Date Analyzed:** 10/10/2012

Lab Batch ID: 898513 **Sample:** 628376-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<50.0	1000	946	95	996	928	93	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<50.0	1000	968	97	996	943	95	3	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: Chamberlain

Work Order #: 450292

Lab Batch #: 898338 **Project ID:**

Date Analyzed: 10/08/2012 **Date Prepared:** 10/08/2012 **Analyst:** TTE

QC- Sample ID: 450292-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1510	1020	2550	102	80-120	

Lab Batch #: 898338

Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** TTE

QC- Sample ID: 450292-020 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1650	1220	2850	98	80-120	

Lab Batch #: 898339

Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** TTE

QC- Sample ID: 450292-021 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	540	1140	1670	99	80-120	

Lab Batch #: 898339

Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** TTE

QC- Sample ID: 450292-031 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	2190	1260	3440	99	80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: Chamberlain

Work Order # : 450292 **Project ID:**

Lab Batch ID: 898279 **QC- Sample ID:** 450292-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/08/2012 **Date Prepared:** 10/08/2012 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00108	0.108	0.0945	88	0.108	0.0844	78	11	70-130	35	
Toluene	<0.00216	0.108	0.0966	89	0.108	0.0865	80	11	70-130	35	
Ethylbenzene	<0.00108	0.108	0.0911	84	0.108	0.0817	76	11	71-129	35	
m_p-Xylenes	<0.00216	0.216	0.193	89	0.215	0.171	80	12	70-135	35	
o-Xylene	<0.00108	0.108	0.0954	88	0.108	0.0841	78	13	71-133	35	

Lab Batch ID: 898393 **QC- Sample ID:** 450292-016 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** KEB

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00116	0.116	0.0937	81	0.115	0.0843	73	11	70-130	35	
Toluene	<0.00232	0.116	0.0977	84	0.115	0.0870	76	12	70-130	35	
Ethylbenzene	<0.00116	0.116	0.0848	73	0.115	0.0756	66	11	71-129	35	X
m_p-Xylenes	<0.00232	0.232	0.173	75	0.230	0.155	67	11	70-135	35	X
o-Xylene	<0.00116	0.116	0.0898	77	0.115	0.0788	69	13	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Form 3 - MS / MSD Recoveries

Project Name: Chamberlain

Work Order # : 450292 **Project ID:**

Lab Batch ID: 898398 **QC- Sample ID:** 450295-002 S **Batch #:** 1 **Matrix:** Soil
Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** KEB
Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00109	0.109	0.0836	77	0.109	0.0899	82	7	70-130	35	
Toluene	<0.00218	0.109	0.0893	82	0.109	0.0930	85	4	70-130	35	
Ethylbenzene	<0.00109	0.109	0.0782	72	0.109	0.0863	79	10	71-129	35	
m_p-Xylenes	<0.00218	0.218	0.159	73	0.218	0.179	82	12	70-135	35	
o-Xylene	<0.00109	0.109	0.0772	71	0.109	0.0883	81	13	71-133	35	

Lab Batch ID: 898304 **QC- Sample ID:** 450292-004 S **Batch #:** 1 **Matrix:** Soil
Date Analyzed: 10/09/2012 **Date Prepared:** 10/09/2012 **Analyst:** KEB
Reporting Units: mg/kg

TPH By SW8015B Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C10 Gasoline Range Hydrocarbons	<54.2	1080	1040	96	1080	1050	97	1	70-135	35	
C10 - C28 Diesel Range Hydrocarbons	<54.2	1080	1110	103	1080	1110	103	0	70-135	35	

Lab Batch ID: 898513 **QC- Sample ID:** 450295-002 S **Batch #:** 1 **Matrix:** Soil
Date Analyzed: 10/10/2012 **Date Prepared:** 10/09/2012 **Analyst:** KEB
Reporting Units: mg/kg

TPH By SW8015B Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C10 Gasoline Range Hydrocarbons	<54.3	1090	1090	100	1080	1050	97	4	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<54.3	1090	1050	96	1080	1050	97	0	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Chamberlain

Work Order #: 450292

Lab Batch #: 898413 **Project ID:**

Date Analyzed: 10/09/2012 13:50 **Date Prepared:** 10/09/2012 **Analyst:** WRU

QC- Sample ID: 450295-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.39	5.51	2	15	

Lab Batch #: 898536

Date Analyzed: 10/10/2012 15:50 **Date Prepared:** 10/10/2012 **Analyst:** WRU

QC- Sample ID: 450292-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6.35	6.29	1	15	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 10-04-12 PAGE 1 OF 3
PO #: _____ LAB WORK ORDER #: 450292
PROJECT LOCATION OR NAME: CHAMBERLIN
LAI PROJECT #: 12-0126-01 COLLECTOR: R. BROOKS
Data Reported to: Cory WOOLF

TRRP report? ☐ Yes ☐ No
TIME ZONE: Time zone/State: MST/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date (2010)	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX X MTBE ☐ 8021B	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 X	DIESEL - MOD 8015 X	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE X ANIONS ☐ ALKALINITY ☐ 300	FIELD NOTES
BS-3 (14')		10-4	09:20	S	1				X		X		X	X													X	
BS-17 (15')			09:34																									
BS-15 (10')			09:50																									
SW-7 (4')			10:00																									
BS-19 (6')			10:05																									
BS-18 (4')			10:15																									
SW-8 (4')			10:20																									
BS-16 (6')			10:28																									
SW-9 (4')			10:30																									
BS-14 (9')			10:37																									
SW-6 (4')			10:40																									
SW-10 (3')			10:48																									
SW-5 (4')			11:05																									
SW-4 (4')			11:12																									
BS-7 (4')			11:17																									
TOTAL																												

RELINQUISHED BY:(Signature) R.W. Brooks DATE/TIME 10-5-12 11:15 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 10-5-12 11:15 RECEIVED BY: (Signature) Shaunelson HP

TURN AROUND TIME
NORMAL X
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: -1 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 10-04-12 PAGE 2 OF 3
PO #: _____ LAB WORK ORDER #: 450292
PROJECT LOCATION OR NAME: CHAMBERLIN
LAI PROJECT #: 12-0126-01 COLLECTOR: R. BROOKS
Data Reported to: Cory WOOLF

TRRP report? ☐ Yes ☐ No
TIME ZONE: Time zone/State: MST/NM
S=SOIL P=PAINT W=WATER SL=SLUDGE A=AIR OT=OTHER

Field Sample I.D.	Lab #	2012 Date	Time	Matrix	# of Containers	PRESERVATION HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES BTEX X MTBE ☐ 8021B	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 X	DIESEL - MOD 8015 X	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE X ANIONS ☐ ALKALINITY ☐ 300	FIELD NOTES
BS-6 (6')		10-04	11:20	S	1				X		X		X	X													X	
BS-5 (8')			11:30																									
BS-4 (10')			11:40																									
SW-3 (4')			11:41																									
SW-2 (4')			11:45																									
SW-1 (4')			11:49																									
BS-1 (8')			11:52																									
BS-2 (8')			11:58																									
SW-11 (1')			12:00																									
BS-10 (8')			12:04																									
BS-9 (8')			12:07																									
SW-12 (4')			12:15																									
BS-8 (6')			12:27																									
BS-11 (4')			12:35																									
BS-12 (5')			12:38																									
TOTAL																												

RELINQUISHED BY:(Signature) R.W. Brooks DATE/TIME 10-4-12 11:15 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 10/5/12 11:15 RECEIVED BY: (Signature) Shawnee Smith

TURN AROUND TIME
NORMAL X
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: -1 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 10-04-12 PAGE 3 OF 3
PO #: _____ LAB WORK ORDER #: 450292
PROJECT LOCATION OR NAME: CHAMBERLIN
LAI PROJECT #: 12-0126-01 COLLECTOR: R. BROOKS
Data Reported to: COTY WOOLF

TRRP report? ☐ Yes ☐ No
TIME ZONE: Time zone/State: MST/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐ 8021B	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ 300	FIELD NOTES
BS-6 (6')		10-04	12:45	S	1				X		X	X	X														X	
TOTAL																												

RELINQUISHED BY:(Signature) K.W. Brooks DATE/TIME 10-4-12 11:15 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 10/5/12 11:15 RECEIVED BY: (Signature) Shawnee Smith

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ _____

LABORATORY USE ONLY:
RECEIVING TEMP: -1 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson & Associates

Date/ Time Received: 10/05/2012 11:15:00 AM

Work Order #: 450292

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6.5
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**Yes**
#6 *Custody Seals Signed and dated?	**Yes**
#7 *Chain of Custody present?	**Yes**
#8 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**Yes**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	**Yes**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:	PH Device/Lot#:

Checklist completed by: _____ Date: _____

Checklist reviewed by: _____ Date: _____

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: March 22, 2013

Work Order: 13031401

Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323401	BH-1 15-16'	soil	2013-03-12	13:20	2013-03-14
323402	BH-1 20-22'	soil	2013-03-12	14:25	2013-03-14
323403	BH-1 22-23'	soil	2013-03-12	14:25	2013-03-14
323404	BH-1 25-26'	soil	2013-03-13	09:15	2013-03-14
323405	BH-1 30-32'	soil	2013-03-13	09:25	2013-03-14
323406	BH-1 32-34'	soil	2013-03-13	09:25	2013-03-14
323407	BH-1 34-35'	soil	2013-03-13	09:25	2013-03-14
323408	BH-1 35-37'	soil	2013-03-13	09:50	2013-03-14
323409	BH-1 37-38'	soil	2013-03-13	09:50	2013-03-14
323410	BH-1 40-42'	soil	2013-03-13	10:10	2013-03-14
323411	BH-1 42-43'	soil	2013-03-13	10:10	2013-03-14
323412	BH-2 17-18'	soil	2013-03-13	11:40	2013-03-14
323413	BH-2 18-20'	soil	2013-03-13	11:55	2013-03-14
323414	BH-2 23-25'	soil	2013-03-13	13:00	2013-03-14
323415	BH-2 28-30'	soil	2013-03-13	13:10	2013-03-14
323416	BH-2 30-31.5'	soil	2013-03-13	13:10	2013-03-14
323417	BH-2 33-35'	soil	2013-03-13	13:55	2013-03-14
323418	BH-2 35-37'	soil	2013-03-13	13:55	2013-03-14

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323419	BH-2 38-40’	soil	2013-03-13	14:15	2013-03-14

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 58 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-03-14 and assigned to work order 13031401. Samples for work order 13031401 were received intact at a temperature of 2.8 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84509	2013-03-15 at 14:31	99751	2013-03-15 at 14:31
Chloride (IC)	E 300.0	84607	2013-03-20 at 10:00	99869	2013-03-20 at 11:41
Chloride (IC)	E 300.0	84608	2013-03-20 at 10:00	99870	2013-03-20 at 11:41
TPH DRO - NEW	S 8015 D	84569	2013-03-18 at 12:00	99819	2013-03-19 at 11:25
TPH GRO	S 8015 D	84509	2013-03-15 at 14:31	99754	2013-03-15 at 14:31
TPH GRO	S 8015 D	84578	2013-03-19 at 14:36	99830	2013-03-19 at 14:36
TPH GRO	S 8015 D	84579	2013-03-19 at 14:36	99832	2013-03-19 at 14:36
TPH ORO	S 8015 D	84569	2013-03-18 at 12:00	99820	2013-03-19 at 11:26

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13031401 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 323401 - BH-1 15-16'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [1]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.245**	mg/Kg	5	0.0200
Ethylbenzene	U	1	<0.100	mg/Kg	5	0.0200
Xylene		1	**2.70**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	5	2.00	79	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.43	mg/Kg	5	2.00	72	69.2 - 120

Sample: 323401 - BH-1 15-16'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs	1	**7220**	mg/Kg	50	25.0

Sample: 323401 - BH-1 15-16'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**144**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	35.2 - 240

Sample: 323401 - BH-1 15-16'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**120**	mg/Kg	5	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.841	mg/Kg	5	2.00	42	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		6.37	mg/Kg	5	2.00	318	77.7 - 120

Sample: 323401 - BH-1 15-16'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	71.7 - 148
n-Triacontane			66.8	mg/Kg	1	100	67	46.7 - 188

Sample: 323402 - BH-1 20-22'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [2]	Jb	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.635**	mg/Kg	5	0.0200
Ethylbenzene		1	**5.66**	mg/Kg	5	0.0200
Xylene		1	**16.4**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	5	2.00	116	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	5	2.00	107	69.2 - 120

Sample: 323402 - BH-1 20-22'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**856**	mg/Kg	5	25.0

Sample: 323402 - BH-1 20-22'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**251**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.3	mg/Kg	1	100	98	35.2 - 240

Sample: 323402 - BH-1 20-22'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**254**	mg/Kg	5	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.02	mg/Kg	5	2.00	51	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		6.83	mg/Kg	5	2.00	342	77.7 - 120

Sample: 323402 - BH-1 20-22'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.3	mg/Kg	1	100	98	71.7 - 148
n-Triacontane			64.7	mg/Kg	1	100	65	46.7 - 188

Sample: 323403 - BH-1 22-23'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	3	Jb	1	<0.200	mg/Kg	10	0.0200
Toluene			1	**0.496**	mg/Kg	10	0.0200
Ethylbenzene			1	**4.34**	mg/Kg	10	0.0200
Xylene			1	**12.3**	mg/Kg	10	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				2.20	mg/Kg	10	2.00	110	69.6 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2.86	mg/Kg	10	2.00	143	69.2 - 120

Sample: 323403 - BH-1 22-23'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs	1	**2590**	mg/Kg	5	25.0

Sample: 323403 - BH-1 22-23'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**426**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	35.2 - 240

Sample: 323403 - BH-1 22-23'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**203**	mg/Kg	10	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.21	mg/Kg	10	2.00	60	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		5.88	mg/Kg	10	2.00	294	77.7 - 120

Sample: 323403 - BH-1 22-23'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	71.7 - 148
n-Triacontane			81.1	mg/Kg	1	100	81	46.7 - 188

Sample: 323404 - BH-1 25-26'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [4]	U	1	<0.0400	mg/Kg	2	0.0200
Toluene		1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene		1	**0.117**	mg/Kg	2	0.0200
Xylene		1	**0.378**	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	2	2.00	91	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	2	2.00	93	69.2 - 120

Sample: 323404 - BH-1 25-26'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323404 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**561**	mg/Kg	5	25.0

Sample: 323404 - BH-1 25-26'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**54.0**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323404 - BH-1 25-26'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**12.1**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.61	mg/Kg	2	2.00	80	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.36	mg/Kg	2	2.00	118	77.7 - 120

Sample: 323404 - BH-1 25-26'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	71.7 - 148
n-Triacontane			74.8	mg/Kg	1	100	75	46.7 - 188

Sample: 323405 - BH-1 30-32'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [5]	U	1	<0.200	mg/Kg	10	0.0200
Toluene		1	<0.200	mg/Kg	10	0.0200
Ethylbenzene		1	**0.681**	mg/Kg	10	0.0200
Xylene		1	**2.07**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	10	2.00	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.24	mg/Kg	10	2.00	112	69.2 - 120

Sample: 323405 - BH-1 30-32'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323405 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**2550**	mg/Kg	5	25.0

Sample: 323405 - BH-1 30-32'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**105**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323405 - BH-1 30-32'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**58.9**	mg/Kg	10	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.48	mg/Kg	10	2.00	74	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	10	2.00	79	77.7 - 120

Sample: 323405 - BH-1 30-32'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	71.7 - 148
n-Triacontane			76.1	mg/Kg	1	100	76	46.7 - 188

Sample: 323406 - BH-1 32-34'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	**0.0366**	mg/Kg	1	0.0200
Xylene		1	**0.122**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	1	2.00	114	69.2 - 120

Sample: 323406 - BH-1 32-34'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323406 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**3050**	mg/Kg	5	25.0

Sample: 323406 - BH-1 32-34'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**53.7**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			124	mg/Kg	1	100	124	35.2 - 240

Sample: 323406 - BH-1 32-34'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	77.7 - 120

Sample: 323406 - BH-1 32-34'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			124	mg/Kg	1	100	124	71.7 - 148
n-Triacontane			89.3	mg/Kg	1	100	89	46.7 - 188

Sample: 323407 - BH-1 34-35'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	<0.0200	mg/Kg	1	0.0200
Xylene	B	1	**0.0255**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.78	mg/Kg	1	2.00	89	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	69.2 - 120

Sample: 323407 - BH-1 34-35'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323407 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**2550**	mg/Kg	5	25.0

Sample: 323407 - BH-1 34-35'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			102	mg/Kg	1	100	102	35.2 - 240

Sample: 323407 - BH-1 34-35'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	77.7 - 120

Sample: 323407 - BH-1 34-35'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	71.7 - 148
n-Triacontane			69.6	mg/Kg	1	100	70	46.7 - 188

Sample: 323408 - BH-1 35-37'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**2060**	mg/Kg	5	25.0

Sample: 323408 - BH-1 35-37'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**123**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	35.2 - 240

Sample: 323408 - BH-1 35-37'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.48	mg/Kg	1	2.00	74	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.56	mg/Kg	1	2.00	78	77.7 - 120

Sample: 323408 - BH-1 35-37'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			107	mg/Kg	1	100	107	71.7 - 148
n-Triacontane			74.3	mg/Kg	1	100	74	46.7 - 188

Sample: 323409 - BH-1 37-38'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**2270**	mg/Kg	5	25.0

Sample: 323409 - BH-1 37-38'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**435**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			142	mg/Kg	1	100	142	35.2 - 240

Sample: 323409 - BH-1 37-38'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99830	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84578	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**18.8**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.61	mg/Kg	2	2.00	80	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.73	mg/Kg	2	2.00	136	77.7 - 120

Sample: 323409 - BH-1 37-38'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			142	mg/Kg	1	100	142	71.7 - 148

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			105	mg/Kg	1	100	105	46.7 - 188

Sample: 323410 - BH-1 40-42'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99869	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84607	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Qs	1	**2360**	mg/Kg	5	25.0

Sample: 323410 - BH-1 40-42'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	35.2 - 240

Sample: 323410 - BH-1 40-42'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	77.7 - 120

Sample: 323410 - BH-1 40-42'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	71.7 - 148
n-Triacontane			72.6	mg/Kg	1	100	73	46.7 - 188

Sample: 323411 - BH-1 42-43'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**2380**	mg/Kg	5	25.0

Sample: 323411 - BH-1 42-43'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323411 - BH-1 42-43'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**42.8**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	2	2.00	83	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	5.83	mg/Kg	2	2.00	292	77.7 - 120

Sample: 323411 - BH-1 42-43'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	71.7 - 148
n-Triacontane			77.5	mg/Kg	1	100	78	46.7 - 188

Sample: 323412 - BH-2 17-18'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	B	1	**0.0200**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.89	mg/Kg	1	2.00	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.26	mg/Kg	1	2.00	113	69.2 - 120

Sample: 323412 - BH-2 17-18'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1150**	mg/Kg	5	25.0

Sample: 323412 - BH-2 17-18'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**59.1**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	35.2 - 240

Sample: 323412 - BH-2 17-18'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.15	mg/Kg	1	2.00	108	77.7 - 120

Sample: 323412 - BH-2 17-18'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	71.7 - 148
n-Triacontane			75.7	mg/Kg	1	100	76	46.7 - 188

Sample: 323413 - BH-2 18-20'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [6]	Jb	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.436**	mg/Kg	5	0.0200
Ethylbenzene		1	**3.56**	mg/Kg	5	0.0200
Xylene		1	**22.6**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	2.58	mg/Kg	5	2.00	129	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.34	mg/Kg	5	2.00	117	69.2 - 120

Sample: 323413 - BH-2 18-20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs	1	**1250**	mg/Kg	5	25.0

Sample: 323413 - BH-2 18-20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**499**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	35.2 - 240

Sample: 323413 - BH-2 18-20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**380**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.55	mg/Kg	5	2.00	78	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	13.8	mg/Kg	5	2.00	690	77.7 - 120

Sample: 323413 - BH-2 18-20'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	71.7 - 148
n-Triacontane			87.9	mg/Kg	1	100	88	46.7 - 188

Sample: 323414 - BH-2 23-25'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [7]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.181**	mg/Kg	5	0.0200
Ethylbenzene		1	**2.31**	mg/Kg	5	0.0200
Xylene		1	**3.60**	mg/Kg	5	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.56	mg/Kg	5	2.00	128	69.6 - 120
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2.71	mg/Kg	5	2.00	136	69.2 - 120

Sample: 323414 - BH-2 23-25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323414 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1020**	mg/Kg	5	25.0

Sample: 323414 - BH-2 23-25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**178**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	35.2 - 240

Sample: 323414 - BH-2 23-25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**122**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	5	2.00	99	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	4.96	mg/Kg	5	2.00	248	77.7 - 120

Sample: 323414 - BH-2 23-25'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	71.7 - 148
n-Triacontane			80.0	mg/Kg	1	100	80	46.7 - 188

Sample: 323415 - BH-2 28-30'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene		1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		1	**0.0257**	mg/Kg	1	0.0200
Xylene	B	1	**0.0808**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	69.6 - 120
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	69.2 - 120

Sample: 323415 - BH-2 28-30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323415 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**778**	mg/Kg	5	25.0

Sample: 323415 - BH-2 28-30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323415 - BH-2 28-30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	77.7 - 120

Sample: 323415 - BH-2 28-30'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	71.7 - 148
n-Triacontane			81.4	mg/Kg	1	100	81	46.7 - 188

Sample: 323416 - BH-2 30-31.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	Jb	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	69.2 - 120

Sample: 323416 - BH-2 30-31.5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323416 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**576**	mg/Kg	5	25.0

Sample: 323416 - BH-2 30-31.5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	35.2 - 240

Sample: 323416 - BH-2 30-31.5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.61	mg/Kg	1	2.00	80	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	77.7 - 120

Sample: 323416 - BH-2 30-31.5'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	71.7 - 148
n-Triacontane			82.5	mg/Kg	1	100	82	46.7 - 188

Sample: 323417 - BH-2 33-35'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	99751	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	Jb	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	1	2.00	95	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	99	69.2 - 120

Sample: 323417 - BH-2 33-35'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

continued ...

sample 323417 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**920**	mg/Kg	5	25.0

Sample: 323417 - BH-2 33-35'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	35.2 - 240

Sample: 323417 - BH-2 33-35'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	77.7 - 120

Sample: 323417 - BH-2 33-35'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	71.7 - 148
n-Triacontane			77.7	mg/Kg	1	100	78	46.7 - 188

Sample: 323418 - BH-2 35-37'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1310**	mg/Kg	5	25.0

Sample: 323418 - BH-2 35-37'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**62.1**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323418 - BH-2 35-37'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99830	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84578	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.03	mg/Kg	1	2.00	102	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	77.7 - 120

Sample: 323418 - BH-2 35-37'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	71.7 - 148
n-Triacontane			79.5	mg/Kg	1	100	80	46.7 - 188

Sample: 323419 - BH-2 38-40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99870	Date Analyzed:	2013-03-20	Analyzed By:	RL
Prep Batch:	84608	Sample Preparation:	2013-03-20	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1240**	mg/Kg	5	25.0

Sample: 323419 - BH-2 38-40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99819	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	35.2 - 240

Sample: 323419 - BH-2 38-40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99754	Date Analyzed:	2013-03-15	Analyzed By:	JS
Prep Batch:	84509	Sample Preparation:	2013-03-15	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	77.7 - 120

Sample: 323419 - BH-2 38-40'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99820	Date Analyzed:	2013-03-19	Analyzed By:	CM
Prep Batch:	84569	Sample Preparation:	2013-03-18	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	71.7 - 148

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			75.6	mg/Kg	1	100	76	46.7 - 188

Method Blanks

Method Blank (1) QC Batch: 99751

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	0.00510	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	0.00810	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	69.2 - 120

Method Blank (1) QC Batch: 99754

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.490	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	77.7 - 120

Method Blank (1) QC Batch: 99819

QC Batch: 99819 | Date Analyzed: 2013-03-19 | Analyzed By: CM
Prep Batch: 84569 | QC Preparation: 2013-03-18 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	35.2 - 240

Method Blank (1) QC Batch: 99820

QC Batch: 99820 Date Analyzed: 2013-03-19 Analyzed By: CM
Prep Batch: 84569 QC Preparation: 2013-03-18 Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			<8.38	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	71.7 - 148
n-Triacontane			50.9	mg/Kg	1	100	51	46.7 - 188

Method Blank (1) QC Batch: 99830

QC Batch: 99830 Date Analyzed: 2013-03-19 Analyzed By: JS
Prep Batch: 84578 QC Preparation: 2013-03-19 Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.458	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	77.7 - 120

Method Blank (1) QC Batch: 99832

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.264	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.67	mg/Kg	1	2.00	84	77.7 - 120

Method Blank (1) QC Batch: 99869

QC Batch: 99869 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84607 | QC Preparation: 2013-03-20 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 99870

QC Batch: 99870 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84608 | QC Preparation: 2013-03-20 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.00	mg/Kg	1	2.00	0.0051	100	74.6 - 120
Toluene		1	1.96	mg/Kg	1	2.00	<0.00416	98	77.1 - 120
Ethylbenzene		1	1.95	mg/Kg	1	2.00	<0.00511	98	75 - 120
Xylene		1	5.82	mg/Kg	1	6.00	0.0081	97	77 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.96	mg/Kg	1	2.00	0.0051	98	74.6 - 120	2	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00416	96	77.1 - 120	3	20
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.00511	96	75 - 120	2	20
Xylene		1	5.75	mg/Kg	1	6.00	0.0081	96	77 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	1.96	mg/Kg	1	2.00	102	98	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.93	1.96	mg/Kg	1	2.00	96	98	69.2 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.0	mg/Kg	1	20.0	0.49	78	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	19.5	mg/Kg	1	20.0	0.49	95	66.9 - 120	20	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.81	mg/Kg	1	2.00	88	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.79	1.84	mg/Kg	1	2.00	90	92	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99819 | Date Analyzed: 2013-03-19 | Analyzed By: CM
Prep Batch: 84569 | QC Preparation: 2013-03-18 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	203	mg/Kg	1	250	<15.3	81	64.8 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	208	mg/Kg	1	250	<15.3	83	64.8 - 138	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	99.5	99.8	mg/Kg	1	100	100	100	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 99820 | Date Analyzed: 2013-03-19 | Analyzed By: CM
Prep Batch: 84569 | QC Preparation: 2013-03-18 | Prepared By: CM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	99.5	99.8	mg/Kg	1	100	100	100	71.7 - 148

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	51.2	52.9	mg/Kg	1	100	51	53	46.7 - 188

Laboratory Control Spike (LCS-1)

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84578 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.5	mg/Kg	1	20.0	0.458	85	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.9	mg/Kg	1	20.0	0.458	87	66.9 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.83	mg/Kg	1	2.00	93	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.88	1.86	mg/Kg	1	2.00	94	93	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	0.264	87	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.0	mg/Kg	1	20.0	0.264	84	66.9 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.75	1.79	mg/Kg	1	2.00	88	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.87	1.89	mg/Kg	1	2.00	94	94	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99869 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84607 | QC Preparation: 2013-03-20 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	259	mg/Kg	1	250	<6.30	104	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	265	mg/Kg	1	250	<6.30	106	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 99870 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84608 | QC Preparation: 2013-03-20 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	265	mg/Kg	1	250	<6.30	106	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	264	mg/Kg	1	250	<6.30	106	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 323409

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.99	mg/Kg	5	2.00	<0.0236	100	68.8 - 120
Toluene		1	1.97	mg/Kg	5	2.00	<0.0208	98	71.8 - 122
Ethylbenzene		1	2.16	mg/Kg	5	2.00	0.257	95	75 - 130
Xylene		1	6.45	mg/Kg	5	6.00	0.754	95	75.4 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.00	mg/Kg	5	2.00	<0.0236	100	68.8 - 120	0	20
Toluene		1	2.00	mg/Kg	5	2.00	<0.0208	100	71.8 - 122	2	20
Ethylbenzene		1	2.15	mg/Kg	5	2.00	0.257	95	75 - 130	0	20
Xylene		1	6.45	mg/Kg	5	6.00	0.754	95	75.4 - 129	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.07	1.99	mg/Kg	5	2	104	100	69.6 - 120
4-Bromofluorobenzene (4-BFB)	2.18	2.20	mg/Kg	5	2	109	110	69.2 - 120

Matrix Spike (MS-1) Spiked Sample: 323409

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS
Prep Batch: 84509 | QC Preparation: 2013-03-15 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	34.1	mg/Kg	5	20.0	18.9	76	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	30.9	mg/Kg	5	20.0	18.9	60	38.8 - 120	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)			1.80	1.87	mg/Kg	5	2	90	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.02	2.89	mg/Kg	5	2	151	144	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 323419

QC Batch: 99819 | Date Analyzed: 2013-03-19 | Analyzed By: CM
Prep Batch: 84569 | QC Preparation: 2013-03-18 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	182	mg/Kg	1	250	<15.3	73	15.5 - 174

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	208	mg/Kg	1	250	<15.3	83	15.5 - 174	13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	96.3	103	mg/Kg	1	100	96	103	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 323419

QC Batch: 99820 | Date Analyzed: 2013-03-19 | Analyzed By: CM
Prep Batch: 84569 | QC Preparation: 2013-03-18 | Prepared By: CM

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	96.3	103	mg/Kg	1	100	96	103	71.7 - 148
n-Triacontane	73.9	75.2	mg/Kg	1	100	74	75	46.7 - 188

Matrix Spike (MS-1) Spiked Sample: 323851

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84578 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.4	mg/Kg	1	20.0	<0.230	77	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.7	mg/Kg	1	20.0	<0.230	78	38.8 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.88	mg/Kg	1	2	94	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.94	1.88	mg/Kg	1	2	97	94	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 84579

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.5	mg/Kg	1	20.0	<0.230	68	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.3	mg/Kg	1	20.0	<0.230	72	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.65	1.76	mg/Kg	1	2	82	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.70	1.79	mg/Kg	1	2	85	90	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 323410

QC Batch: 99869 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84607 | QC Preparation: 2013-03-20 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs 1	3950	mg/Kg	5	1250	2360	127	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Qs	Qs	1 3910	mg/Kg	5	1250	2360	124	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 323419

QC Batch: 99870 | Date Analyzed: 2013-03-20 | Analyzed By: RL
Prep Batch: 84608 | QC Preparation: 2013-03-20 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	Qs	Qs	1 2780	mg/Kg	5	1250	1240	123	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Qs	Qs	1 2800	mg/Kg	5	1250	1240	125	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0984	98	80 - 120	2013-03-15
Toluene		1	mg/kg	0.100	0.0958	96	80 - 120	2013-03-15
Ethylbenzene		1	mg/kg	0.100	0.0960	96	80 - 120	2013-03-15
Xylene		1	mg/kg	0.300	0.288	96	80 - 120	2013-03-15

Standard (CCV-2)

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0972	97	80 - 120	2013-03-15
Toluene		1	mg/kg	0.100	0.0937	94	80 - 120	2013-03-15
Ethylbenzene		1	mg/kg	0.100	0.0938	94	80 - 120	2013-03-15
Xylene		1	mg/kg	0.300	0.276	92	80 - 120	2013-03-15

Standard (CCV-3)

QC Batch: 99751 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0965	96	80 - 120	2013-03-15
Toluene		1	mg/kg	0.100	0.0939	94	80 - 120	2013-03-15
Ethylbenzene		1	mg/kg	0.100	0.0933	93	80 - 120	2013-03-15
Xylene		1	mg/kg	0.300	0.278	93	80 - 120	2013-03-15

Standard (CCV-1)

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.800	80	80 - 120	2013-03-15

Standard (CCV-2)

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.856	86	80 - 120	2013-03-15

Standard (CCV-3)

QC Batch: 99754 | Date Analyzed: 2013-03-15 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.810	81	80 - 120	2013-03-15

Standard (CCV-1)

QC Batch: 99819 | Date Analyzed: 2013-03-19 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	211	84	80 - 120	2013-03-19

Standard (CCV-2)

QC Batch: 99819 | Date Analyzed: 2013-03-19 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	199	80	80 - 120	2013-03-19

Standard (CCV-3)

QC Batch: 99819 Date Analyzed: 2013-03-19 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	202	81	80 - 120	2013-03-19

Standard (CCV-4)

QC Batch: 99819 Date Analyzed: 2013-03-19 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	201	80	80 - 120	2013-03-19

Standard (CCV-1)

QC Batch: 99830 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.919	92	80 - 120	2013-03-19

Standard (CCV-2)

QC Batch: 99830 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.916	92	80 - 120	2013-03-19

Standard (CCV-3)

QC Batch: 99830 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.859	86	80 - 120	2013-03-19

Standard (CCV-1)

QC Batch: 99832 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.884	88	80 - 120	2013-03-19

Standard (CCV-2)

QC Batch: 99832 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.818	82	80 - 120	2013-03-19

Standard (CCV-3)

QC Batch: 99832 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.853	85	80 - 120	2013-03-19

Standard (CCV-1)

QC Batch: 99869 Date Analyzed: 2013-03-20 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.1	100	90 - 110	2013-03-20

Standard (CCV-2)

QC Batch: 99869 Date Analyzed: 2013-03-20 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	26.3	105	90 - 110	2013-03-20

Standard (CCV-1)

QC Batch: 99870 Date Analyzed: 2013-03-20 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	26.3	105	90 - 110	2013-03-20

Standard (CCV-2)

QC Batch: 99870 Date Analyzed: 2013-03-20 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.9	104	90 - 110	2013-03-20

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Sample dilution due to hydrocarbons.
2 Sample dilution due to hydrocarbons.
3 Sample dilution due to hydrocarbons.
4 Sample dilution due to hydrocarbons.
5 Sample dilution due to hydrocarbons.
6 Sample dilution due to hydrocarbons.
7 Sample dilution due to hydrocarbons.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Cody Woolf

DATE: 3-12-13 PAGE 1 OF 2
PO #: _____ LAB WORK ORDER #: 13031401
PROJECT LOCATION OR NAME: Legacy - Chamberlin
LAI PROJECT #: 12-012 6-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MTN / NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 | NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐ | FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4	NaOH	ICE	UNPRESERVED	BTEX	MTBE	TPH 418.1	TPH 1005	TPH 1006	GASOLINE MOD 8015	DIESEL - MOD 8015	VOC 8260	SVOC 8270	PAH 8270	HOLDPAH	8081 PESTICIDES	8151 HERBICIDES	8082 PCBS	TCLP - METALS (RCRA)	TCLP VOC	TCLP - PEST	HERB	Semi-VOC	TOTAL METALS (RCRA)	OTHER LIST	LEAD - TOTAL	D.W. 200.8	TCLP	RCI	TOX	FLASHPOINT	TDS	TSS	% MOISTURE	CYANIDE	pH	HEXAVALENT CHROMIUM	EXPLOSIVES	PECHLORATE	CHLORIDE	ANIONS	ALKALINITY	FIELD NOTES
BH-1, 15-16'	323401	3/12/13	13:20	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 20'-22'	402	3/12/13	14:25	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 22-23'	403	3/12/13	14:25	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 25-26'	404	3/13/13	09:15	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 30-32'	405	3/13/13	09:25	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 32-34'	406	3/13/13	09:25	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 34-35'	407	3/13/13	09:25	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-1, 35-37'	408	3/13/13	0950	S	1					✓			✓	✓	✓		✓	✓																																	
BH-1, 37-38'	409	3/13/13	0950	S	1					✓			✓	✓	✓		✓	✓																																	
BH-1, 40'-42'	410	3/13/13	10:10	S	1					✓			✓	✓	✓		✓	✓																																	
BH-1, 42'-43'	411	3/13/13	10:10	S	1					✓			✓	✓	✓		✓	✓																																	
BH-2, 17'-18'	412	3/13/13	11:40	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-2, 18-20'	413	3/13/13	11:55	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-2, 23-25'	414	3/13/13	13:00	S	1					✓		✓	✓	✓	✓		✓	✓																																	
BH-2, 28-30'	415	3/13/13	13:10	S	1					✓		✓	✓	✓	✓		✓	✓																																	
TOTAL																																																	

RELINQUISHED BY:(Signature) DATE/TIME 3/14/13 0700 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 3/14/13 858 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 3/14 853 RECEIVED BY: (Signature) 3/15/13 9:40

8252P745412

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Trace Analysis 12.3127
RECEIVING TEMP: 2.8 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # 25 Run ORO too as per ML
☑ HAND DELIVERED

use lab desc. for 323417 418 as per ML

Ludlow - all AH added BH-2 38-40'

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 3-13-13 PAGE 2 OF 2
PO #: LAB WORK ORDER #: 1303401
PROJECT LOCATION OR NAME: Legacy / Chamberlin
LAI PROJECT #: 12-0126-01 COLLECTOR: ML

TRRP report? ☐ Yes ☑ No
TIME ZONE: Time zone/State: Mtn/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-2, 30-31.5	416	3/13/13	13:10	S	1			✓		✓	✓	✓	✓													✓		
BH-2, 33-35'	417	3/13/13	13:55	S	1			✓		✓	✓	✓	✓													✓		
BH-2, 35-37'	418	3/13/13	13:55	S	1			✓			✓	✓	✓													✓		
BH-2 38-40	419	3/13	14:15									✓	✓													✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 3/14/13 0700 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 3/14/13 853 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 3/14/13 15:30 RECEIVED BY: (Signature) 3/15/13 9:40

TURN AROUND TIME
NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Trace Analysis
RECEIVING TEMP 2.8° THERM #: 2.3/2.7
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # LS:
☐ HAND DELIVERED Run ORD-100

use Lidar desc. for 323417 + 418 as per ML

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: March 26, 2013

Work Order: 13031506

Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
323480	BH-3 5-7’	soil	2013-03-14	10:50	2013-03-15
323481	BH-3 10-12’	soil	2013-03-14	11:05	2013-03-15
323482	BH-3 20-21’	soil	2013-03-14	12:30	2013-03-15
323483	BH-3 25-26.5’	soil	2013-03-14	12:45	2013-03-15
323484	BH-3 30-32’	soil	2013-03-14	13:00	2013-03-15
323485	BH-3 32-34’	soil	2013-03-14	13:00	2013-03-15
323486	BH-3 35-37’	soil	2013-03-14	13:25	2013-03-15
323487	BH-3 40-42’	soil	2013-03-14	13:40	2013-03-15
323488	BH-3 45-47’	soil	2013-03-14	13:55	2013-03-15
323489	BH-3 47-48’	soil	2013-03-14	13:55	2013-03-15
323490	BH-3 50-52’	soil	2013-03-14	14:10	2013-03-15
323491	BH-3 52-54’	soil	2013-03-14	14:10	2013-03-15
323492	BH-3 54-55’	soil	2013-03-14	14:10	2013-03-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 51 pages and shall not be reproduced except in its entirety, without written approval of

TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-03-15 and assigned to work order 13031506. Samples for work order 13031506 were received intact at a temperature of 1.4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	84716	2013-03-25 at 13:41	100003	2013-03-25 at 13:41
Chloride (IC)	E 300.0	84670	2013-03-22 at 10:00	99937	2013-03-22 at 10:56
Chloride (IC)	E 300.0	84693	2013-03-22 at 12:00	99975	2013-03-22 at 16:04
TPH DRO - NEW	S 8015 D	84582	2013-03-19 at 14:00	99835	2013-03-20 at 09:11
TPH DRO - NEW	S 8015 D	84601	2013-03-20 at 12:00	99863	2013-03-21 at 09:13
TPH GRO	S 8015 D	84578	2013-03-19 at 14:36	99830	2013-03-19 at 14:36
TPH GRO	S 8015 D	84579	2013-03-19 at 14:36	99832	2013-03-19 at 14:36
TPH ORO	S 8015 D	84582	2013-03-19 at 14:00	99836	2013-03-20 at 09:13
TPH ORO	S 8015 D	84601	2013-03-20 at 12:00	99865	2013-03-21 at 09:14

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13031506 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 323480 - BH-3 5-7'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene [1]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	<0.100	mg/Kg	5	0.0200
Ethylbenzene		1	**0.165**	mg/Kg	5	0.0200
Xylene		1	**0.580**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.70	mg/Kg	5	10.0	87	69.6 - 120
4-Bromofluorobenzene (4-BFB)			8.43	mg/Kg	5	10.0	84	69.2 - 120

Sample: 323480 - BH-3 5-7'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	Qs	1	**1270**	mg/Kg	5	25.0

Sample: 323480 - BH-3 5-7'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qs	1	**2150**	mg/Kg	20	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		267	mg/Kg	20	100	267	35.2 - 240

Sample: 323480 - BH-3 5-7'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**254**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		0.905	mg/Kg	50	2.00	45	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		12.5	mg/Kg	50	2.00	625	77.7 - 120

Sample: 323480 - BH-3 5-7'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<168	<1000	<1000	<1000	mg/Kg	20	8.38	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		243	mg/Kg	20	100	243	71.7 - 148
n-Triacontane				119	mg/Kg	20	100	119	46.7 - 188

Sample: 323481 - BH-3 10-12'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [2]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.630**	mg/Kg	5	0.0200
Ethylbenzene		1	**1.41**	mg/Kg	5	0.0200
Xylene		1	**14.9**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.44	mg/Kg	5	10.0	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)			9.02	mg/Kg	5	10.0	90	69.2 - 120

Sample: 323481 - BH-3 10-12'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1280**	mg/Kg	5	25.0

Sample: 323481 - BH-3 10-12'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**5510**	mg/Kg	40	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		467	mg/Kg	40	100	467	35.2 - 240

Sample: 323481 - BH-3 10-12'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**357**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.38	mg/Kg	20	2.00	69	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		14.1	mg/Kg	20	2.00	705	77.7 - 120

Sample: 323481 - BH-3 10-12'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<335	<2000	<2000	<2000	mg/Kg	40	8.38	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		278	mg/Kg	40	100	278	71.7 - 148
n-Triacontane	Qsr	Qsr		0.00	mg/Kg	40	100	0	46.7 - 188

Sample: 323482 - BH-3 20-21'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	3	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.389**	mg/Kg	5	0.0200
Ethylbenzene		1	**4.14**	mg/Kg	5	0.0200
Xylene		1	**11.0**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.68	mg/Kg	5	10.0	87	69.6 - 120
4-Bromofluorobenzene (4-BFB)			9.20	mg/Kg	5	10.0	92	69.2 - 120

Sample: 323482 - BH-3 20-21'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride	Qs	1	**1580**		mg/Kg	5	25.0

Sample: 323482 - BH-3 20-21'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Qs	1	**1900**		mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			184	mg/Kg	5	100	184	35.2 - 240

Sample: 323482 - BH-3 20-21'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO		1	**286**		mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.28	mg/Kg	20	2.00	64	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		15.1	mg/Kg	20	2.00	755	77.7 - 120

Sample: 323482 - BH-3 20-21'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<41.9	<250	<250	<250	mg/Kg	5	8.38	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		150	mg/Kg	5	100	150	71.7 - 148
n-Triacontane				78.2	mg/Kg	5	100	78	46.7 - 188

Sample: 323483 - BH-3 25-26.5'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	4	U	1	<0.200	mg/Kg	10	0.0200
Toluene			1	**0.875**	mg/Kg	10	0.0200
Ethylbenzene			1	**11.4**	mg/Kg	10	0.0200
Xylene			1	**20.4**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			17.9	mg/Kg	10	20.0	90	69.6 - 120
4-Bromofluorobenzene (4-BFB)			18.2	mg/Kg	10	20.0	91	69.2 - 120

Sample: 323483 - BH-3 25-26.5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323483 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1420**	mg/Kg	5	25.0

Sample: 323483 - BH-3 25-26.5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**3090**	mg/Kg	10	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			237	mg/Kg	10	100	237	35.2 - 240

Sample: 323483 - BH-3 25-26.5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**811**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.48	mg/Kg	50	2.00	74	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	39.2	mg/Kg	50	2.00	1960	77.7 - 120

Sample: 323483 - BH-3 25-26.5'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<83.8	<500	<500	<500	mg/Kg	10	8.38	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		161	mg/Kg	10	100	161	71.7 - 148
n-Triacontane	Qsr	Qsr		0.00	mg/Kg	10	100	0	46.7 - 188

Sample: 323484 - BH-3 30-32'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Benzene	5	U	1	<0.100	mg/Kg	5	0.0200
Toluene			1	**0.416**	mg/Kg	5	0.0200
Ethylbenzene			1	**3.23**	mg/Kg	5	0.0200
Xylene			1	**6.96**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.33	mg/Kg	5	10.0	93	69.6 - 120
4-Bromofluorobenzene (4-BFB)			8.89	mg/Kg	5	10.0	89	69.2 - 120

Sample: 323484 - BH-3 30-32'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323484 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**758**	mg/Kg	5	25.0

Sample: 323484 - BH-3 30-32'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99863	Date Analyzed:	2013-03-21	Analyzed By:	CM
Prep Batch:	84601	Sample Preparation:	2013-03-20	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**394**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			147	mg/Kg	1	100	147	35.2 - 240

Sample: 323484 - BH-3 30-32'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**330**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.26	mg/Kg	20	2.00	63	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	15.4	mg/Kg	20	2.00	770	77.7 - 120

Sample: 323484 - BH-3 30-32'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99865	Date Analyzed:	2013-03-21	Analyzed By:	CM
Prep Batch:	84601	Sample Preparation:	2013-03-20	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			148	mg/Kg	1	100	148	71.7 - 148
n-Triacontane			104	mg/Kg	1	100	104	46.7 - 188

Sample: 323485 - BH-3 32-34'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [6]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.295**	mg/Kg	5	0.0200
Ethylbenzene		1	**4.79**	mg/Kg	5	0.0200
Xylene		1	**9.63**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.10	mg/Kg	5	10.0	91	69.6 - 120
4-Bromofluorobenzene (4-BFB)			9.29	mg/Kg	5	10.0	93	69.2 - 120

Sample: 323485 - BH-3 32-34'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323485 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**913**	mg/Kg	5	25.0

Sample: 323485 - BH-3 32-34'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**821**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			137	mg/Kg	5	100	137	35.2 - 240

Sample: 323485 - BH-3 32-34'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**243**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.16	mg/Kg	20	2.00	58	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	13.6	mg/Kg	20	2.00	680	77.7 - 120

Sample: 323485 - BH-3 32-34'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<41.9	<250	<250	<250	mg/Kg	5	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			122	mg/Kg	5	100	122	71.7 - 148
n-Triacontane			80.3	mg/Kg	5	100	80	46.7 - 188

Sample: 323486 - BH-3 35-37'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [7]	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.170**	mg/Kg	5	0.0200
Ethylbenzene		1	**3.32**	mg/Kg	5	0.0200
Xylene		1	**6.62**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.71	mg/Kg	5	10.0	87	69.6 - 120
4-Bromofluorobenzene (4-BFB)			9.02	mg/Kg	5	10.0	90	69.2 - 120

Sample: 323486 - BH-3 35-37'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323486 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**838**	mg/Kg	5	25.0

Sample: 323486 - BH-3 35-37'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1320**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			155	mg/Kg	5	100	155	35.2 - 240

Sample: 323486 - BH-3 35-37'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**259**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.23	mg/Kg	20	2.00	62	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		16.5	mg/Kg	20	2.00	825	77.7 - 120

Sample: 323486 - BH-3 35-37'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<41.9	<250	<250	<250	mg/Kg	5	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	5	100	129	71.7 - 148
n-Triacontane			77.5	mg/Kg	5	100	78	46.7 - 188

Sample: 323487 - BH-3 40-42'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	8	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.512**	mg/Kg	5	0.0200
Ethylbenzene		1	**5.08**	mg/Kg	5	0.0200
Xylene		1	**11.1**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.90	mg/Kg	5	10.0	89	69.6 - 120
4-Bromofluorobenzene (4-BFB)			9.64	mg/Kg	5	10.0	96	69.2 - 120

Sample: 323487 - BH-3 40-42'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323487 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**250**	mg/Kg	5	25.0

Sample: 323487 - BH-3 40-42'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**675**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			134	mg/Kg	5	100	134	35.2 - 240

Sample: 323487 - BH-3 40-42'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**384**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.05	mg/Kg	20	2.00	52	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		20.2	mg/Kg	20	2.00	1010	77.7 - 120

Sample: 323487 - BH-3 40-42'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<41.9	<250	<250	<250	mg/Kg	5	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			123	mg/Kg	5	100	123	71.7 - 148
n-Triacontane			80.0	mg/Kg	5	100	80	46.7 - 188

Sample: 323488 - BH-3 45-47'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [9]	U	1	<0.200	mg/Kg	10	0.0200
Toluene		1	**0.207**	mg/Kg	10	0.0200
Ethylbenzene		1	**2.47**	mg/Kg	10	0.0200
Xylene		1	**5.66**	mg/Kg	10	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			17.3	mg/Kg	10	20.0	86	69.6 - 120
4-Bromofluorobenzene (4-BFB)			17.4	mg/Kg	10	20.0	87	69.2 - 120

Sample: 323488 - BH-3 45-47'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323488 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1300**	mg/Kg	5	25.0

Sample: 323488 - BH-3 45-47'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**1150**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			150	mg/Kg	5	100	150	35.2 - 240

Sample: 323488 - BH-3 45-47'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**136**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		1.33	mg/Kg	20	2.00	66	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		9.70	mg/Kg	20	2.00	485	77.7 - 120

Sample: 323488 - BH-3 45-47'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<41.9	<250	<250	<250	mg/Kg	5	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			138	mg/Kg	5	100	138	71.7 - 148
n-Triacontane			91.1	mg/Kg	5	100	91	46.7 - 188

Sample: 323489 - BH-3 47-48'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [10]	U	1	<0.0400	mg/Kg	2	0.0200
Toluene		1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene	U	1	<0.0400	mg/Kg	2	0.0200
Xylene	U	1	<0.0400	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.56	mg/Kg	2	4.00	89	69.6 - 120
4-Bromofluorobenzene (4-BFB)			3.58	mg/Kg	2	4.00	90	69.2 - 120

Sample: 323489 - BH-3 47-48'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99937	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84670	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323489 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qs	1	**1540**	mg/Kg	5	25.0

Sample: 323489 - BH-3 47-48'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs	1	**53.0**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	35.2 - 240

Sample: 323489 - BH-3 47-48'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99830	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84578	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	77.7 - 120

Sample: 323489 - BH-3 47-48'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			104	mg/Kg	1	100	104	71.7 - 148
n-Triacontane			84.2	mg/Kg	1	100	84	46.7 - 188

Sample: 323490 - BH-3 50-52'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	69.2 - 120

Sample: 323490 - BH-3 50-52'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99975	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84693	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323490 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**455**	mg/Kg	5	25.0

Sample: 323490 - BH-3 50-52'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			106	mg/Kg	1	100	106	35.2 - 240

Sample: 323490 - BH-3 50-52'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.50	mg/Kg	1	2.00	75	77.7 - 120

Sample: 323490 - BH-3 50-52'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			105	mg/Kg	1	100	105	71.7 - 148
n-Triacontane			86.5	mg/Kg	1	100	86	46.7 - 188

Sample: 323491 - BH-3 52-54'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	69.2 - 120

Sample: 323491 - BH-3 52-54'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99975	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84693	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323491 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1060**	mg/Kg	5	25.0

Sample: 323491 - BH-3 52-54'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	35.2 - 240

Sample: 323491 - BH-3 52-54'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Jb	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.61	mg/Kg	1	2.00	80	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	1.46	mg/Kg	1	2.00	73	77.7 - 120

Sample: 323491 - BH-3 52-54'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			101	mg/Kg	1	100	101	71.7 - 148
n-Triacontane			82.8	mg/Kg	1	100	83	46.7 - 188

Sample: 323492 - BH-3 54-55'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100003	Date Analyzed:	2013-03-25	Analyzed By:	JS
Prep Batch:	84716	Sample Preparation:	2013-03-25	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	1	2.00	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	69.2 - 120

Sample: 323492 - BH-3 54-55'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	99975	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84693	Sample Preparation:	2013-03-22	Prepared By:	RL

continued ...

sample 323492 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**567**	mg/Kg	5	25.0

Sample: 323492 - BH-3 54-55'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			103	mg/Kg	1	100	103	35.2 - 240

Sample: 323492 - BH-3 54-55'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	99832	Date Analyzed:	2013-03-19	Analyzed By:	JS
Prep Batch:	84579	Sample Preparation:	2013-03-19	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.78	mg/Kg	1	2.00	89	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.68	mg/Kg	1	2.00	84	77.7 - 120

Sample: 323492 - BH-3 54-55'

Laboratory:	Lubbock				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	Sample Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO	U		<8.38	<50.0	<50.0	<50.0	mg/Kg	1	8.38	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			102	mg/Kg	1	100	102	71.7 - 148
n-Triacontane			84.6	mg/Kg	1	100	85	46.7 - 188

Method Blanks

Method Blank (1) QC Batch: 100003

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS
Prep Batch: 84716 | QC Preparation: 2013-03-25 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00473	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	0.00480	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	1	2.00	79	69.2 - 120

Method Blank (1) QC Batch: 99830

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84578 | QC Preparation: 2013-03-19 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.458	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	77.7 - 120

Method Blank (1) QC Batch: 99832

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	0.264	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.67	mg/Kg	1	2.00	84	77.7 - 120

Method Blank (1) QC Batch: 99835

QC Batch:	99835	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	QC Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			126	mg/Kg	1	100	126	35.2 - 240

Method Blank (1) QC Batch: 99836

QC Batch:	99836	Date Analyzed:	2013-03-20	Analyzed By:	CM
Prep Batch:	84582	QC Preparation:	2013-03-19	Prepared By:	CM

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			<8.38	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			125	mg/Kg	1	100	125	71.7 - 148
n-Triacontane			104	mg/Kg	1	100	104	46.7 - 188

Method Blank (1) QC Batch: 99863

QC Batch: 99863 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.3	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	35.2 - 240

Method Blank (1) QC Batch: 99865

QC Batch: 99865 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			<8.38	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			131	mg/Kg	1	100	131	71.7 - 148
n-Triacontane			92.2	mg/Kg	1	100	92	46.7 - 188

Method Blank (1) QC Batch: 99937

QC Batch: 99937 | Date Analyzed: 2013-03-22 | Analyzed By: RL
Prep Batch: 84670 | QC Preparation: 2013-03-22 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 99975

QC Batch:	99975	Date Analyzed:	2013-03-22	Analyzed By:	RL
Prep Batch:	84693	QC Preparation:	2013-03-22	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS
Prep Batch: 84716 | QC Preparation: 2013-03-25 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.78	mg/Kg	1	2.00	<0.00473	89	74.6 - 120
Toluene		1	1.76	mg/Kg	1	2.00	<0.00416	88	77.1 - 120
Ethylbenzene		1	1.77	mg/Kg	1	2.00	<0.00511	88	75 - 120
Xylene		1	5.35	mg/Kg	1	6.00	0.0048	89	77 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.78	mg/Kg	1	2.00	<0.00473	89	74.6 - 120	0	20
Toluene		1	1.76	mg/Kg	1	2.00	<0.00416	88	77.1 - 120	0	20
Ethylbenzene		1	1.79	mg/Kg	1	2.00	<0.00511	90	75 - 120	1	20
Xylene		1	5.38	mg/Kg	1	6.00	0.0048	90	77 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.70	1.66	mg/Kg	1	2.00	85	83	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.61	1.62	mg/Kg	1	2.00	80	81	69.2 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84578 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.5	mg/Kg	1	20.0	0.458	85	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	17.9	mg/Kg	1	20.0	0.458	87	66.9 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.83	mg/Kg	1	2.00	93	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.88	1.86	mg/Kg	1	2.00	94	93	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	17.6	mg/Kg	1	20.0	0.264	87	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	17.0	mg/Kg	1	20.0	0.264	84	66.9 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.75	1.79	mg/Kg	1	2.00	88	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.87	1.89	mg/Kg	1	2.00	94	94	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 99835 | Date Analyzed: 2013-03-20 | Analyzed By: CM
Prep Batch: 84582 | QC Preparation: 2013-03-19 | Prepared By: CM

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	239	mg/Kg	1	250	<15.3	96	64.8 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	235	mg/Kg	1	250	<15.3	94	64.8 - 138	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	102	101	mg/Kg	1	100	102	101	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 99836 | Date Analyzed: 2013-03-20 | Analyzed By: CM
Prep Batch: 84582 | QC Preparation: 2013-03-19 | Prepared By: CM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	100	100	mg/Kg	1	100	100	100	71.7 - 148
n-Triacontane	83.0	81.6	mg/Kg	1	100	83	82	46.7 - 188

Laboratory Control Spike (LCS-1)

QC Batch: 99863 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	296	mg/Kg	1	250	<15.3	118	64.8 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	243	mg/Kg	1	250	<15.3	97	64.8 - 138	20	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	118	101	mg/Kg	1	100	118	101	35.2 - 240

Laboratory Control Spike (LCS-1)

QC Batch: 99865 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	118	101	mg/Kg	1	100	118	101	71.7 - 148
n-Triacontane	87.0	82.3	mg/Kg	1	100	87	82	46.7 - 188

Laboratory Control Spike (LCS-1)

QC Batch: 99937 | Date Analyzed: 2013-03-22 | Analyzed By: RL
Prep Batch: 84670 | QC Preparation: 2013-03-22 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	247	mg/Kg	1	250	<6.30	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	249	mg/Kg	1	250	<6.30	100	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 99975 | Date Analyzed: 2013-03-22 | Analyzed By: RL
Prep Batch: 84693 | QC Preparation: 2013-03-22 | Prepared By: RL

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	250	mg/Kg	1	250	<6.30	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	250	mg/Kg	1	250	<6.30	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 324325

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS
Prep Batch: 84716 | QC Preparation: 2013-03-25 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.91	mg/Kg	5	2.00	<0.0236	96	68.8 - 120
Toluene		1	1.91	mg/Kg	5	2.00	<0.0208	96	71.8 - 122
Ethylbenzene		1	2.02	mg/Kg	5	2.00	<0.0256	101	75 - 130
Xylene		1	6.34	mg/Kg	5	6.00	0.424	99	75.4 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.79	mg/Kg	5	2.00	<0.0236	90	68.8 - 120	6	20
Toluene		1	1.79	mg/Kg	5	2.00	<0.0208	90	71.8 - 122	6	20
Ethylbenzene		1	1.90	mg/Kg	5	2.00	<0.0256	95	75 - 130	6	20
Xylene		1	6.04	mg/Kg	5	6.00	0.424	94	75.4 - 129	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	8.09	8.05	mg/Kg	5	10	81	80	69.6 - 120
4-Bromofluorobenzene (4-BFB)	8.86	8.90	mg/Kg	5	10	89	89	69.2 - 120

Matrix Spike (MS-1) Spiked Sample: 323851

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84578 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.4	mg/Kg	1	20.0	<0.230	77	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.7	mg/Kg	1	20.0	<0.230	78	38.8 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.88	1.88	mg/Kg	1	2	94	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.94	1.88	mg/Kg	1	2	97	94	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 84579

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS
Prep Batch: 84579 | QC Preparation: 2013-03-19 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.5	mg/Kg	1	20.0	<0.230	68	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.3	mg/Kg	1	20.0	<0.230	72	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.65	1.76	mg/Kg	1	2	82	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)	1.70	1.79	mg/Kg	1	2	85	90	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 323480

QC Batch: 99835 | Date Analyzed: 2013-03-20 | Analyzed By: CM
Prep Batch: 84582 | QC Preparation: 2013-03-19 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	Qs	Qs 1	2630	mg/Kg	20	250	2150	192	15.5 - 174

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	2500	mg/Kg	20	250	2150	140	15.5 - 174	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	284	277	mg/Kg	20	100	284	277	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 323480

QC Batch: 99836 | Date Analyzed: 2013-03-20 | Analyzed By: CM
Prep Batch: 84582 | QC Preparation: 2013-03-19 | Prepared By: CM

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	257	252	mg/Kg	20	100	257	252	71.7 - 148
n-Triacontane			97.5	92.3	mg/Kg	20	100	98	92	46.7 - 188

Matrix Spike (MS-1) Spiked Sample: 323849

QC Batch: 99863 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	257	mg/Kg	1	250	<15.3	103	15.5 - 174

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	256	mg/Kg	1	250	<15.3	102	15.5 - 174	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	126	119	mg/Kg	1	100	126	119	35.2 - 240

Matrix Spike (MS-1) Spiked Sample: 323849

QC Batch: 99865 | Date Analyzed: 2013-03-21 | Analyzed By: CM
Prep Batch: 84601 | QC Preparation: 2013-03-20 | Prepared By: CM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			<8.38	mg/Kg	1	250	<8.38	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			<8.38	mg/Kg	1	250	<8.38	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	127	120	mg/Kg	1	100	127	120	71.7 - 148
n-Triacontane	102	96.7	mg/Kg	1	100	102	97	46.7 - 188

Matrix Spike (MS-1) Spiked Sample: 323489

QC Batch: 99937 | Date Analyzed: 2013-03-22 | Analyzed By: RL
Prep Batch: 84670 | QC Preparation: 2013-03-22 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	3040	mg/Kg	5	1250	1540	120	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Qs	Qs	1 3060	mg/Kg	5	1250	1540	122	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 323842

QC Batch: 99975 | Date Analyzed: 2013-03-22 | Analyzed By: RL
Prep Batch: 84693 | QC Preparation: 2013-03-22 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1620	mg/Kg	5	1250	288	106	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	1630	mg/Kg	5	1250	288	107	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0878	88	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0873	87	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0888	89	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.267	89	80 - 120	2013-03-25

Standard (CCV-2)

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0880	88	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0868	87	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0867	87	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.260	87	80 - 120	2013-03-25

Standard (CCV-3)

QC Batch: 100003 | Date Analyzed: 2013-03-25 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0887	89	80 - 120	2013-03-25
Toluene		1	mg/kg	0.100	0.0856	86	80 - 120	2013-03-25
Ethylbenzene		1	mg/kg	0.100	0.0854	85	80 - 120	2013-03-25
Xylene		1	mg/kg	0.300	0.256	85	80 - 120	2013-03-25

Standard (CCV-1)

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.919	92	80 - 120	2013-03-19

Standard (CCV-2)

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.916	92	80 - 120	2013-03-19

Standard (CCV-3)

QC Batch: 99830 | Date Analyzed: 2013-03-19 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.859	86	80 - 120	2013-03-19

Standard (CCV-1)

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.884	88	80 - 120	2013-03-19

Standard (CCV-2)

QC Batch: 99832 | Date Analyzed: 2013-03-19 | Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.818	82	80 - 120	2013-03-19

Standard (CCV-3)

QC Batch: 99832 Date Analyzed: 2013-03-19 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.853	85	80 - 120	2013-03-19

Standard (CCV-1)

QC Batch: 99835 Date Analyzed: 2013-03-20 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	222	89	80 - 120	2013-03-20

Standard (CCV-2)

QC Batch: 99835 Date Analyzed: 2013-03-20 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-03-20

Standard (CCV-3)

QC Batch: 99835 Date Analyzed: 2013-03-20 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-03-20

Standard (CCV-1)

QC Batch: 99863 Date Analyzed: 2013-03-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	301	120	80 - 120	2013-03-21

Standard (CCV-2)

QC Batch: 99863 Date Analyzed: 2013-03-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	225	90	80 - 120	2013-03-21

Standard (CCV-2)

QC Batch: 99865 Date Analyzed: 2013-03-21 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2013-03-21

Standard (CCV-1)

QC Batch: 99937 Date Analyzed: 2013-03-22 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.4	98	90 - 110	2013-03-22

Standard (CCV-2)

QC Batch: 99937 Date Analyzed: 2013-03-22 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-03-22

Standard (CCV-1)

QC Batch: 99975 Date Analyzed: 2013-03-22 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.1	96	90 - 110	2013-03-22

Standard (CCV-2)

QC Batch: 99975 Date Analyzed: 2013-03-22 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.3	101	90 - 110	2013-03-22

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-12-8	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 dilution due to hydrocarbons.
2 Dilution due to hydrocarbons.
3 Dilution due to hydrocarbons.
4 Dilution due to hydrocarbons.
5 Dilution due to hydrocarbons.
6 Dilution due to hydrocarbons.
7 Dilution due to hydrocarbons.
8 Dilution due to hydrocarbons.
9 Dilution due to hydrocarbons.
10 Dilution due to hydrocarbons.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Coty Woolf

DATE: 03-14-2013 PAGE 1 OF

PO #: LAB WORK ORDER #: 1303156

PROJECT LOCATION OR NAME: Legacy - Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: ML

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MTN/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☑ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☑ GRO	DIESEL - MOD 8015 ☑ DRO ORO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐ E300	FIELD NOTES
BH-3, 5-7'	323480	3/14/13	10:50	S	1				✓		✓		✓	✓													✓	
BH-3, 10'-12'	481	3/14/13	11:05	S	1				✓		✓		✓	✓													✓	
BH-3, 20'-21'	482	3/14/13	12:30	S	1				✓		✓		✓	✓													✓	
BH-3, 25-26.5'	483	3/14/13	12:45	S	1				✓		✓		✓	✓													✓	
BH-3, 30-32'	484	3/14/13	13:00	S	1				✓		✓		✓	✓													✓	
BH-3, 32-34'	485	3/14/13	1300	S	1				✓		✓		✓	✓													✓	
BH-3, 35'-37'	486	3/14/13	13:25	S	1				✓		✓		✓	✓													✓	
BH-3, 40-42'	487	3/14/13	13:40	S	1				✓		✓		✓	✓													✓	
BH-3, 45'-47'	488	3/14/13	13:55	S	1				✓		✓		✓	✓													✓	
BH-3, 47-48'	489	3/14/13	13:55	S	1				✓		✓		✓	✓													✓	
BH-3, 50-52'	490	3/14/13	14:10	S	1				✓		✓		✓	✓													✓	
BH-3, 52-54'	491	3/14/13	14:10	S	1				✓		✓		✓	✓													✓	
BH-3, 54-55'	492	3/14/13	14:10	S	1				✓		✓		✓	✓													✓	
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 3/15/13 0815 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 3/15/13/0903 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Trace Analysis
RECEIVING TEMP: 1.4 THERM #:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Coty Woolf

DATE: 03-14-2013 PAGE 1 OF

PO #: LAB WORK ORDER #: 1303506

PROJECT LOCATION OR NAME: Legacy - Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MTN/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☑ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☑ GRO DRO	DIESEL - MOD 8015 ☑ GRO DRO	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	E300	FIELD NOTES
BH-3, 5-7'	323480	3/14/13	10:50	S	1				✓		✓		✓	✓													✓		
BH-3, 10'-12'	481	3/14/13	11:05	S	1				✓		✓		✓	✓													✓		
BH-3, 20'-21'	482	3/14/13	12:30	S	1				✓		✓		✓	✓													✓		
BH-3, 25-26.5'	483	3/14/13	12:45	S	1				✓		✓		✓	✓													✓		
BH-3, 30-32'	484	3/14/13	13:00	S	1				✓		✓		✓	✓													✓		
BH-3, 32-34'	485	3/14/13	13:00	S	1				✓		✓		✓	✓													✓		
BH-3, 35'-37'	486	3/14/13	13:25	S	1				✓		✓		✓	✓													✓		
BH-3, 40-42'	487	3/14/13	13:40	S	1				✓		✓		✓	✓													✓		
BH-3, 45'-47'	488	3/14/13	13:55	S	1				✓		✓		✓	✓													✓		
BH-3, 47-48'	489	3/14/13	13:55	S	1				✓		✓		✓	✓													✓		
BH-3, 50-52'	490	3/14/13	14:10	S	1				✓		✓		✓	✓													✓		
BH-3, 52-54'	491	3/14/13	14:10	S	1				✓		✓		✓	✓													✓		
BH-3, 54-55'	492	3/14/13	14:10	S	1				✓		✓		✓	✓													✓		
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 3/15/13 0615 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 3/15/13/0903 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 3/18/13 15:30 RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐ AH

LABORATORY USE ONLY: Tpo Analysis
RECEIVING TEMP: 1.4° THERM #:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED Lubbock-all

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
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(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 22, 2013

Work Order: 13041207

Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

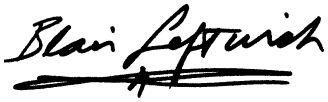
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326128	BH-4 0’	soil	2013-04-11	09:25	2013-04-12
326129	BH-4 5’	soil	2013-04-11	09:30	2013-04-12
326130	BH-4 10’	soil	2013-04-11	09:40	2013-04-12
326131	BH-4 15’	soil	2013-04-11	09:44	2013-04-12
326132	BH-4 20’	soil	2013-04-11	09:50	2013-04-12
326133	BH-4 25’	soil	2013-04-11	10:09	2013-04-12
326134	BH-4 30’	soil	2013-04-11	10:10	2013-04-12
326135	BH-4 40’	soil	2013-04-11	10:20	2013-04-12
326136	BH-4 50’	soil	2013-04-11	10:35	2013-04-12
326137	BH-5 0’	soil	2013-04-11	10:50	2013-04-12
326138	BH-5 5’	soil	2013-04-11	10:55	2013-04-12
326139	BH-5 10’	soil	2013-04-11	11:00	2013-04-12
326140	BH-5 15’	soil	2013-04-11	11:05	2013-04-12
326141	BH-5 20’	soil	2013-04-11	11:10	2013-04-12
326142	BH-5 25’	soil	2013-04-11	11:20	2013-04-12
326143	BH-5 30’	soil	2013-04-11	11:28	2013-04-12
326144	BH-5 40’	soil	2013-04-11	11:45	2013-04-12
326145	BH-5 50’	soil	2013-04-11	11:50	2013-04-12

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326146	BH-6 0’	soil	2013-04-11	12:05	2013-04-12
326147	BH-6 5’	soil	2013-04-11	12:15	2013-04-12
326148	BH-6 10’	soil	2013-04-11	12:20	2013-04-12
326149	BH-6 15’	soil	2013-04-11	12:25	2013-04-12
326150	BH-6 20’	soil	2013-04-11	12:30	2013-04-12
326151	BH-6 25’	soil	2013-04-11	12:40	2013-04-12
326152	BH-6 30’	soil	2013-04-11	12:50	2013-04-12
326153	BH-6 40’	soil	2013-04-11	13:00	2013-04-12
326154	BH-6 50’	soil	2013-04-11	13:10	2013-04-12
326155	BH-7 0’	soil	2013-04-11	14:00	2013-04-12
326156	BH-7 5’	soil	2013-04-11	14:03	2013-04-12
326157	BH-7 10’	soil	2013-04-11	14:05	2013-04-12
326158	BH-7 15’	soil	2013-04-11	14:10	2013-04-12
326159	BH-7 20’	soil	2013-04-11	14:28	2013-04-12
326160	BH-7 25’	soil	2013-04-11	14:45	2013-04-12
326161	BH-7 30’	soil	2013-04-11	14:50	2013-04-12
326162	BH-7 40’	soil	2013-04-11	15:05	2013-04-12
326163	BH-7 50’	soil	2013-04-11	15:10	2013-04-12

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 72 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-04-12 and assigned to work order 13041207. Samples for work order 13041207 were received intact at a temperature of 1.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	85170	2013-04-16 at 14:58	100516	2013-04-16 at 14:58
BTEX	S 8021B	85293	2013-04-19 at 13:27	100655	2013-04-19 at 13:27
Chloride (IC)	E 300.0	85242	2013-04-17 at 08:00	100604	2013-04-17 at 09:13
Chloride (IC)	E 300.0	85243	2013-04-17 at 12:00	100605	2013-04-17 at 14:45
Chloride (IC)	E 300.0	85252	2013-04-18 at 12:00	100614	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85253	2013-04-18 at 12:00	100615	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85257	2013-04-17 at 12:00	100620	2013-04-17 at 14:45
TPH DRO - NEW	S 8015 D	85210	2013-04-17 at 09:00	100568	2013-04-17 at 11:09
TPH DRO - NEW	S 8015 D	85211	2013-04-17 at 09:30	100569	2013-04-17 at 16:45
TPH GRO	S 8015 D	85170	2013-04-16 at 14:58	100515	2013-04-16 at 14:58
TPH GRO	S 8015 D	85247	2013-04-18 at 16:03	100610	2013-04-18 at 16:03
TPH GRO	S 8015 D	85248	2013-04-18 at 16:03	100612	2013-04-18 at 16:03
TPH GRO	S 8015 D	85293	2013-04-19 at 13:27	100656	2013-04-19 at 13:27

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041207 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 326128 - BH-4 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326128 - BH-4 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO		1	**307**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		162	mg/Kg	1	100	162	70 - 130

Sample: 326128 - BH-4 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.48	mg/Kg	1	2.00	124	69.6 - 124

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.35	mg/Kg	1	2.00	118	77.7 - 120

Sample: 326129 - BH-4 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	<25.0		mg/Kg	1	25.0

Sample: 326129 - BH-4 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326129 - BH-4 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	1	2.00	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	77.7 - 120

Sample: 326130 - BH-4 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326130 - BH-4 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326130 - BH-4 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	77.7 - 120

Sample: 326131 - BH-4 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326131 - BH-4 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	70 - 130

Sample: 326131 - BH-4 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	77.7 - 120

Sample: 326132 - BH-4 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326132 - BH-4 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326132 - BH-4 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	77.7 - 120

Sample: 326133 - BH-4 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326133 - BH-4 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326133 - BH-4 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	77.7 - 120

Sample: 326134 - BH-4 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326134 - BH-4 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326134 - BH-4 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	1	2.00	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	77.7 - 120

Sample: 326135 - BH-4 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326135 - BH-4 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326135 - BH-4 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	77.7 - 120

Sample: 326136 - BH-4 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	<25.0	mg/Kg	1	25.0

Sample: 326136 - BH-4 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	70 - 130

Sample: 326136 - BH-4 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.63	mg/Kg	1	2.00	82	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	77.7 - 120

Sample: 326137 - BH-5 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100604	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85242	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	**37.2**	mg/Kg	1	25.0

Sample: 326137 - BH-5 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326137 - BH-5 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO [1]	U	1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.50	mg/Kg	2	2.00	75	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	2	2.00	94	77.7 - 120

Sample: 326138 - BH-5 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1990**	mg/Kg	5	25.0

Sample: 326138 - BH-5 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326138 - BH-5 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	77.7 - 120

Sample: 326139 - BH-5 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**2670**		mg/Kg	10	25.0

Sample: 326139 - BH-5 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO		1	**255**		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr Qsr		132	mg/Kg	1	100	132	70 - 130

Sample: 326139 - BH-5 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO		1	<4.00		mg/Kg	1	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				2.38	mg/Kg	1	2.00	119	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2.50	mg/Kg	1	2.00	125	77.7 - 120

Sample: 326140 - BH-5 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**2210**		mg/Kg	5	25.0

Sample: 326140 - BH-5 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO		1	**479**		mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		140	mg/Kg	1	100	140	70 - 130

Sample: 326140 - BH-5 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO		1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.22	mg/Kg	1	2.00	111	77.7 - 120

Sample: 326141 - BH-5 20'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100516	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [2]	U	1	<0.100	mg/Kg	5	0.0200
Toluene	U	1	<0.100	mg/Kg	5	0.0200
Ethylbenzene	U	1	<0.100	mg/Kg	5	0.0200
Xylene	U	1	<0.100	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	5	2.00	88	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.73	mg/Kg	5	2.00	86	69.2 - 120

Sample: 326141 - BH-5 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1610**	mg/Kg	5	25.0

Sample: 326141 - BH-5 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**274**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Sample: 326141 - BH-5 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**7.44**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.48	mg/Kg	1	2.00	124	77.7 - 120

Sample: 326142 - BH-5 25'

Laboratory:	Lubbock				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	100655	Date Analyzed:	2013-04-19	Analyzed By:	MT
Prep Batch:	85293	Sample Preparation:	2013-04-19	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [3]	U	1	<0.0400	mg/Kg	2	0.0200
Toluene		1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene		1	**0.230**	mg/Kg	2	0.0200
Xylene		1	**0.460**	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.63	mg/Kg	2	2.00	82	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	2	2.00	85	69.2 - 120

Sample: 326142 - BH-5 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**884**	mg/Kg	5	25.0

Sample: 326142 - BH-5 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**843**	mg/Kg	2	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	152	mg/Kg	2	100	152	70 - 130

Sample: 326142 - BH-5 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100656	Date Analyzed:	2013-04-19	Analyzed By:	MT
Prep Batch:	85293	Sample Preparation:	2013-04-19	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**14.7**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.87	mg/Kg	2	2.00	94	69.6 - 124
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	2.92	mg/Kg	2	2.00	146	77.7 - 120

Sample: 326143 - BH-5 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1140**	mg/Kg	5	25.0

Sample: 326143 - BH-5 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	70 - 130

Sample: 326143 - BH-5 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	1	2.00	109	77.7 - 120

Sample: 326144 - BH-5 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1430**	mg/Kg	5	25.0

Sample: 326144 - BH-5 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326144 - BH-5 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	77.7 - 120

Sample: 326145 - BH-5 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1530**	mg/Kg	5	25.0

Sample: 326145 - BH-5 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326145 - BH-5 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.42	mg/Kg	1	2.00	121	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.39	mg/Kg	1	2.00	120	77.7 - 120

Sample: 326146 - BH-6 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100605	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85243	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1900**	mg/Kg	10	25.0

Sample: 326146 - BH-6 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**140**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			128	mg/Kg	1	100	128	70 - 130

Sample: 326146 - BH-6 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.44	mg/Kg	1	2.00	122	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.25	mg/Kg	1	2.00	112	77.7 - 120

Sample: 326147 - BH-6 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1200**	mg/Kg	5	25.0

Sample: 326147 - BH-6 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100568	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85210	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326147 - BH-6 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100515	Date Analyzed:	2013-04-16	Analyzed By:	JS
Prep Batch:	85170	Sample Preparation:	2013-04-16	Prepared By:	JS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.53	mg/Kg	1	2.00	76	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.02	mg/Kg	1	2.00	101	77.7 - 120

Sample: 326148 - BH-6 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**3870**	mg/Kg	10	25.0

Sample: 326148 - BH-6 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326148 - BH-6 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	77.7 - 120

Sample: 326149 - BH-6 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**4570**	mg/Kg	10	25.0

Sample: 326149 - BH-6 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326149 - BH-6 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	77.7 - 120

Sample: 326150 - BH-6 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**2310**	mg/Kg	5	25.0

Sample: 326150 - BH-6 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326150 - BH-6 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	77.7 - 120

Sample: 326151 - BH-6 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**2010**	mg/Kg	5	25.0

Sample: 326151 - BH-6 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326151 - BH-6 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.11	mg/Kg	1	2.00	106	77.7 - 120

Sample: 326152 - BH-6 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**2310**	mg/Kg	5	25.0

Sample: 326152 - BH-6 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326152 - BH-6 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.28	mg/Kg	1	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.24	mg/Kg	1	2.00	112	77.7 - 120

Sample: 326153 - BH-6 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1810**	mg/Kg	5	25.0

Sample: 326153 - BH-6 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326153 - BH-6 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.29	mg/Kg	1	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	77.7 - 120

Sample: 326154 - BH-6 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**848**	mg/Kg	2	25.0

Sample: 326154 - BH-6 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326154 - BH-6 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.31	mg/Kg	1	2.00	116	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.20	mg/Kg	1	2.00	110	77.7 - 120

Sample: 326155 - BH-7 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**126**	mg/Kg	1	25.0

Sample: 326155 - BH-7 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Sample: 326155 - BH-7 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO [4]	U	1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	2	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	2	2.00	114	77.7 - 120

Sample: 326156 - BH-7 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	Sample Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**42.5**	mg/Kg	1	25.0

Sample: 326156 - BH-7 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326156 - BH-7 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	77.7 - 120

Sample: 326157 - BH-7 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100614	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85252	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**315**	mg/Kg	1	25.0

Sample: 326157 - BH-7 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			116	mg/Kg	1	100	116	70 - 130

Sample: 326157 - BH-7 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	77.7 - 120

Sample: 326158 - BH-7 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**115**	mg/Kg	1	25.0

Sample: 326158 - BH-7 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	70 - 130

Sample: 326158 - BH-7 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.14	mg/Kg	1	2.00	107	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	77.7 - 120

Sample: 326159 - BH-7 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**627**	mg/Kg	2	25.0

Sample: 326159 - BH-7 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326159 - BH-7 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.12	mg/Kg	1	2.00	106	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	77.7 - 120

Sample: 326160 - BH-7 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100614	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85252	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**850**	mg/Kg	5	25.0

Sample: 326160 - BH-7 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326160 - BH-7 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.24	mg/Kg	1	2.00	112	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.07	mg/Kg	1	2.00	104	77.7 - 120

Sample: 326161 - BH-7 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**536**	mg/Kg	2	25.0

Sample: 326161 - BH-7 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			111	mg/Kg	1	100	111	70 - 130

Sample: 326161 - BH-7 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.35	mg/Kg	1	2.00	118	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.26	mg/Kg	1	2.00	113	77.7 - 120

Sample: 326162 - BH-7 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**523**	mg/Kg	5	25.0

Sample: 326162 - BH-7 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326162 - BH-7 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	77.7 - 120

Sample: 326163 - BH-7 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**582**	mg/Kg	5	25.0

Sample: 326163 - BH-7 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	70 - 130

Sample: 326163 - BH-7 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.24	mg/Kg	1	2.00	112	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 100515

QC Batch: 100515 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	77.7 - 120

Method Blank (1) QC Batch: 100516

QC Batch: 100516 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00473	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	0.00650	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.75	mg/Kg	1	2.00	88	69.2 - 120

Method Blank (1) QC Batch: 100568

QC Batch: 100568 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85210 | QC Preparation: 2013-04-17 | Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	6.03	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Method Blank (1) QC Batch: 100569

QC Batch: 100569 Date Analyzed: 2013-04-17 Analyzed By: CM
Prep Batch: 85211 QC Preparation: 2013-04-17 Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	6.10	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Method Blank (1) QC Batch: 100604

QC Batch: 100604 Date Analyzed: 2013-04-17 Analyzed By: RL
Prep Batch: 85242 QC Preparation: 2013-04-17 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100605

QC Batch: 100605 Date Analyzed: 2013-04-17 Analyzed By: RL
Prep Batch: 85243 QC Preparation: 2013-04-17 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100610

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	77.7 - 120

Method Blank (1) QC Batch: 100612

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	77.7 - 120

Method Blank (1) QC Batch: 100614

QC Batch: 100614 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85252 | QC Preparation: 2013-04-18 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100615

QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	QC Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100620

QC Batch:	100620	Date Analyzed:	2013-04-17	Analyzed By:	RL
Prep Batch:	85257	QC Preparation:	2013-04-17	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100655

QC Batch:	100655	Date Analyzed:	2013-04-19	Analyzed By:	MT
Prep Batch:	85293	QC Preparation:	2013-04-19	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00473	mg/Kg	0.02
Toluene		1	<0.00416	mg/Kg	0.02
Ethylbenzene		1	<0.00511	mg/Kg	0.02
Xylene		1	0.00520	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	69.6 - 120
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	69.2 - 120

Method Blank (1) QC Batch: 100656

QC Batch:	100656	Date Analyzed:	2013-04-19	Analyzed By:	MT
Prep Batch:	85293	QC Preparation:	2013-04-19	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.08	mg/Kg	1	2.00	104	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	77.7 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100515 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.2	mg/Kg	1	20.0	<0.230	71	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.2	mg/Kg	1	20.0	<0.230	71	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.65	1.67	mg/Kg	1	2.00	82	84	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.21	2.21	mg/Kg	1	2.00	110	110	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100516 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.76	mg/Kg	1	2.00	<0.00473	88	74.6 - 120
Toluene		1	1.81	mg/Kg	1	2.00	<0.00416	90	77.1 - 120
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.00511	96	75 - 120
Xylene		1	5.76	mg/Kg	1	6.00	0.0065	96	77 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.69	mg/Kg	1	2.00	<0.00473	84	74.6 - 120	4	20
Toluene		1	1.78	mg/Kg	1	2.00	<0.00416	89	77.1 - 120	2	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.00511	94	75 - 120	2	20

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Xylene		1	5.62	mg/Kg	1	6.00	0.0065	94	77 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.03	1.85	mg/Kg	1	2.00	102	92	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.91	1.89	mg/Kg	1	2.00	96	94	69.2 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100568 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85210 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	248	mg/Kg	1	250	6.03	97	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	250	mg/Kg	1	250	6.03	98	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	111	113	mg/Kg	1	100	111	113	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	245	mg/Kg	1	250	6.1	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	247	mg/Kg	1	250	6.1	96	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	112	mg/Kg	1	100	110	112	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100604 | Date Analyzed: 2013-04-17 | Analyzed By: RL
Prep Batch: 85242 | QC Preparation: 2013-04-17 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	241	mg/Kg	1	250	<6.30	96	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	249	mg/Kg	1	250	<6.30	100	90 - 110	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100605 | Date Analyzed: 2013-04-17 | Analyzed By: RL
Prep Batch: 85243 | QC Preparation: 2013-04-17 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	231	mg/Kg	1	250	<6.30	92	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	228	mg/Kg	1	250	<6.30	91	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.2	mg/Kg	1	20.0	<0.230	96	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.4	mg/Kg	1	20.0	<0.230	92	66.9 - 120	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.00	mg/Kg	1	2.00	102	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.09	2.18	mg/Kg	1	2.00	104	109	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.97	mg/Kg	1	2.00	92	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.16	mg/Kg	1	2.00	105	108	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100614 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85252 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	244	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	245	mg/Kg	1	250	<6.30	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100615 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85253 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	249	mg/Kg	1	250	<6.30	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	247	mg/Kg	1	250	<6.30	99	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100620 | Date Analyzed: 2013-04-17 | Analyzed By: RL
Prep Batch: 85257 | QC Preparation: 2013-04-17 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	244	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	243	mg/Kg	1	250	<6.30	97	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100655 | Date Analyzed: 2013-04-19 | Analyzed By: MT
Prep Batch: 85293 | QC Preparation: 2013-04-19 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.64	mg/Kg	1	2.00	<0.00473	82	74.6 - 120
Toluene		1	1.66	mg/Kg	1	2.00	<0.00416	83	77.1 - 120
Ethylbenzene		1	1.74	mg/Kg	1	2.00	<0.00511	87	75 - 120
Xylene		1	5.21	mg/Kg	1	6.00	0.0052	87	77 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.60	mg/Kg	1	2.00	<0.00473	80	74.6 - 120	2	20
Toluene		1	1.64	mg/Kg	1	2.00	<0.00416	82	77.1 - 120	1	20
Ethylbenzene		1	1.71	mg/Kg	1	2.00	<0.00511	86	75 - 120	2	20
Xylene		1	5.14	mg/Kg	1	6.00	0.0052	86	77 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.76	mg/Kg	1	2.00	92	88	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.73	1.72	mg/Kg	1	2.00	86	86	69.2 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100656 | Date Analyzed: 2013-04-19 | Analyzed By: MT
Prep Batch: 85293 | QC Preparation: 2013-04-19 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.2	mg/Kg	1	20.0	<0.230	81	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	16.3	mg/Kg	1	20.0	<0.230	82	66.9 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.83	1.83	mg/Kg	1	2.00	92	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.08	mg/Kg	1	2.00	105	104	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326135

QC Batch: 100515 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	14.2	mg/Kg	1	20.0	<0.230	71	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	14.3	mg/Kg	1	20.0	<0.230	72	38.8 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.66	mg/Kg	1	2	86	83	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.18	2.17	mg/Kg	1	2	109	108	77.7 - 120

Matrix Spike (xMS-1) Spiked Sample: 326135

QC Batch: 100516 | Date Analyzed: 2013-04-16 | Analyzed By: JS
Prep Batch: 85170 | QC Preparation: 2013-04-16 | Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	1.68	mg/Kg	1	2.00	<0.00473	84	68.8 - 120
Toluene		[1]	1.74	mg/Kg	1	2.00	<0.00416	87	71.8 - 122
Ethylbenzene		[1]	1.86	mg/Kg	1	2.00	<0.00511	93	75 - 130
Xylene		[1]	5.52	mg/Kg	1	6.00	0.0064	92	75.4 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.71	mg/Kg	1	2.00	<0.00473	86	68.8 - 120	2	20
Toluene		1	1.78	mg/Kg	1	2.00	<0.00416	89	71.8 - 122	2	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00511	94	75 - 130	2	20
Xylene		1	5.66	mg/Kg	1	6.00	0.0064	94	75.4 - 129	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.87	mg/Kg	1	2	93	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.84	1.88	mg/Kg	1	2	92	94	69.2 - 120

Matrix Spike (MS-1) Spiked Sample: 326147

QC Batch: 100568 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85210 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	195	mg/Kg	1	250	5.52	76	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	199	mg/Kg	1	250	5.52	77	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	109	112	mg/Kg	1	100	109	112	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326148

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	216	mg/Kg	1	250	7.56	83	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	215	mg/Kg	1	250	7.56	83	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	114	114	mg/Kg	1	100	114	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326137

QC Batch: 100604 | Date Analyzed: 2013-04-17 | Analyzed By: RL
Prep Batch: 85242 | QC Preparation: 2013-04-17 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	1270	mg/Kg	5	1250	47.1	98	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	1270	mg/Kg	5	1250	47.1	98	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326145

QC Batch: 100605 | Date Analyzed: 2013-04-17 | Analyzed By: RL
Prep Batch: 85243 | QC Preparation: 2013-04-17 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2840	mg/Kg	5	1250	1530	105	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		[1]	2890	mg/Kg	5	1250	1530	109	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326423

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	18.0	mg/Kg	1	20.0	<0.230	90	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	17.8	mg/Kg	1	20.0	<0.230	89	38.8 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.06	1.99	mg/Kg	1	2	103	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.28	2.27	mg/Kg	1	2	114	114	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326425

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	17.6	mg/Kg	1	20.0	<0.230	88	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	18.7	mg/Kg	1	20.0	<0.230	94	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.91	mg/Kg	1	2	104	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.35	2.19	mg/Kg	1	2	118	110	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326160

QC Batch: 100614 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85252 QC Preparation: 2013-04-18 Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2240	mg/Kg	5	1250	850	111	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2250	mg/Kg	5	1250	850	112	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85253 QC Preparation: 2013-04-18 Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2340	mg/Kg	5	1250	934	112	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2330	mg/Kg	5	1250	934	112	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326153

QC Batch: 100620 Date Analyzed: 2013-04-17 Analyzed By: RL
Prep Batch: 85257 QC Preparation: 2013-04-17 Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	3180	mg/Kg	5	1250	1810	110	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	3260	mg/Kg	5	1250	1810	116	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326678

QC Batch: 100655 | Date Analyzed: 2013-04-19 | Analyzed By: MT
Prep Batch: 85293 | QC Preparation: 2013-04-19 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.75	mg/Kg	1	2.00	<0.00473	88	68.8 - 120
Toluene		1	1.82	mg/Kg	1	2.00	<0.00416	91	71.8 - 122
Ethylbenzene		1	1.93	mg/Kg	1	2.00	<0.00511	96	75 - 130
Xylene		1	5.70	mg/Kg	1	6.00	<0.00430	95	75.4 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.73	mg/Kg	1	2.00	<0.00473	86	68.8 - 120	1	20
Toluene		1	1.80	mg/Kg	1	2.00	<0.00416	90	71.8 - 122	1	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	<0.00511	94	75 - 130	2	20
Xylene		1	5.68	mg/Kg	1	6.00	<0.00430	95	75.4 - 129	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.87	mg/Kg	1	2	94	94	69.6 - 120
4-Bromofluorobenzene (4-BFB)	1.90	1.89	mg/Kg	1	2	95	94	69.2 - 120

Matrix Spike (MS-1) Spiked Sample: 326678

QC Batch: 100656 | Date Analyzed: 2013-04-19 | Analyzed By: MT
Prep Batch: 85293 | QC Preparation: 2013-04-19 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[1]	17.0	mg/Kg	1	20.0	<0.230	85	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[1]	18.5	mg/Kg	1	20.0	<0.230	92	38.8 - 120	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.98	2.01	mg/Kg	1	2	99	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.26	2.32	mg/Kg	1	2	113	116	77.7 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 100515 Date Analyzed: 2013-04-16 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.842	84	80 - 120	2013-04-16

Standard (CCV-2)

QC Batch: 100515 Date Analyzed: 2013-04-16 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.834	83	80 - 120	2013-04-16

Standard (CCV-3)

QC Batch: 100515 Date Analyzed: 2013-04-16 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.920	92	80 - 120	2013-04-16

Standard (CCV-1)

QC Batch: 100516 Date Analyzed: 2013-04-16 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0932	93	80 - 120	2013-04-16
Toluene		1	mg/kg	0.100	0.0853	85	80 - 120	2013-04-16

continued . . .

standard continued . . .

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ethylbenzene		1	mg/kg	0.100	0.0858	86	80 - 120	2013-04-16
Xylene		1	mg/kg	0.300	0.258	86	80 - 120	2013-04-16

Standard (CCV-2)

QC Batch: 100516 Date Analyzed: 2013-04-16 Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0876	88	80 - 120	2013-04-16
Toluene		1	mg/kg	0.100	0.0858	86	80 - 120	2013-04-16
Ethylbenzene		1	mg/kg	0.100	0.0854	85	80 - 120	2013-04-16
Xylene		1	mg/kg	0.300	0.255	85	80 - 120	2013-04-16

Standard (CCV-1)

QC Batch: 100568 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	263	105	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100568 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	244	98	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100568 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	239	96	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2013-04-17

Standard (CCV-4)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100604 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-04-17

Standard (CCV-2)

QC Batch: 100604 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.8	99	90 - 110	2013-04-17

Standard (CCV-1)

QC Batch: 100605 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	22.7	91	90 - 110	2013-04-17

Standard (CCV-2)

QC Batch: 100605 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.4	98	90 - 110	2013-04-17

Standard (CCV-1)

QC Batch: 100610 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100610 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.801	80	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100610 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.883	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.999	100	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100614 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	23.7	95	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100614 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.5	98	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.5	98	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100620 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.4	98	90 - 110	2013-04-17

Standard (CCV-2)

QC Batch: 100620 Date Analyzed: 2013-04-17 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.2	97	90 - 110	2013-04-17

Standard (CCV-1)

QC Batch: 100655 Date Analyzed: 2013-04-19 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0898	90	80 - 120	2013-04-19
Toluene		1	mg/kg	0.100	0.0820	82	80 - 120	2013-04-19
Ethylbenzene		1	mg/kg	0.100	0.0814	81	80 - 120	2013-04-19
Xylene		1	mg/kg	0.300	0.245	82	80 - 120	2013-04-19

Standard (CCV-2)

QC Batch: 100655 Date Analyzed: 2013-04-19 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0870	87	80 - 120	2013-04-19
Toluene		1	mg/kg	0.100	0.0833	83	80 - 120	2013-04-19
Ethylbenzene		1	mg/kg	0.100	0.0836	84	80 - 120	2013-04-19
Xylene		1	mg/kg	0.300	0.250	83	80 - 120	2013-04-19

Standard (CCV-1)

QC Batch: 100656 Date Analyzed: 2013-04-19 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.942	94	80 - 120	2013-04-19

Standard (CCV-2)

QC Batch: 100656 | Date Analyzed: 2013-04-19 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.949	95	80 - 120	2013-04-19

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Sample dilution due to surfactants.
2 Sample dilution due to hydrocarbons.
3 Dilution due to excessive hyddrocarbons.
4 Sample dilution due to surfactants.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13041207

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-11-2013 PAGE 1 OF 3

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MC

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: Mtn/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☒	MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐	TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐	HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐	TCLP VOC ☐	TCLP - PEST ☐	HERB ☐	Semi-VOC ☐	TOTAL METALS (RCRA) ☐	OTHER LIST ☐	LEAD - TOTAL ☐	D.W. 200.8 ☐	TCLP ☐	RCI ☐	TOX ☐	FLASHPOINT ☐	TDS ☐	TSS ☐	% MOISTURE ☐	CYANIDE ☐	pH ☐	HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐	PECHLORATE ☐	CHLORIDE ☒	ANIONS ☐	ALKALINITY ☐	FIELD NOTES
BH-4, 0'		4/11/13	09:25	S	1			✓	✓		✓		✓			✓	✓																											✓			326128
BH-4, 5'		4/11/13	09:30	S	1			✓	✓		✓		✓			✓	✓																											✓			129
BH-4, 10'		4/11/13	09:40	S	1			✓	✓		✓		✓			✓	✓																											✓			130
BH-4, 15'		4/11/13	09:44	S	1			✓	✓		✓		✓			✓	✓																											✓			131
BH-4, 20'		4/11/13	09:50	S	1			✓	✓		✓		✓			✓	✓																											✓			132
BH-4, 25'		4/11/13	10:09	S	1			✓	✓		✓		✓			✓	✓																											✓			133
BH-4, 30'		4/11/13	10:10	S	1			✓	✓		✓		✓			✓	✓																											✓			134
BH-4, 40'		4/11/13	10:20	S	1			✓	✓		✓		✓			✓	✓																											✓			135
BH-4, 50'		4/11/13	10:35	S	1			✓	✓		✓		✓			✓	✓																											✓			136
BH-5, 0'		4/11/13	10:50	S	1			✓	✓		✓		✓			✓	✓																											✓			137
BH-5, 5'		4/11/13	10:55	S	1			✓	✓		✓		✓			✓	✓																											✓			138
BH-5, 10'		4/11/13	11:00	S	1			✓	✓		✓		✓			✓	✓																											✓			139
BH-5, 15'		4/11/13	11:05	S	1			✓	✓		✓		✓			✓	✓																											✓			140
BH-5, 20'		4/11/13	11:10	S	1			✓	✓		✓		✓			✓	✓																											✓			141
BH-5, 25'		4/11/13	11:20	S	1			✓	✓		✓		✓			✓	✓																											✓			142
TOTAL																																														

RELINQUISHED BY:(Signature) DATE/TIME 4/11/13 18:45 RECEIVED BY: (Signature) 4/12/13 9:22

RELINQUISHED BY:(Signature) DATE/TIME 4/12/13 9:22 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY: (Signature) Brenda Ward 4/16/13 9:20

ZP 849428 4° 4.5

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Trace Analysis
RECEIVING TEMP: 1.3° THERM #: 1.3° IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED Lubbock all

AH

1304207

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-11-2013 PAGE 2 OF 3

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: NM Mtn

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-5 30'		4/11/13	11:25	S	1			✓	✓			✓	✓													✓		143
BH-5 40'		4/11/13	11:45	S	1			✓	✓			✓	✓													✓		144
BH-5 50'		4/11/13	11:50	S	1			✓	✓			✓	✓													✓		145
BH-6, 0'		4/11/13	12:05	S	1			✓	✓			✓	✓													✓		146
BH-6, 5'		4/11/13	12:15	S	1			✓	✓			✓	✓													✓		147
BH-6, 10'		4/11/13	12:20	S	1			✓	✓			✓	✓													✓		148
BH-6, 15'		4/11/13	12:25	S	1			✓	✓			✓	✓													✓		149
BH-6, 20'		4/11/13	12:30	S	1			✓	✓			✓	✓													✓		150
BH-6, 25'		4/11/13	12:40	S	1			✓	✓			✓	✓													✓		151
BH-6, 30'		4/11/13	12:50	S	1			✓	✓			✓	✓													✓		152
BH-6, 40'		4/11/13	13:00	S	1			✓	✓			✓	✓													✓		153
BH-6, 50		4/11/13	13:10	S	1			✓	✓			✓	✓													✓		154
BH-7, 0'		4/11/13	14:00	S	1			✓	✓			✓	✓													✓		155
BH-7, 5'		4/11/13	14:03	S	1			✓	✓			✓	✓													✓		156
BH-7, 10'		4/11/13	14:05	S	1			✓	✓			✓	✓													✓		157
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/11/13 18:45 RECEIVED BY: (Signature) R.W. Brock 4/12/13 9:22

RELINQUISHED BY:(Signature) DATE/TIME 4-12-13 9:22 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 4/16/13 RECEIVED BY: (Signature) Brenda Ward

LS ZP849 4/28 4.2/4.5

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Trace Analysis

RECEIVING TEMP: 1.3° THERM #: IR-1

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL #

☑ HAND DELIVERED

13041207

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-11-2013 PAGE 3 OF 3
PO #: LAB WORK ORDER #:
PROJECT LOCATION OR NAME: Legacy / Chamberlin
LAI PROJECT #: 12-0126-01 COLLECTOR: ML

TRRP report? ☐ Yes ☑ No
TIME ZONE: Time zone/State: Mtn/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-7, 15'		4/11/13	14:10	S	1				✓			✓	✓													✓		158
BH-7, 20'		4/11/13	14:28	S	1				✓			✓	✓													✓		159
BH-7, 25'		4/11/13	14:45	S	1				✓			✓	✓													✓		160
BH-7, 30'		4/11/13	14:50	S	1				✓			✓	✓													✓		161
BH-7, 40'		4/11/13	15:05	S	1				✓			✓	✓													✓		162
BH-7, 50'		4/11/13	15:10	S	1				✓			✓	✓													✓		163
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/11/13 18:45 RECEIVED BY: (Signature) K.W. Brock 4-12-13 9:22
RELINQUISHED BY:(Signature) K.L. Rose 4-12-13 DATE/TIME 9:22 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY: (Signature) 4/16/13 Brenda Ward
LS ZP 849428 4:24/5

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.3° THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED

Trace analysis

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 22, 2013

Work Order: 13041610

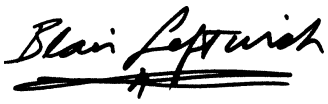
Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326420	BH-8. 0’	soil	2013-04-12	09:22	2013-04-15
326421	BH-8. 5’	soil	2013-04-12	09:25	2013-04-15
326422	BH-8. 10’	soil	2013-04-12	09:30	2013-04-15
326423	BH-8. 15’	soil	2013-04-12	09:35	2013-04-15
326424	BH-8. 20’	soil	2013-04-12	09:40	2013-04-15
326425	BH-8. 25’	soil	2013-04-12	10:05	2013-04-15
326426	BH-8. 30’	soil	2013-04-12	10:20	2013-04-15
326427	BH-8. 40’	soil	2013-04-12	10:30	2013-04-15
326428	BH-8. 50’	soil	2013-04-12	10:38	2013-04-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 30 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-04-15 and assigned to work order 13041610. Samples for work order 13041610 were received intact at a temperature of 4.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	85253	2013-04-18 at 12:00	100615	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85254	2013-04-18 at 12:00	100617	2013-04-18 at 13:11
TPH DRO - NEW	S 8015 D	85211	2013-04-17 at 09:30	100569	2013-04-17 at 16:45
TPH DRO - NEW	S 8015 D	85212	2013-04-17 at 10:00	100570	2013-04-17 at 23:00
TPH GRO	S 8015 D	85247	2013-04-18 at 16:03	100610	2013-04-18 at 16:03
TPH GRO	S 8015 D	85248	2013-04-18 at 16:03	100612	2013-04-18 at 16:03

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041610 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	**30.1**	mg/Kg	1	25.0

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	69.6 - 124

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	77.7 - 120

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**65.7**		mg/Kg	1	25.0

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.22	mg/Kg	1	2.00	111	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**1150**		mg/Kg	5	25.0

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	77.7 - 120

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**2370**		mg/Kg	5	25.0

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**934**	mg/Kg	5	25.0

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	77.7 - 120

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**853**	mg/Kg	5	25.0

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.16	mg/Kg	1	2.00	108	77.7 - 120

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**1650**	mg/Kg	5	25.0

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	77.7 - 120

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**945**	mg/Kg	5	25.0

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.22	mg/Kg	1	2.00	111	77.7 - 120

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**118**		mg/Kg	1	25.0

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.40	mg/Kg	1	2.00	120	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.29	mg/Kg	1	2.00	114	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 100569

QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	QC Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	6.10	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Method Blank (1) QC Batch: 100570

QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	QC Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	7.14	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Method Blank (1) QC Batch: 100610

QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	QC Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	77.7 - 120

Method Blank (1) QC Batch: 100612

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT
Prep Batch: 85248 QC Preparation: 2013-04-18 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	77.7 - 120

Method Blank (1) QC Batch: 100615

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85253 QC Preparation: 2013-04-18 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100617

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85254 QC Preparation: 2013-04-18 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	245	mg/Kg	1	250	6.1	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	247	mg/Kg	1	250	6.1	96	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	112	mg/Kg	1	100	110	112	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	247	mg/Kg	1	250	7.14	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	242	mg/Kg	1	250	7.14	94	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	111	mg/Kg	1	100	116	111	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.2	mg/Kg	1	20.0	<0.230	96	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.4	mg/Kg	1	20.0	<0.230	92	66.9 - 120	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.00	mg/Kg	1	2.00	102	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.09	2.18	mg/Kg	1	2.00	104	109	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.97	mg/Kg	1	2.00	92	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.16	mg/Kg	1	2.00	105	108	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100615 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85253 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	249	mg/Kg	1	250	<6.30	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	247	mg/Kg	1	250	<6.30	99	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	246	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	245	mg/Kg	1	250	<6.30	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326148

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	216	mg/Kg	1	250	7.56	83	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	215	mg/Kg	1	250	7.56	83	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	114	114	mg/Kg	1	100	114	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	7.38	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	217	mg/Kg	1	250	7.38	84	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	116	113	mg/Kg	1	100	116	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326423

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.0	mg/Kg	1	20.0	<0.230	90	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.8	mg/Kg	1	20.0	<0.230	89	38.8 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.06	1.99	mg/Kg	1	2	103	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.28	2.27	mg/Kg	1	2	114	114	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326425

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.7	mg/Kg	1	20.0	<0.230	94	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.91	mg/Kg	1	2	104	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.35	2.19	mg/Kg	1	2	118	110	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100615 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85253 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2340	mg/Kg	5	1250	934	112	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2330	mg/Kg	5	1250	934	112	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326427

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2360	mg/Kg	5	1250	945	113	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2390	mg/Kg	5	1250	945	116	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	239	96	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2013-04-17

Standard (CCV-4)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	246	98	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	240	96	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.801	80	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100610 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.883	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.999	100	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.5	98	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-04-18

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13041610

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-12-2013 PAGE 1 OF 1

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-8, 0'	420	4/12/13	09:22	S	1			✓	✓			✓	✓													✓		
BH-8, 5'	421	4/12/13	09:25	S	1			✓	✓			✓	✓													✓		
BH-8, 10'	422	4/12/13	09:30	S	1			✓	✓			✓	✓													✓		
BH-8, 15'	423	4/12/13	09:35	S	1			✓	✓			✓	✓													✓		
BH-8, 20'	424	4/12/13	09:40	S	1			✓	✓			✓	✓													✓		
BH-8, 25'	425	4/12/13	10:05	S	1			✓	✓			✓	✓													✓		
BH-8, 30'	426	4/12/13	10:20	S	1			✓	✓			✓	✓													✓		
BH-8, 40'	427	4/12/13	10:30	S	1			✓	✓			✓	✓													✓		
BH-8, 50'	428	4/12/13	10:38	S	1			✓	✓			✓	✓													✓		
SP-1 (South)	429	4/12/13	10:40	S	1			✓	✓			✓	✓													✓		
SP-2 (North)	430	4/12/13	10:45	S	1			✓	✓			✓	✓													✓		
HA-1 (0.5')	431	4/12/13	11:30	S	1			✓	✓			✓	✓													✓		
HA-2 (0.5')	432	4/12/13	11:35	S	1			✓	✓			✓	✓													✓		
HA-3 (0.5')	433	4/12/13	11:40	S	1			✓	✓			✓	✓													✓		
HA-4 (0.5')	434	4/12/13	11:45	S	1			✓	✓			✓	✓													✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/12/2013 15:50 RECEIVED BY:(Signature) Trace Analysis

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/16/13 RECEIVED BY:(Signature) Brenda Ward 4.2 | 4.5 LS 849

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1 THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED Lubbock - all

TRACEANALYSIS, INC.

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Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 22, 2013

Work Order: 13041610

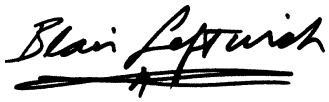
Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326420	BH-8. 0’	soil	2013-04-12	09:22	2013-04-15
326421	BH-8. 5’	soil	2013-04-12	09:25	2013-04-15
326422	BH-8. 10’	soil	2013-04-12	09:30	2013-04-15
326423	BH-8. 15’	soil	2013-04-12	09:35	2013-04-15
326424	BH-8. 20’	soil	2013-04-12	09:40	2013-04-15
326425	BH-8. 25’	soil	2013-04-12	10:05	2013-04-15
326426	BH-8. 30’	soil	2013-04-12	10:20	2013-04-15
326427	BH-8. 40’	soil	2013-04-12	10:30	2013-04-15
326428	BH-8. 50’	soil	2013-04-12	10:38	2013-04-15
326429	SP-1 (South)	soil	2013-04-12	10:40	2013-04-15
326430	SP-2 (North)	soil	2013-04-12	10:45	2013-04-15
326431	HA-1 (0.5’)	soil	2013-04-12	11:30	2013-04-15
326432	HA-2 (0.5’)	soil	2013-04-12	11:35	2013-04-15
326433	HA-3 (0.5’)	soil	2013-04-12	11:40	2013-04-15
326434	HA-4 (0.5’)	soil	2013-04-12	11:45	2013-04-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 38 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-04-15 and assigned to work order 13041610. Samples for work order 13041610 were received intact at a temperature of 4.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	85253	2013-04-18 at 12:00	100615	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85254	2013-04-18 at 12:00	100617	2013-04-18 at 13:11
Chloride (IC)	E 300.0	85287	2013-04-19 at 12:00	100650	2013-04-19 at 16:46
TPH DRO - NEW	S 8015 D	85211	2013-04-17 at 09:30	100569	2013-04-17 at 16:45
TPH DRO - NEW	S 8015 D	85212	2013-04-17 at 10:00	100570	2013-04-17 at 23:00
TPH GRO	S 8015 D	85247	2013-04-18 at 16:03	100610	2013-04-18 at 16:03
TPH GRO	S 8015 D	85248	2013-04-18 at 16:03	100612	2013-04-18 at 16:03

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041610 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	**30.1**	mg/Kg	1	25.0

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 326420 - BH-8. 0'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	69.6 - 124

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.23	mg/Kg	1	2.00	112	77.7 - 120

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**65.7**		mg/Kg	1	25.0

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326421 - BH-8. 5'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.22	mg/Kg	1	2.00	111	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**1150**		mg/Kg	5	25.0

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326422 - BH-8. 10'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.04	mg/Kg	1	2.00	102	77.7 - 120

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**2370**	mg/Kg	5	25.0

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

Sample: 326423 - BH-8. 15'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.17	mg/Kg	1	2.00	108	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	77.7 - 120

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100615	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85253	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**934**	mg/Kg	5	25.0

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326424 - BH-8. 20'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.66	mg/Kg	1	2.00	83	77.7 - 120

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**853**		mg/Kg	5	25.0

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326425 - BH-8. 25'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.27	mg/Kg	1	2.00	114	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.16	mg/Kg	1	2.00	108	77.7 - 120

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride		1	**1650**		mg/Kg	5	25.0

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Jb	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326426 - BH-8. 30'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.18	mg/Kg	1	2.00	109	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	77.7 - 120

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	**945**	mg/Kg	5	25.0

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

Sample: 326427 - BH-8. 40'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	1	2.00	115	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.22	mg/Kg	1	2.00	111	77.7 - 120

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	**118**	mg/Kg	1	25.0

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 326428 - BH-8. 50'

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.40	mg/Kg	1	2.00	120	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.29	mg/Kg	1	2.00	114	77.7 - 120

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**205**	mg/Kg	5	25.0

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	77.7 - 120

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1440**	mg/Kg	5	25.0

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**85.2**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	70 - 130

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [1]	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	5	2.00	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	5	2.00	103	77.7 - 120

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100650	Date Analyzed:	2013-04-19	Analyzed By:	RL
Prep Batch:	85287	Sample Preparation:	2013-04-19	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**5540**	mg/Kg	20	25.0

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**144**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		140	mg/Kg	1	100	140	70 - 130

Sample: 326431 - HA-1 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter		Flag	Cert	RL Result	Units	Dilution	RL
GRO	2	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.15	mg/Kg	5	2.00	108	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.18	mg/Kg	5	2.00	109	77.7 - 120

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**306**	mg/Kg	2	25.0

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**95.5**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Sample: 326432 - HA-2 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [3]	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.91	mg/Kg	5	2.00	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	5	2.00	104	77.7 - 120

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**45.8**	mg/Kg	1	25.0

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 326433 - HA-3 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.19	mg/Kg	1	2.00	110	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	77.7 - 120

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**47.5**	mg/Kg	1	25.0

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326434 - HA-4 (0.5')

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.51	mg/Kg	1	2.00	126	69.6 - 124
4-Bromofluorobenzene (4-BFB)				2.33	mg/Kg	1	2.00	116	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 100569

QC Batch:	100569	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85211	QC Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	6.10	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Method Blank (1) QC Batch: 100570

QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	QC Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	7.14	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Method Blank (1) QC Batch: 100610

QC Batch:	100610	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85247	QC Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.06	mg/Kg	1	2.00	103	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	77.7 - 120

Method Blank (1) QC Batch: 100612

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT
Prep Batch: 85248 QC Preparation: 2013-04-18 Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	77.7 - 120

Method Blank (1) QC Batch: 100615

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85253 QC Preparation: 2013-04-18 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100617

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL
Prep Batch: 85254 QC Preparation: 2013-04-18 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Method Blank (1) QC Batch: 100650

QC Batch:	100650	Date Analyzed:	2013-04-19	Analyzed By:	RL
Prep Batch:	85287	QC Preparation:	2013-04-19	Prepared By:	RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	245	mg/Kg	1	250	6.1	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	247	mg/Kg	1	250	6.1	96	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	110	112	mg/Kg	1	100	110	112	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	247	mg/Kg	1	250	7.14	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	242	mg/Kg	1	250	7.14	94	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	111	mg/Kg	1	100	116	111	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	19.2	mg/Kg	1	20.0	<0.230	96	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.4	mg/Kg	1	20.0	<0.230	92	66.9 - 120	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.04	2.00	mg/Kg	1	2.00	102	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.09	2.18	mg/Kg	1	2.00	104	109	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.97	mg/Kg	1	2.00	92	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.16	mg/Kg	1	2.00	105	108	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100615 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85253 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	249	mg/Kg	1	250	<6.30	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	247	mg/Kg	1	250	<6.30	99	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	246	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	245	mg/Kg	1	250	<6.30	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 100650 | Date Analyzed: 2013-04-19 | Analyzed By: RL
Prep Batch: 85287 | QC Preparation: 2013-04-19 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	254	mg/Kg	1	250	<6.30	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	251	mg/Kg	1	250	<6.30	100	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326148

QC Batch: 100569 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85211 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	216	mg/Kg	1	250	7.56	83	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	215	mg/Kg	1	250	7.56	83	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	114	114	mg/Kg	1	100	114	114	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	7.38	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	217	mg/Kg	1	250	7.38	84	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	116	113	mg/Kg	1	100	116	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326423

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85247 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.0	mg/Kg	1	20.0	<0.230	90	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.8	mg/Kg	1	20.0	<0.230	89	38.8 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.06	1.99	mg/Kg	1	2	103	100	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.28	2.27	mg/Kg	1	2	114	114	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326425

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.7	mg/Kg	1	20.0	<0.230	94	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.91	mg/Kg	1	2	104	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.35	2.19	mg/Kg	1	2	118	110	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100615 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85253 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2340	mg/Kg	5	1250	934	112	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2330	mg/Kg	5	1250	934	112	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326427

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2360	mg/Kg	5	1250	945	113	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2390	mg/Kg	5	1250	945	116	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326431

QC Batch: 100650 | Date Analyzed: 2013-04-19 | Analyzed By: RL
Prep Batch: 85287 | QC Preparation: 2013-04-19 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	11300	mg/Kg	20	5000	5540	115	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	11300	mg/Kg	20	5000	5540	115	80 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 100569 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	234	94	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100569 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	239	96	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100569 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	242	97	80 - 120	2013-04-17

Standard (CCV-4)

QC Batch: 100569 Date Analyzed: 2013-04-17 Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	246	98	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	240	96	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.14	114	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100610 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.801	80	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100610 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.883	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.999	100	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100612 Date Analyzed: 2013-04-18 Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.5	98	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100615 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100617 Date Analyzed: 2013-04-18 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-04-18

Standard (CCV-1)

QC Batch: 100650 Date Analyzed: 2013-04-19 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	27.5	110	90 - 110	2013-04-19

Standard (CCV-2)

QC Batch: 100650 Date Analyzed: 2013-04-19 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.1	100	90 - 110	2013-04-19

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Dilution due to surfactants.
2 Dilution due to surfactants.
3 Dilution due to surfactants.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13041610

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-12-2013 PAGE 1 OF 1

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-8, 0'	420	4/12/13	09:22	S	1			✓	✓			✓	✓													✓		
BH-8, 5'	421	4/12/13	09:25	S	1			✓	✓			✓	✓													✓		
BH-8, 10'	422	4/12/13	09:30	S	1			✓	✓			✓	✓													✓		
BH-8, 15'	423	4/12/13	09:35	S	1			✓	✓			✓	✓													✓		
BH-8, 20'	424	4/12/13	09:40	S	1			✓	✓			✓	✓													✓		
BH-8, 25'	425	4/12/13	10:05	S	1			✓	✓			✓	✓													✓		
BH-8, 30'	426	4/12/13	10:20	S	1			✓	✓			✓	✓													✓		
BH-8, 40'	427	4/12/13	10:30	S	1			✓	✓			✓	✓													✓		
BH-8, 50'	428	4/12/13	10:38	S	1			✓	✓			✓	✓													✓		
SP-1 (South)	429	4/12/13	10:40	S	1			✓	✓			✓	✓													✓		
SP-2 (North)	430	4/12/13	10:45	S	1			✓	✓			✓	✓													✓		
HA-1 (0.5')	431	4/12/13	11:30	S	1			✓	✓			✓	✓													✓		
HA-2 (0.5')	432	4/12/13	11:35	S	1			✓	✓			✓	✓													✓		
HA-3 (0.5')	433	4/12/13	11:40	S	1			✓	✓			✓	✓													✓		
HA-4 (0.5')	434	4/12/13	11:45	S	1			✓	✓			✓	✓													✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/12/2013 15:50 RECEIVED BY:(Signature) Trace Analysis

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/16/13 RECEIVED BY:(Signature) Brenda Ward 4.2 | 4.5 LS 849

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1 THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED Lubbock - all

TRACEANALYSIS, INC.

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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Coty Woolf
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 22, 2013

Work Order: 13041610

Project Name: Legacy - Chamberlin
Project Number: 12-0126-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
326429	SP-1 (South)	soil	2013-04-12	10:40	2013-04-15
326430	SP-2 (North)	soil	2013-04-12	10:45	2013-04-15

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 14 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
Dr. Michael Abel, Project Manager

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Case Narrative

Samples for project Legacy - Chamberlin were received by TraceAnalysis, Inc. on 2013-04-15 and assigned to work order 13041610. Samples for work order 13041610 were received intact at a temperature of 4.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (IC)	E 300.0	85254	2013-04-18 at 12:00	100617	2013-04-18 at 13:11
TPH DRO - NEW	S 8015 D	85212	2013-04-17 at 10:00	100570	2013-04-17 at 23:00
TPH GRO	S 8015 D	85248	2013-04-18 at 16:03	100612	2013-04-18 at 16:03

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13041610 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1	**205**	mg/Kg	5	25.0

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Jb	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			113	mg/Kg	1	100	113	70 - 130

Sample: 326429 - SP-1 (South)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.26	mg/Kg	1	2.00	113	69.6 - 124

continued ...

sample continued . . .

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			2.12	mg/Kg	1	2.00	106	77.7 - 120

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	100617	Date Analyzed:	2013-04-18	Analyzed By:	RL
Prep Batch:	85254	Sample Preparation:	2013-04-18	Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	**1440**	mg/Kg	5	25.0

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	100570	Date Analyzed:	2013-04-17	Analyzed By:	CM
Prep Batch:	85212	Sample Preparation:	2013-04-17	Prepared By:	DS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**85.2**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	70 - 130

Sample: 326430 - SP-2 (North)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	100612	Date Analyzed:	2013-04-18	Analyzed By:	MT
Prep Batch:	85248	Sample Preparation:	2013-04-18	Prepared By:	MT

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [1]	U	1	<20.0	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.80	mg/Kg	5	2.00	90	69.6 - 124
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	5	2.00	103	77.7 - 120

Method Blanks

Method Blank (1) QC Batch: 100570

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	7.14	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			129	mg/Kg	1	100	129	70 - 130

Method Blank (1) QC Batch: 100612

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<0.230	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.10	mg/Kg	1	2.00	105	69.6 - 124
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	77.7 - 120

Method Blank (1) QC Batch: 100617

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<6.30	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	247	mg/Kg	1	250	7.14	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	242	mg/Kg	1	250	7.14	94	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	111	mg/Kg	1	100	116	111	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	66.9 - 120	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.84	1.97	mg/Kg	1	2.00	92	98	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.10	2.16	mg/Kg	1	2.00	105	108	77.7 - 120

Laboratory Control Spike (LCS-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	246	mg/Kg	1	250	<6.30	98	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	245	mg/Kg	1	250	<6.30	98	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 326424

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM
Prep Batch: 85212 | QC Preparation: 2013-04-17 | Prepared By: DS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	222	mg/Kg	1	250	7.38	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	217	mg/Kg	1	250	7.38	84	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	116	113	mg/Kg	1	100	116	113	70 - 130

Matrix Spike (MS-1) Spiked Sample: 326425

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT
Prep Batch: 85248 | QC Preparation: 2013-04-18 | Prepared By: MT

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.6	mg/Kg	1	20.0	<0.230	88	38.8 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	18.7	mg/Kg	1	20.0	<0.230	94	38.8 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.08	1.91	mg/Kg	1	2	104	96	69.6 - 124
4-Bromofluorobenzene (4-BFB)	2.35	2.19	mg/Kg	1	2	118	110	77.7 - 120

Matrix Spike (MS-1) Spiked Sample: 326427

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL
Prep Batch: 85254 | QC Preparation: 2013-04-18 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2360	mg/Kg	5	1250	945	113	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2390	mg/Kg	5	1250	945	116	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-1)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	237	95	80 - 120	2013-04-17

Standard (CCV-2)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	246	98	80 - 120	2013-04-17

Standard (CCV-3)

QC Batch: 100570 | Date Analyzed: 2013-04-17 | Analyzed By: CM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	240	96	80 - 120	2013-04-17

Standard (CCV-1)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.999	100	80 - 120	2013-04-18

Standard (CCV-2)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.924	92	80 - 120	2013-04-18

Standard (CCV-3)

QC Batch: 100612 | Date Analyzed: 2013-04-18 | Analyzed By: MT

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2013-04-18

Standard (CCV-1)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	24.7	99	90 - 110	2013-04-18

Standard (CCV-2)

QC Batch: 100617 | Date Analyzed: 2013-04-18 | Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	25.0	25.0	100	90 - 110	2013-04-18

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Dilution due to surfactants.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

13041610

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 4-12-2013 PAGE 1 OF 1

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Legacy / Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: MJL

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☑ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
BH-8, 0'	420	4/12/13	09:22	S	1			✓	✓			✓	✓													✓		
BH-8, 5'	421	4/12/13	09:25	S	1			✓	✓			✓	✓													✓		
BH-8, 10'	422	4/12/13	09:30	S	1			✓	✓			✓	✓													✓		
BH-8, 15'	423	4/12/13	09:35	S	1			✓	✓			✓	✓													✓		
BH-8, 20'	424	4/12/13	09:40	S	1			✓	✓			✓	✓													✓		
BH-8, 25'	425	4/12/13	10:05	S	1			✓	✓			✓	✓													✓		
BH-8, 30'	426	4/12/13	10:20	S	1			✓	✓			✓	✓													✓		
BH-8, 40'	427	4/12/13	10:30	S	1			✓	✓			✓	✓													✓		
BH-8, 50'	428	4/12/13	10:38	S	1			✓	✓			✓	✓													✓		
SP-1 (South)	429	4/12/13	10:40	S	1			✓	✓			✓	✓													✓		
SP-2 (North)	430	4/12/13	10:45	S	1			✓	✓			✓	✓													✓		
HA-1 (0.5')	431	4/12/13	11:30	S	1			✓	✓			✓	✓													✓		
HA-2 (0.5')	432	4/12/13	11:35	S	1			✓	✓			✓	✓													✓		
HA-3 (0.5')	433	4/12/13	11:40	S	1			✓	✓			✓	✓													✓		
HA-4 (0.5')	434	4/12/13	11:45	S	1			✓	✓			✓	✓													✓		
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 4/12/2013 15:50 RECEIVED BY:(Signature) Trace Analysis

RELINQUISHED BY:(Signature) DATE/TIME 4/15/13 15:30 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 4/16/13 RECEIVED BY:(Signature) Brenda Ward 4.2 | 4.5 LS 849

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1 THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED Lubbock - all

PERMIAN BASIN
ENVIRONMENTAL LAB, LP
10014 SCR 1213
Midland, TX 79706

PBELAB

Analytical Report

Prepared for:

Coty Woolf
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Location: None Given

Lab Order Number: 3F12001

NELAP/TCEQ # T104704156-12-1

Report Date: 06/18/13

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SP-3	3F12001-01	Soil	06/11/13 11:10	06-12-2013 10:10

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

SP-3

3F12001-01 (Soil)

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Organics by GC									
Diesel Range Organics	**2340**	15.3	mg/kg dry	1	P3F1301	06/12/13	06/12/13	EPA 8015M	
Gasoline Range Hydrocarbons	ND	15.3	mg/kg dry	1	P3F1301	06/12/13	06/12/13	EPA 8015M	
Surrogate: 1-Chlorooctane		*54.3 %*	*70-130*		*P3F1301*	*06/12/13*	*06/12/13*	*EPA 8015M*	*S-GC*
Surrogate: o-Terphenyl		*75.9 %*	*70-130*		*P3F1301*	*06/12/13*	*06/12/13*	*EPA 8015M*	
General Chemistry Parameters by EPA / Standard Methods									
Chloride	**5480**	25.5	mg/kg dry	25	P3F1302	06/13/13	06/13/13	EPA 300.0	
% Moisture	**2.0**	0.1	%	1	P3F1303	06/13/13	06/13/13	% calculation	

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

Organics by GC - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3F1301 - TX 1005										
Blank (P3F1301-BLK1)				Prepared & Analyzed: 06/12/13						
Diesel Range Organics	ND	15.0	mg/kg wet							
Gasoline Range Hydrocarbons	ND	15.0	"							
Surrogate: 1-Chlorooctane	*88.2*		*"*	*100*		*88.2*	*70-130*			
Surrogate: o-Terphenyl	*46.3*		*"*	*50.0*		*92.6*	*70-130*			
LCS (P3F1301-BS1)				Prepared & Analyzed: 06/12/13						
Diesel Range Organics	1000	15.0	mg/kg wet	1000		100	75-125			
Gasoline Range Hydrocarbons	824	15.0	"	1000		82.4	75-125			
Surrogate: 1-Chlorooctane	*88.3*		*"*	*100*		*88.3*	*70-130*			
Surrogate: o-Terphenyl	*39.4*		*"*	*50.0*		*78.8*	*70-130*			
LCS Dup (P3F1301-BSD1)				Prepared & Analyzed: 06/12/13						
Diesel Range Organics	974	15.0	mg/kg wet	1000		97.4	75-125	2.67	20	
Gasoline Range Hydrocarbons	807	15.0	"	1000		80.7	75-125	2.06	20	
Surrogate: 1-Chlorooctane	*85.6*		*"*	*100*		*85.6*	*70-130*			
Surrogate: o-Terphenyl	*36.8*		*"*	*50.0*		*73.6*	*70-130*			
Matrix Spike (P3F1301-MS1)	**Source: 3F11003-02**			Prepared & Analyzed: 06/12/13						
Diesel Range Organics	4520	152	mg/kg dry	1010	5960	NR	75-125			QM-05
Gasoline Range Hydrocarbons	1190	152	"	1010	209	96.9	75-125			
Surrogate: 1-Chlorooctane	*94.4*		*"*	*101*		*93.5*	*70-130*			
Surrogate: o-Terphenyl	*38.9*		*"*	*50.5*		*77.0*	*70-130*			
Matrix Spike Dup (P3F1301-MSD1)	**Source: 3F11003-02**			Prepared & Analyzed: 06/12/13						
Diesel Range Organics	4530	152	mg/kg dry	1010	5960	NR	75-125	NR	20	QM-05
Gasoline Range Hydrocarbons	1170	152	"	1010	209	95.3	75-125	1.72	20	
Surrogate: 1-Chlorooctane	*93.4*		*"*	*101*		*92.5*	*70-130*			
Surrogate: o-Terphenyl	*40.0*		*"*	*50.5*		*79.2*	*70-130*			

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control

Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P3F1302 - * DEFAULT PREP *** **										
Blank (P3F1302-BLK1)				Prepared & Analyzed: 06/13/13						
Chloride	ND	1.00	mg/kg wet							
LCS (P3F1302-BS1)				Prepared & Analyzed: 06/13/13						
Chloride	9.68		mg/kg Wet	10.0		96.8	80-120			
LCS Dup (P3F1302-BSD1)				Prepared & Analyzed: 06/13/13						
Chloride	9.64		mg/kg Wet	10.0		96.4	80-120	0.414	20	
Duplicate (P3F1302-DUP1)		**Source: 3F10003-01**		Prepared & Analyzed: 06/13/13						
Chloride	8420	36.8	mg/kg dry		8410			0.135	20	
Matrix Spike (P3F1302-MS1)		**Source: 3F10003-01**		Prepared & Analyzed: 06/13/13						
Chloride	12600	36.8	mg/kg dry	4040	8410	104	80-120			
Batch P3F1303 - * DEFAULT PREP *** **										
Blank (P3F1303-BLK1)				Prepared & Analyzed: 06/13/13						
% Moisture	ND	0.1	%							
Duplicate (P3F1303-DUP1)		**Source: 3F11001-01**		Prepared & Analyzed: 06/13/13						
% Moisture	ND	0.1	%		0.0				20	

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Legacy /Chamberlin
Project Number: 12-0126-01
Project Manager: Coty Woolf

Fax: (432) 687-0456

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By: Brent Barron Date: 6/18/2013

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

CHAIN-OF-CUSTOD

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 6-11-2013 PAGE 1 OF 1

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: Legacy/Chamberlin

LAI PROJECT #: 12-0126-01 COLLECTOR: SR

Data Reported to: M. Larson/C. Woody

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

3F12001

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ D.W. 200.8 ☐ OTHER LIST ☐	LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐ TCLP ☐	RCI ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	E300	FIELD NOTES
SP-3	-01	6/11/13	11:10	S	1				✓				✓	✓												✓				
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 6/12/13 08:30 RECEIVED BY: (Signature) R.W. Brook

RELINQUISHED BY:(Signature) R.W. Brook 6-12-13 10:10 DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: Permian Basin ELAB
RECEIVING TEMP: 2.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED