OIL CONS. DIV DIST. 3

JUN 13 2016

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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 August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Enterprise Field Services LLC	Contact: Thomas Long
Address: 614 Reilly Ave, Farmington, NM 87401	Telephone No. 505-599-2286
Facility Name: **Lateral K-31**	Facility Type: **Natural Gas Gather Pipeline**

Surface Owner: **BLM**	Mineral Owner: **BLM**	**Serial Number: NM 0020341**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	**9**	**25N**	**6W**	**1674**		**684**		**Rio Arriba**

Latitude 36.41141 Longitude 107.47916

NATURE OF RELEASE

Type of Release: Natural Gas and Condensate	Volume of Release: **17.57 MCF Gas; 5-10 BBLS Liquids**	Volume Recovered: **None**
Source of Release: Internal Corrosion	Date and Hour of Occurrence: **10/15/2015 @ 1:00 p.m.**	Date and Hour of Discovery: **10/15/2015 @ 1:30 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? Courtesy Notification Cory Smith – NMOCD; Katherina Diemer - BLM	
By Whom? Thomas Long	Date and Hour 10/26/2015 @ 7:43 a.m.	
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: On October 15, 2015, Enterprise technicians discovered a natural gas leak in the Lateral K-31 right of way. The pipeline was isolated, depressurized, locked out and tagged out. Repairs and remediation were completed on October 28, 2015.

Describe Area Affected and Cleanup Action Taken: The soil contaminant mass was removed by mechanical excavation. The final excavation measured approximately 49 feet long by 16 feet wide ranging from 4 to 12 feet below ground surface where groundwater was encountered. Approximately 260 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation approved land farm facility. Analytical results reported in the Apex Titan Corrective Action report dated December 14, 2015, from the excavation water sample indicate benzene and toluene concentrations in excess of New Mexico Water Quality Control Commission (NMWQCC) standards. A groundwater investigation was conducted in March 2016, confirming no groundwater impacts exceeding NMWQCC standards. No further action is required. A third party groundwater investigation report is included with this "Final Groundwater" C-141.

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: Jon Fields	OIL CONSERVATION DIVISION
Printed Name: Jon E. Fields	Approved by Environmental Specialist:
Title: Director, Environmental	Approval Date: 1/19/17 Expiration Date:
E-mail Address:jefields@eprod.com	Conditions of Approval: Attached ☐
Date: 6-8-2016 Phone: (713) 381-6684	—

* Attach Additional Sheets If Necessary

#NCS 1534128324

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ENVIRONMENTAL SITE INVESTIGATION REPORT

Property:

Lateral K-31 (Oct 2015) Pipeline Release
SW 1/4, S9 T25N R6W
Rio Arriba County, New Mexico

May 26, 2016
Apex Project No. 7250415025.002

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, NM 87401
Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly
Project Scientist

Kyle Summers, CPG
Branch Manager/Senior Geologist

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ENVIRONMENTAL SITE INVESTIGATION REPORT

Lateral K-31 (Oct 2015) Pipeline Release
SW 1/4, S9 T25N R6W
Rio Arriba County, New Mexico

Apex Project No. 7250415025.002

1.0 INTRODUCTION

1.1 Site Description & Background

The Lateral K-31 pipeline release site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the southwest (SW) ¼ of Section 9, Township 25 North, Range 6 West in rural Rio Arriba County, New Mexico (36.41141N, 107.47916W), referred to hereinafter as the "Site" or "subject Site". The Site is located on land managed by the United States Bureau of Land Management (BLM). The Site is surrounded by native vegetation rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise natural gas gathering pipeline which traverses the area from approximately north to south.

A natural gas pipeline release on the Lateral K-31 was discovered by Enterprise personnel on October 15, 2015. On October 22, 2015, Enterprise initiated excavation activities at the Site to facilitate the repair of the pipeline and to remediate potential hydrocarbon impact. The pipeline was subsequently repaired by replacing approximately 40 feet of pipe. Natural gas was released from the pipeline as a result of internal corrosion. The surface expression of the release was characterized by minimally distressed vegetation in the immediate vicinity of the release.

Corrective action activities began on October 22, 2015, and were completed October 28, 2015. During the removal of hydrocarbon affected soil, apparent groundwater was encountered at the base of the excavation. A water sample collected from the open excavation identified benzene and toluene at concentrations above the New Mexico Water Quality Control Commission (WQCC) *Groundwater Quality Standards* (*GQSs*), prior to soils achieving acceptable New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) *Remediation Action Level (RAL)* concentrations. Therefore, additional site investigation of groundwater was warranted to determine if groundwater is, in fact, adversely affected. Details of the corrective actions pertaining to hydrocarbon-affected soils and the excavation water sample are provided in the *Corrective Action Report – Lateral K-31 (October 2015) Pipeline Release* (Apex TITAN, INC. (Apex)) dated December 14, 2015.

A topographic map depicting the location of the Site is included as Figure 1, a Site Vicinity Map is included as Figure 2, and a Site Map is included as Figure 3 in Appendix A.

1.2 Project Objective

The primary objective of the environmental site investigation was to evaluate the magnitude and extent of dissolved phase constituents of concern (COCs), if present, in the initial groundwater-bearing unit at the Site.

2.0 SITE RANKING

In accordance with the New Mexico ENMRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex utilized the general site characteristics obtained during the completion of corrective action activities and information available from the Office of the New Mexico Office of the State Engineer to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	**20**
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area • <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	**0**
	No	0	
Distance to Surface Water Body	<200 feet	20	**10**
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			**30**

Based on Apex's evaluation of the scoring criteria, the Site would earn a maximum Total Ranking Score of "30". This ranking is based on the following:

- Groundwater was encountered during corrective action activities at approximately 10 feet below grade surface (bgs), resulting in a ranking of "20" for depth to groundwater.
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site. These proximities, or lack thereof, result in a wellhead protection area ranking of "0".
- The release point is located approximately 850 feet from the main Largo Wash cut-bank, resulting in a distance to surface water ranking of "10".

3.0 SITE INVESTIGATION

3.1 Soil Boring and Monitoring Well Installations

During March 2016, four (4) soil borings (MW-1 through MW-4) were advanced in the vicinity of the former pipeline release utilizing a Geoprobe® direct push rig. Soil boring MW-1 was advanced adjacent to the former point of release, and soil boring MW-2 was advanced topographically downgradient from the point of release. Soil borings MW-3 and MW-4 were advanced topographically cross gradient from the point of release in the anticipated direction of groundwater flow.

Figure 3 of Appendix A is a Site Map which depicts the soil boring locations and extents of the former excavation.

Soil samples were collected continuously, utilizing four-foot core barrel samplers. Soil samples were observed to document soil lithology, color, moisture content, and visual and olfactory evidence of petroleum hydrocarbons. Field headspace analysis was conducted by placing the portion of the soil sampled designated for field screening into a plastic Ziplock® bag. The plastic bag was sealed, and the sample allowed to volatilize. The air above the sample, the headspace,

was then evaluated using a photoionization detector (PID) capable of detecting volatile organic compounds (VOCs). The PID was calibrated utilizing an isobutylene standard prior to use in the field.

During the completion of each soil boring, a trained Apex professional documented the subsurface lithology and constructed a continuous profile of the soil column from the ground surface to the boring terminus. Soil samples from each boring location were visually inspected and classified in the field. The lithology observed during the advancement of soil borings generally consisted of interbedded silty sand, sand, and clayey sand underlain by sand to silty sand. Detailed lithologic descriptions are presented on the soil boring logs included in Appendix C.

Overall, PID readings ranged from zero (0) parts per million (ppm) to 36 ppm (MW-1). Field screening results are presented on soil boring logs included in Appendix C.

Subsequent to advancement, the soil borings were completed as monitoring wells. The monitoring wells were completed using the following methodology:

- Installation of 10 feet of 2-inch inside diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap;
- Installation of 2-inch inside diameter, threaded flush joint PVC riser pipe to the ground surface;
- Addition of pre-sieved 20/40 grade annular silica sand pack from the bottom of the soil boring to 2-feet above the top of the well screen;
- Placement of at least two feet of hydrated bentonite pellets above the sand;
- Addition of cement/bentonite slurry to the surface; and
- Installation of an above-grade steel riser with an integrated padlock hasp.

The monitoring wells were developed by surging and removing groundwater with a disposable bailer until the fluid appeared relatively free of fine-grained sediment. Monitoring well construction details are presented on the soil boring logs included in Appendix C.

3.2 Soil Sampling Program

One (1) soil sample was collected from each soil boring from one of the following locations:

- The depth interval exhibiting the highest concentration of VOCs based on PID evidence;
- An interval exhibiting visual/olfactory evidence of impairment;
- The capillary fringe zone;
- From a change in lithology; or
- From the bottom of the boring.

The soil samples were collected in laboratory supplied containers, sealed with custody tape and placed on ice in a cooler secured with a custody seal. The sample cooler and completed chain-of-custody forms were relinquished to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico.

3.3 Soil Laboratory Analytical Program

Soil samples were analyzed for total petroleum hydrocarbons (TPH) gasoline range organics (GRO) and diesel range organics (DRO) utilizing Environmental Protection Agency (EPA) SW-846 Method 8015 and benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing EPA SW-846 Method 8021.

A summary of the analytes, sample type, and EPA-approved methods is presented in the following table:

Analytes	Sample Type	No. of Samples	EPA Method
TPH GRO/DRO	Soil	4	SW-846 8015
BTEX	Soil	4	SW-846 8021

Soil laboratory results are summarized in Tables 1 a (Appendix B). The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

3.4 Groundwater Sampling Program

A groundwater sampling event was conducted during March 2016 by Ranee Deechilly and Chad D'Aponti, Apex environmental professionals.

Apex's groundwater sampling program consisted of the following:

Prior to sample collection, Apex gauged the depth to fluids in each monitoring well using an interface probe capable of detecting non-aqueous phase liquids (NAPL). NAPL was not detected at any of the monitoring well locations.

Monitoring wells MW-1 and MW-3 were micro-purged utilizing low-flow sampling techniques. Subsequent to the completion of the micro-purge process, one (1) groundwater sample was collected from each monitoring well.

Low-flow refers to the velocity with which groundwater enters the pump intake and that is imparted to the formation pore water in the immediate vicinity of the well screen. It does not necessarily refer to the flow rate of water discharged at the surface which can be affected by flow regulators or restrictions. Water level drawdown provides the best indication of the stress imparted by a given flow-rate for a given hydrological situation. The objective is to pump in a manner that minimizes stress (drawdown) to the system, to the extent practical, taking into account established Site sampling objectives. Flow rates on the order of 0.1 to 0.5 liters per minute (L/min) are maintained during sampling activities, using dedicated sampling equipment. The water level is checked periodically to monitor drawdown in the well as a guide to flow rate adjustment.

The pump intake is placed within the screened interval such that the groundwater recovered is drawn in directly from the formation with little mixing of casing water or disturbance to the sampling zone.

The groundwater samples are collected from each monitoring well once produced groundwater is consistent in color, clarity, pH, temperature, and conductivity. Measurements are taken every three to five minutes. Stabilization is achieved after key parameters (especially pH and conductivity) have stabilized for three successive readings.

Based on monitoring well purge data from three days prior, monitoring wells MW-2 and MW-4 produced insufficient recharge to low-flow sample. As a result, these monitoring wells were sampled utilizing disposable bailers. An OCD representative was on site during groundwater sampling activities.

Groundwater samples were collected in laboratory supplied containers and placed on ice in a cooler secured with a custody seal. The samples collected during the sampling event were shipped under proper chain-of-custody to HEAL in Albuquerque, New Mexico.

3.5 Groundwater Laboratory Analytical Program

Groundwater samples were analyzed for VOCs utilizing EPA SW-846 Method 8260B. Sample containers for groundwater organic analyses were pre-preserved with mercuric chloride ($HgCl_2$).

A summary of the analytes, sample type, and EPA-approved methods is presented in the following table:

Analytes	Sample Type	No. of Samples	EPA Method
VOCs	Groundwater	4	SW-846 8260B

Groundwater laboratory results are summarized in Table 2 (Appendix B). The executed chain-of-custody form and laboratory data sheets are provided in Appendix D.

4.0 GROUNDWATER FLOW DIRECTION

Each of the monitoring wells was surveyed for top-of-casing (TOC) elevations. Apex gauged the depth to fluids in each monitoring well with an interface probe capable of detecting/measuring NAPL. NAPL was not identified at the Site. The groundwater flow direction at the Site varies from northeast to northwest. The apparent gradient during the monitoring event measured 0.008 ft/ft across the western portion of the Site and flattened to 0.0017 ft/ft at the central eastern extent of the Site. Groundwater elevation data would seem to indicate that the Largo Wash is both gaining (southern portion of Site) and losing (northern portion of Site) head across the Site, and may indicate the presence of a paleo-channel or preferred drainage path near the southern portion of the Site. Groundwater is present at depths ranging from approximately 8 to 10 feet bgs at the Site.

Groundwater measurements collected during the sampling event are presented with TOC elevations in Table 2 (Appendix B). A groundwater gradient map, created using the Surfer® Mapping Software suite, is included as Figure 4 (Appendix A).

5.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to crude oil/condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the EMNRD/OCD rules, specifically New Mexico Administrative Code 19.15.29 *Release Notification*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action. Additionally, the New Mexico EMNRD OCD utilizes the New Mexico WQCC *GQSs* to evaluate baseline groundwater conditions.

5.1 Soil Samples

Apex compared the BTEX and TPH concentrations or laboratory method practical quantitation limits (PQLs) associated with the monitoring well soil boring samples to the OCD *RALs* for sites having a total ranking score of "30".

- The laboratory analysis of the soil samples collected from the monitoring well soil borings did not indicate benzene concentrations above the PQLs, which are below the OCD *RAL* of 10 milligrams per kilogram (mg/kg).

- The laboratory analysis of the soil samples collected from the monitoring well soil borings indicate total BTEX concentrations from below PQLs to 0.51 mg/kg (MW-1), which are below the OCD *RAL* of 50 mg/kg.

- The laboratory analyses of the soil samples collected from the monitoring well soil borings indicate combined TPH GRO/DRO concentrations from below the PQLs to 11 mg/kg, which are below the OCD *RAL* of 100 mg/kg.

No data qualifier flags were associated with the soil analytical results. Soil sample results are provided in Table 1 in Appendix B. Laboratory data sheets and chain-of-custody documentation are provided as Appendix D.

5.2 Groundwater Samples

Apex compared BTEX concentrations or method PQLs associated with the groundwater samples collected from the Site monitoring wells to the WQCC *GQSs*.

- The groundwater samples collected from monitoring well MW-1 exhibited a benzene concentration of 7.7 micrograms per liter (µg/L), which is below the WQCC GQS of 10 µg/L. MW-1 exhibited toluene and ethylbenzene concentrations of 1.1 µg/L and 3.6 µg/L, respectively, which are below the WQCC GQS of 750 µg/L. The groundwater sample from monitoring well MW-1 also exhibited a total xylenes concentration of 31 µg/L, which is below the WQCC GQS of 620 µg/L.

- The groundwater samples collected from the remaining monitoring wells (MW-2 through MW-4) did not exhibit BTEX constituent concentrations above the PQLs, which are below the applicable WQCC *GQSs*.

No data qualifier flags were associated with the groundwater analytical results. The results of the groundwater sample analyses are summarized in Table 2 of Appendix B. Laboratory data sheets and chain-of-custody documentation are provided as Appendix D.

6.0 FINDINGS AND RECOMMENDATIONS

The primary objective of the environmental site investigation was to evaluate the magnitude and extent of dissolved phase COCs, if present, in the initial groundwater-bearing unit at the Site.

- Apex installed four (4) soil borings/monitoring wells at the Lateral K-31 (Oct 2015) release Site utilizing a Geoprobe® direct push rig.

- The soil samples collected from monitoring well soil borings MW-1 through MW-4 did not exhibit benzene, total BTEX, or TPH GRO/DRO concentrations above the applicable OCD *RALs.*

- Subsequent to the completion and development of the monitoring wells, one (1) groundwater sample was collected from each monitoring well utilizing low flow or bailer sampling techniques.

- The groundwater samples collected from monitoring wells MW-1 through MW-4 did not exhibit BTEX constituent concentrations above the PQLs, which are below the applicable WQCC *GQSs.*

- Based on field measurements, the groundwater flow direction at the Site is varies from northeast to northwest, with an approximate gradient ranging from 0.008 ft/ft across the western portion of the Site to 0.0017 ft/ft on the eastern portion of the Site.

Based on the results of the environmental site investigation, Apex has the following recommendations:

- **Report the environmental site investigation results to the OCD;**

- **Request permission to plug and abandon the monitoring wells; and**

- **Request that no further action be required in relation to this release at this time.**

7.0 STANDARD OF CARE, LIMITATIONS, AND RELIANCE

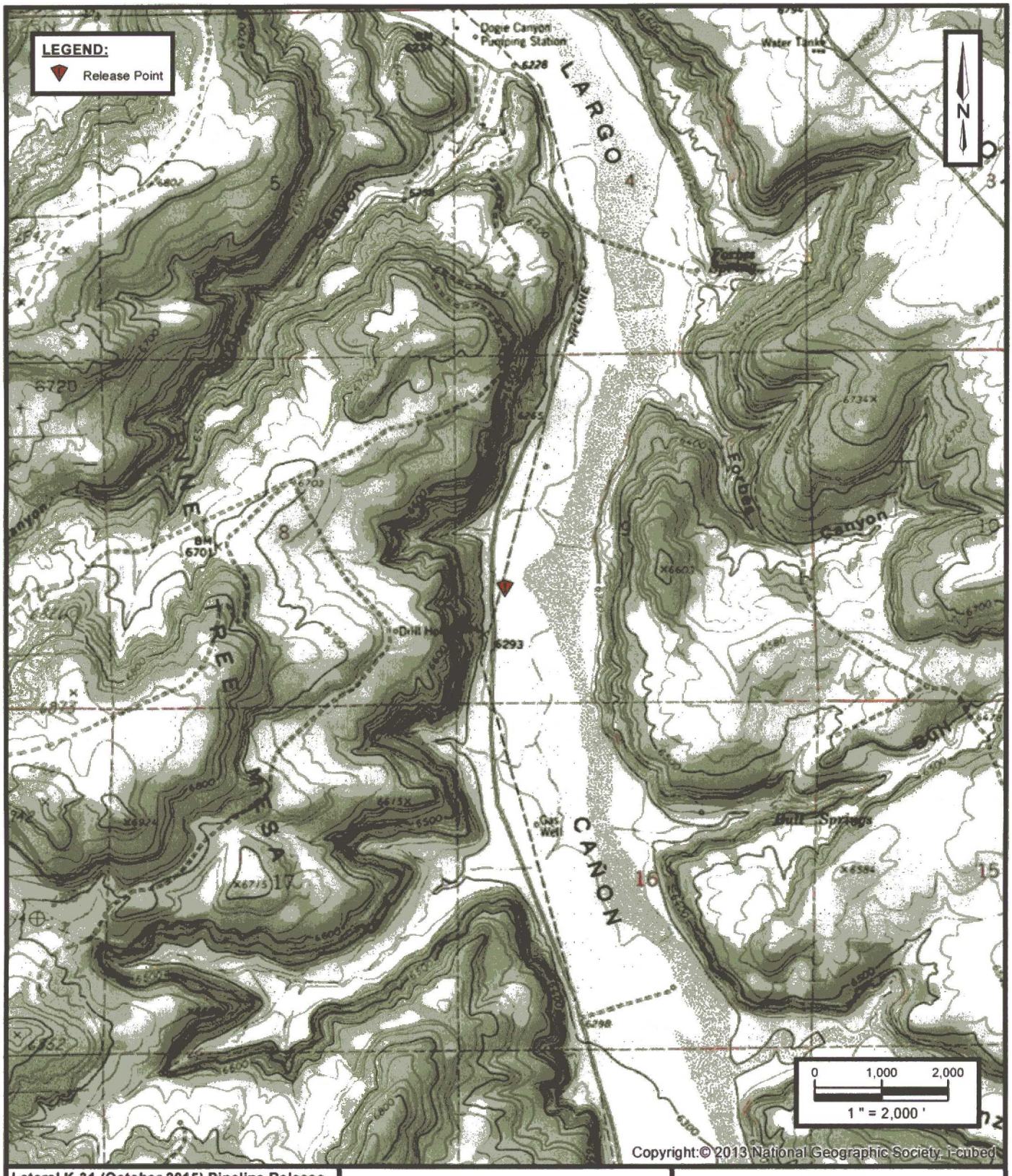
Apex's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Apex makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, Apex does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services was performed in accordance with the scope of work agreed with the client.

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Apex cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this scope of services. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Apex's findings and recommendations are based solely upon data available to Apex at the time of these services.

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the expressed written authorization of Enterprise and Apex. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and Apex's Agreement. The limitation of liability defined in the agreement is the aggregate limit of Apex's liability to the client.

APPENDIX A

Figures



Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N,107.479160 W

Project No. 7250415025-002

Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 1

Topographic Map

Gonzales Mesa
New Mexico Quadrangle
1965

P:\Drafting\Farmington\2015\7250415025\Figure 1.mxd Modified 5/9/2016 by JSimpson NAD 1983 2011 StatePlane New Mexico West FIPS 3003 Ft US Coordinate System

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec8 T25N R6W
Rio Arriba County, New Mexico
36.411410 N,107.479180 W

Project No. 72504150025-002

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Aztec, New Mexico 87410
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FIGURE 2

Site Vicinity Map

Aerial Photograph: March 2016

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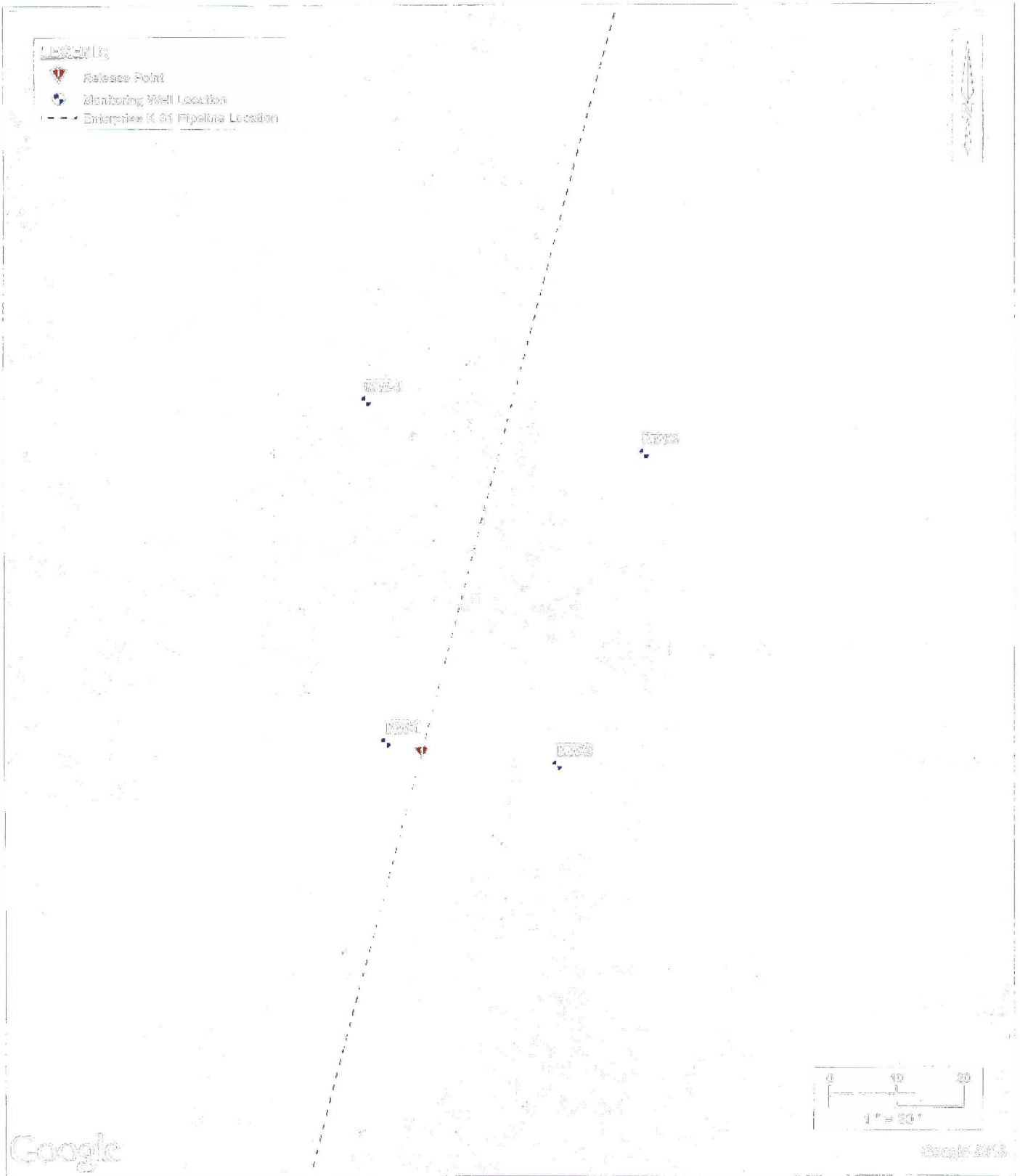

Lateral K-91 (October 2018) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N, 107.478193 W

Project No. 725041502S-002

Apex TITAN, Inc.
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Aztec, New Mexico 87410
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FIGURE 3

Site Map

Aerial Photograph March 2018

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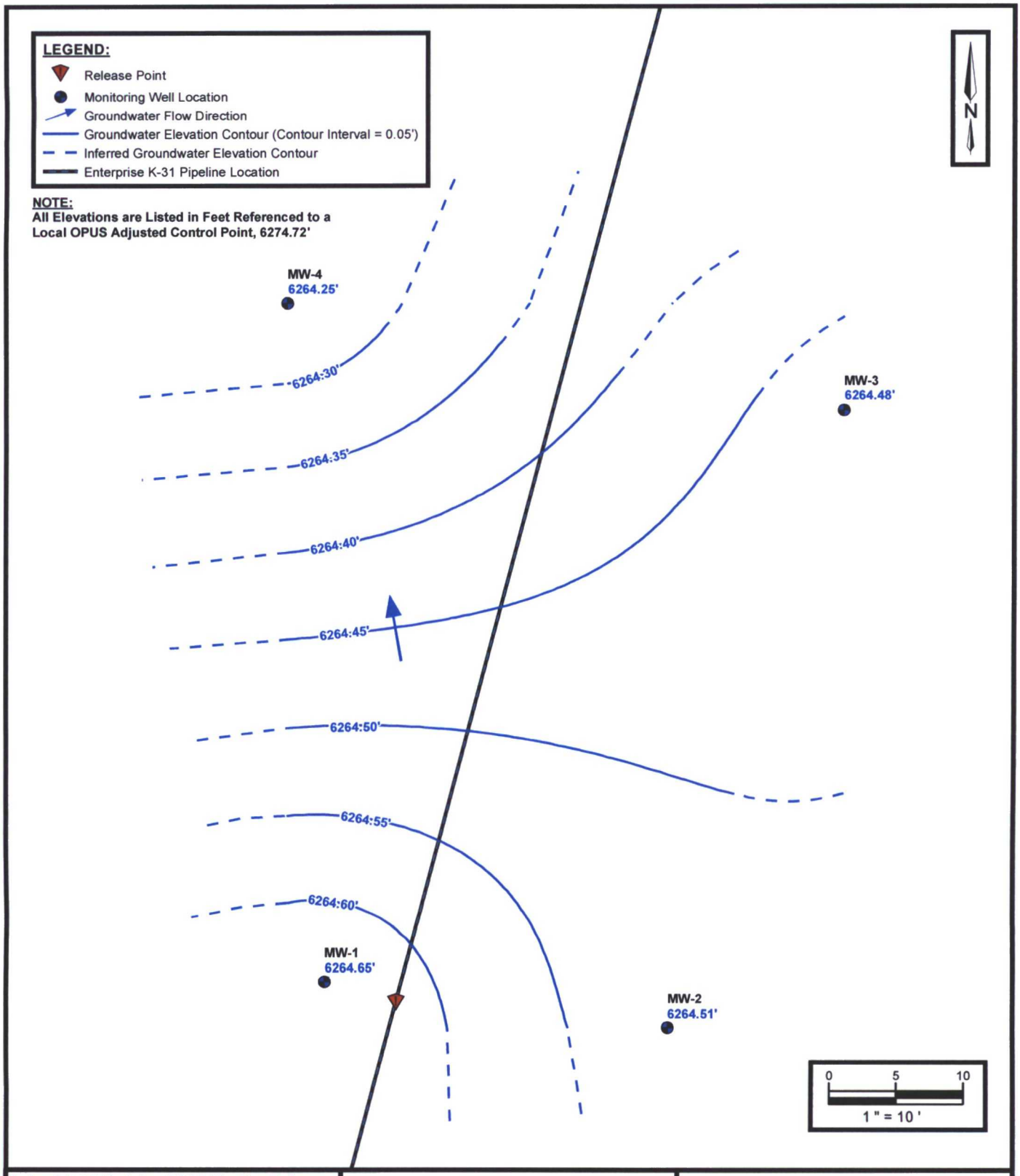

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N,107.479160 W

Project No. 7250415025-002

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FIGURE 4

Groundwater Gradient Map
April 2016

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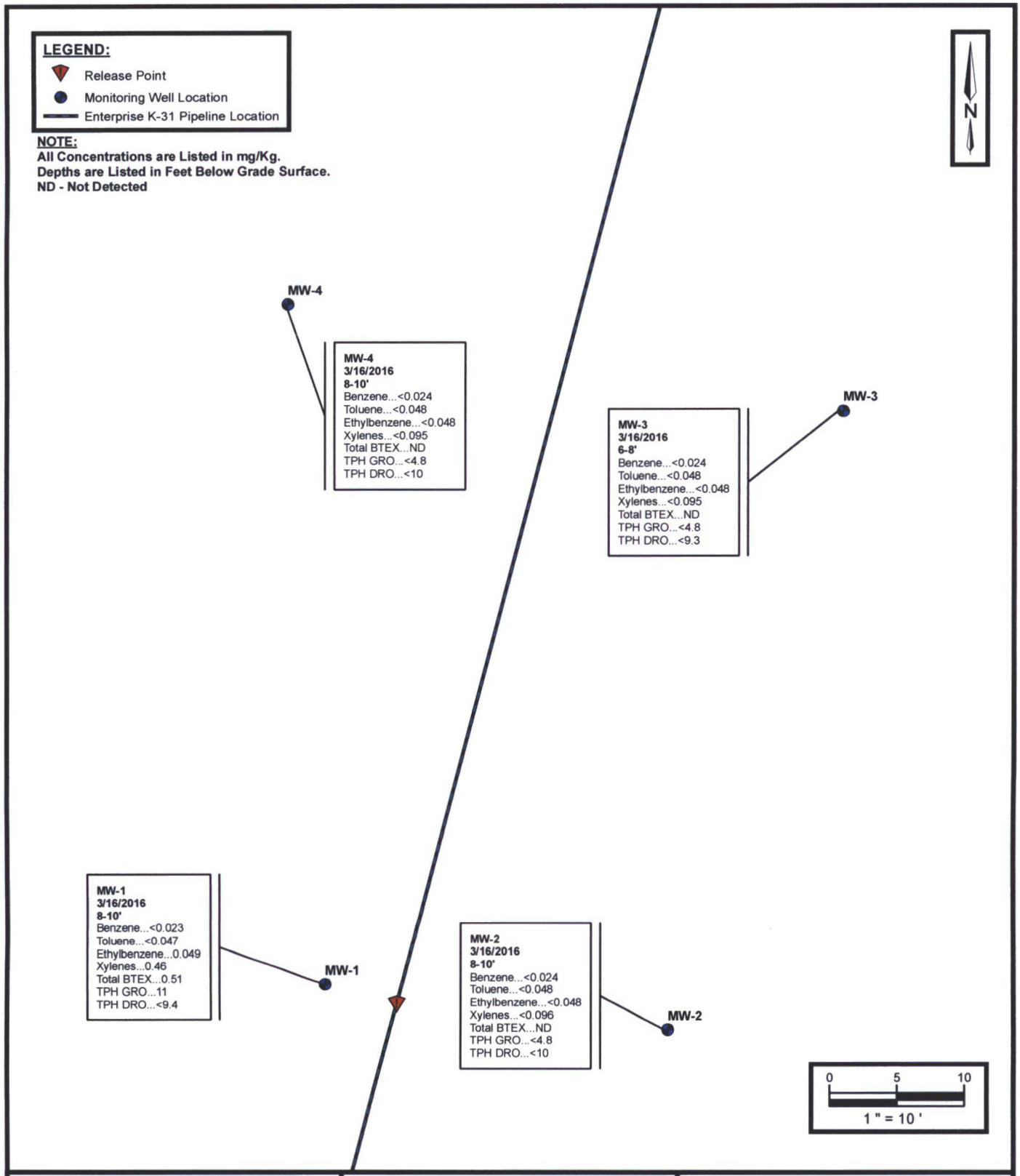

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N,107.479160 W

Project No. 7250415025-002

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FIGURE 5

Site Map with Soil Analytical Results

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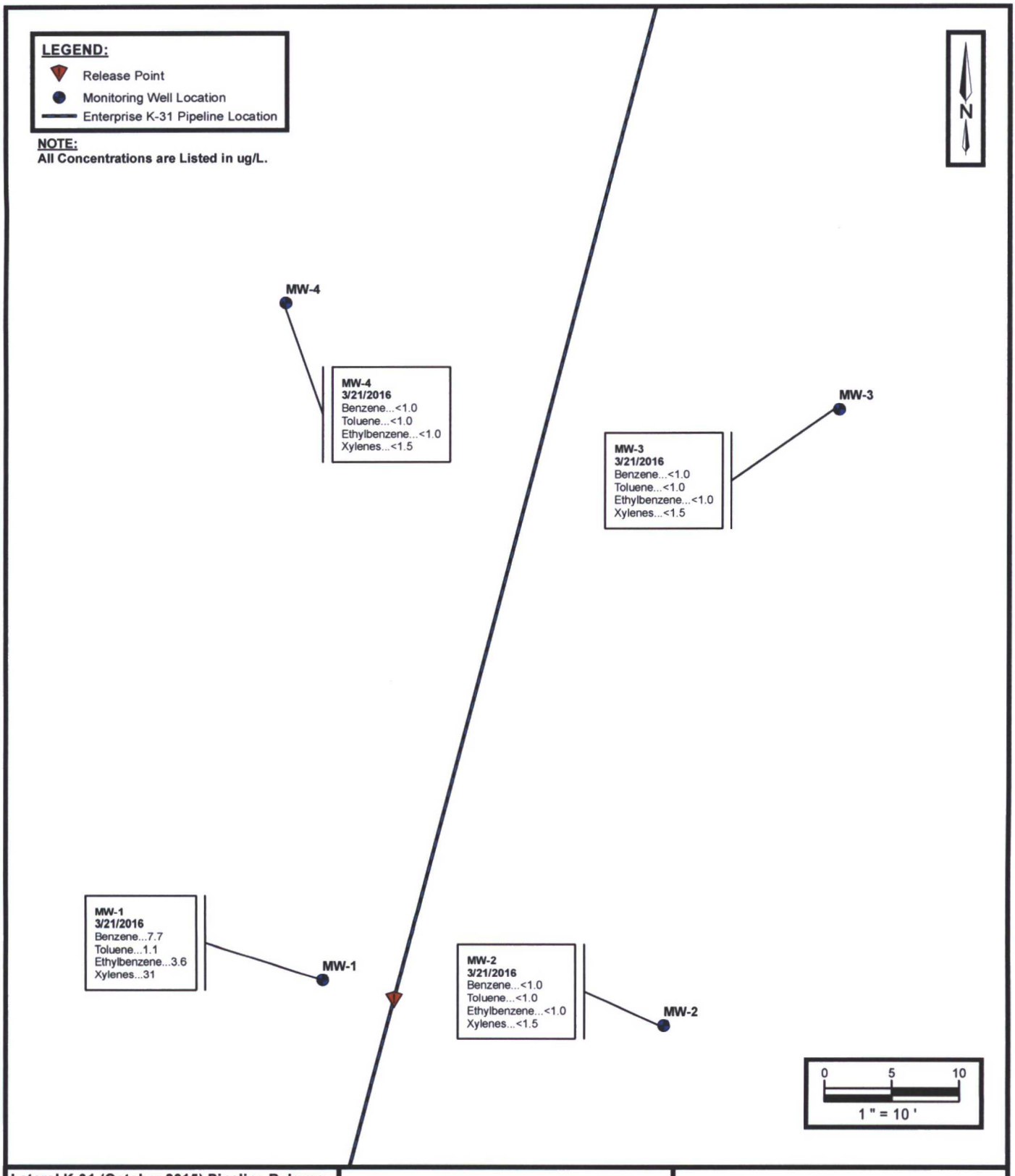

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N,107.479160 W

Project No. 7250415025-002

Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
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FIGURE 6

Site Map with Groundwater BTEX Results

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APPENDIX B

Tables

APEX

TABLE 1
Lateral K-31 (Oct 2015) Pipeline Release
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)
New Mexico Energy, Mineral & Natural Rescources Department, Oil Conservation Division, Remediation Action Level			**10**	**NE**	**NE**	**NE**	**50**	**100**	
Soil Boring Samples									
MW-1	03.16.16	8 to 10	<0.023	<0.047	0.049	0.46	0.51	11	<9.4
MW-2	03.16.16	8 to 10	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<10
MW-3	03.16.16	6 to 8	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<9.3
MW-4	03.16.16	8 to 10	<0.024	<0.048	<0.048	<0.095	ND	<4.8	<10

Note: Concentrations in **bold** and yellow exceed the applicable OCD Remediation Action Level

NE = Not Established

<1.0= the numeral (in this case "1.0") identifies the practicable quantitation limit

APEX

TABLE 2
Lateral K-31 (Oct 2015) Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		**10**	**750**	**750**	**620**
MW-1	03.21.16	7.7	1.1	3.6	31
MW-2	03.21.16	<1.0	<1.0	<1.0	<1.5
MW-3	03.21.16	<1.0	<1.0	<1.0	<1.5
MW-4	03.21.16	<1.0	<1.0	<1.0	<1.5

NE = Not Established

<1.0= the numeral (in this case "1.0") identifies the practicable quantitation limit

TABLE 3
Lateral K-31 (Oct 2015) Pipeline Release
GROUNDWATER ELEVATIONS

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	TOC Elevations (feet AMSL)	Groundwater Elevation (feet AMSL)
MW-1	04.25.16	ND	11.45	ND	6276.10	6264.65
MW-2	04.25.16	ND	12.15	ND	6276.66	6264.51
MW-3	04.25.16	ND	12.07	ND	6276.55	6264.48
MW-4	04.25.16	ND	11.75	ND	6276.00	6264.25

BTOC - below top of casing

AMSL - above mean sea level

TOC - top of casing

ND - not detected

APEX

APPENDIX C

Soil Boring/Monitoring Well Logs

Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
A Subsidiary of Apex Companies, LLC

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N, 107.479160 W

Project No. 7250415025-002

Soil Boring/Monitoring Well

MW-1

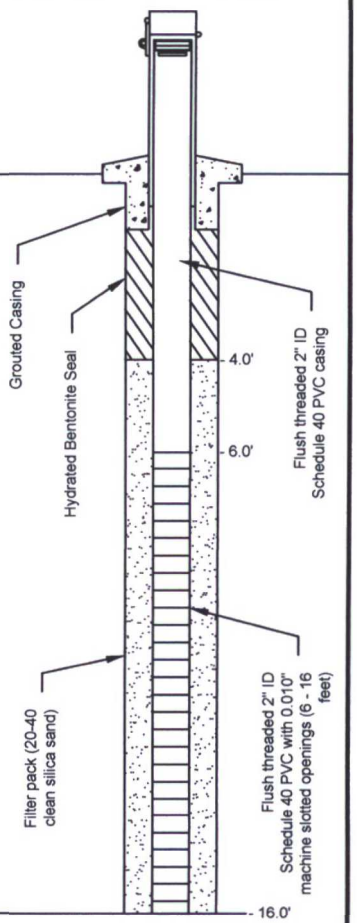
Date Sampled:	3/16/2016
Drilled by:	Earthworx
Driller:	L. Trujillo
Logged by:	K. Summers
Sampler:	R. Deechilly
Project Manager:	K. Summers

Ground Surface Elevation:	6272.89'
Top of Casing Elevation:	6276.10'
Latitude:	36.411446 N
Longitude:	107.479135 W
Bench Mark Elevation:	6274.72'
GW Elev:	▽ At Completion ▽ At Well Stabilization

Borehole Diameter:	3.25"
Casing Diameter:	2"
Well Materials:	SCH40 PVC
Surface Completion:	Above Ground Vault
Boring Method:	Geoprobe

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY (%)	PID VALUES (ppm)	GROUNDWATER ELEVATION	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0				0			SILTY SAND: (backfill material) moderate yellowish brown 10YR 5/4, very fine to fine sand, dry, no hydrocarbon odor, no staining
			50	0			
5				0			
				0			
		8-10	25	36	3/16/2016 ▽		SANDY CLAY: moderate yellowish brown 10YR 5/4, fine to medium sand, moist, slight hydrocarbon odor, no staining
10				-			SILTY SAND: moderate yellowish brown 10YR 5/4, fine sand, moist, no hydrocarbon odor, no staining
				0.7			SAND: moderate yellowish brown 10YR 5/4, medium sand, wet, no hydrocarbon odor, no staining
			90	-			
15							TOTAL DEPTH OF BORING - 16.0 feet BGS
20							
25							

BORING / WELL COMPLETION (GRAPHIC DEPICTION)



Apex TITAN, Inc.
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Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N, 107.479160 W

Project No. 7250415025-002

Soil Boring/Monitoring Well

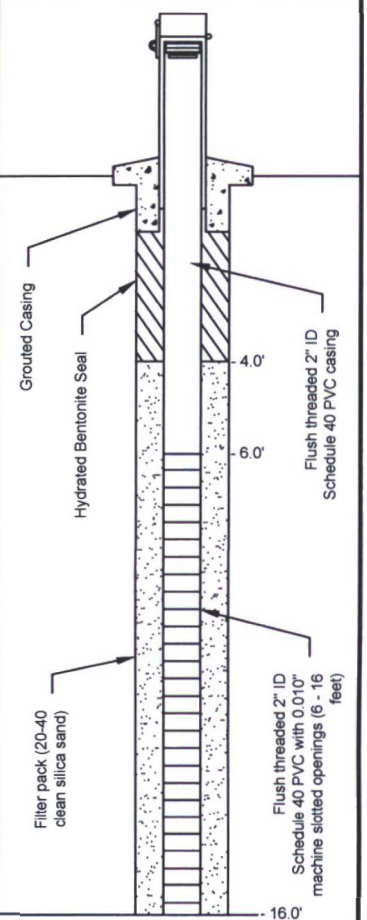
MW-2

Date Sampled:	3/16/2016	Ground Surface Elevation:	6273.39'
Drilled by:	Earthworx	Top of Casing Elevation:	6276.66'
Driller:	L. Trujillo	Latitude:	36.411437 N
Logged by:	C. D'Aponti/K. Summers	Longitude:	107.479049 W
Sampler:	C. D'Aponti	Bench Mark Elevation:	6274.72'
Project Manager:	K. Summers	GW Elev:	▽ At Completion ▽ At Well Stabilization

Borehole Diameter:	3.25"
Casing Diameter:	2"
Well Materials:	SCH40 PVC
Surface Completion:	Above Ground Vault
Boring Method:	Geoprobe

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY (%)	PID VALUES (ppm)	GROUNDWATER ELEVATION	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0							
			50	0			SILTY SAND: with slight clay, moderate yellowish brown 10YR 5/4, fine sand, slight trace of anhydrite, slightly moist, no hydrocarbon odor, no staining
				0			
5			75	0			CLAY: with slight silt, moderate yellowish brown 10YR 5/4, very fine to fine sand, small trace of anhydrite, moist, no hydrocarbon odor, no staining
				0	3/16/2016 ▽		
	X	8-10		0.1			CLAY: moderate yellowish brown 10YR 5/4, very fine sand, moist, no hydrocarbon odor, no staining
10				-			SILTY SAND: with clay, dark yellowish brown 10YR 4/2, fine to medium sand, moist, no hydrocarbon odor, no staining
			50	0.1			
				-			CLAY: with slight sand, dark yellowish brown 10YR 4/2, very fine to fine sand, moist, no hydrocarbon odor, no staining
15							TOTAL DEPTH OF BORING - 16.0 feet BGS
20							
25							

BORING / WELL COMPLETION (GRAPHIC DEPICTION)



P:\Drafting\Farmington\2015\7250415025\Boring Logs.dwg 05/09/16

Apex TITAN, Inc.
606 South Rio Grande, Suite A
Aztec, New Mexico 87410
Phone: (505) 334-5200
www.apexcos.com
A Subsidiary of Apex Companies, LLC

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N, 107.479160 W

Project No. 7250415025-002

Soil Boring/Monitoring Well

MW-3

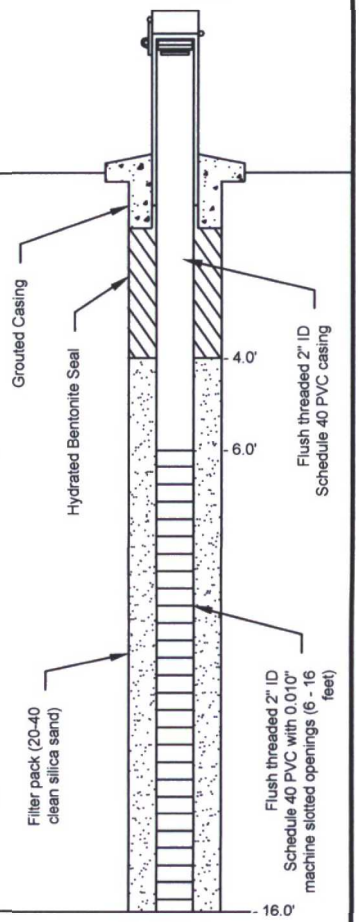
Date Sampled:	3/16/2016
Drilled by:	Earthworx
Driller:	L. Trujillo
Logged by:	R. Deechilly/K. Summers
Sampler:	R. Deechilly
Project Manager:	K. Summers

Ground Surface Elevation:	6273.05'
Top of Casing Elevation:	6276.55'
Latitude:	36.411563 N
Longitude:	107.479004 W
Bench Mark Elevation:	6274.72'
GW Elev:	▽ At Completion ▽ At Well Stabilization

Borehole Diameter:	3.25"
Casing Diameter:	2"
Well Materials:	SCH40 PVC
Surface Completion:	Above Ground Vault
Boring Method:	Geoprobe

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY (%)	PID VALUES (ppm)	GROUNDWATER ELEVATION	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0							
				0			SILTY SAND: with slight clay, dark yellowish brown 10YR 4/2, very fine to fine sand, dry, no hydrocarbon odor
				0.3			
			25	0.1			SAND: with silt, moderate yellowish brown 10YR 5/4, fine sand, slightly moist, no hydrocarbon odor
5							
		6-8		0.1	3/16/2016 ▽		
				0			SILTY SAND: moderate yellowish brown 10YR 5/4, very fine to fine sand, wet, no hydrocarbon odor
10				0			
			50	0			SILTY SAND: dark yellowish brown 10YR 4/2, fine sand, wet, no hydrocarbon odor
				0			SAND: with slight clay, dark yellowish brown 10YR 4/2, medium to coarse sand
15							
							TOTAL DEPTH OF BORING - 16.0 feet BGS
20							
25							

BORING / WELL COMPLETION (GRAPHIC DEPICTION)



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Aztec, New Mexico 87410
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A Subsidiary of Apex Companies, LLC

Lateral K-31 (October 2015) Pipeline Release
SW1/4 Sec9 T25N R6W
Rio Arriba County, New Mexico
36.411410 N, 107.479160 W

Project No. 7250415025-002

Soil Boring/Monitoring Well

MW-4

Date Sampled:	3/16/2016
Drilled by:	Earthworx
Driller:	L. Trujillo
Logged by:	R. Deechilly/K. Summers
Sampler:	R. Deechilly
Project Manager:	K. Summers

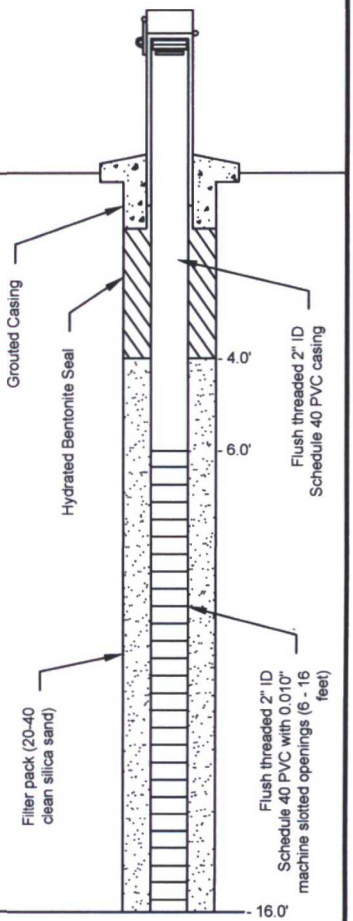
Ground Surface Elevation:	6273.14'
Top of Casing Elevation:	6276.00'
Latitude:	36.411586 N
Longitude:	107.479144 W
Bench Mark Elevation:	6274.72'

GW Elev: ▽ At Completion ▽ At Well Stabilization

Borehole Diameter:	3.25"
Casing Diameter:	2"
Well Materials:	SCH40 PVC
Surface Completion:	Above Ground Vault
Boring Method:	Geoprobe

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE NUMBER	RECOVERY (%)	PID VALUES (ppm)	GROUNDWATER ELEVATION	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION
0							
			20	0			SILTY SAND: with slight clay, dark yellowish brown 10YR 4/2, very fine to fine sand, dry, no hydrocarbon odor, no staining
				0			
5			50	0			CLAY: with silt, moderate yellowish brown 10YR 5/4, very fine sand, small trace of anhydrite, slight moist, no hydrocarbon odor, no staining
				0	3/16/2016 ▽		
	X	8-10		0			SILTY CLAY: moderate yellowish brown 10YR 5/4, very fine to fine sand, wet, no hydrocarbon odor, no staining
10			75	0			CLAY: with silt, moderate yellowish brown 10YR 5/4, fine sand, wet, no hydrocarbon odor, no staining
				-			SILTY SAND: to silty sand with slight clay (1-5%), moderate yellowish brown 10YR 5/4, wet, very fine, no hydrocarbon odor, no staining
			80	-			
15							TOTAL DEPTH OF BORING - 16.0 feet BGS
20							
25							

BORING / WELL COMPLETION (GRAPHIC DEPICTION)



APEX

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 24, 2016

Kyle Summers
APEX TITAN
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral K-31 (Oct 2015) OrderNo.: 1603B30

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/23/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-2
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 2:08:00 PM
Lab ID: 1603B30-001
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Toluene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Ethylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Naphthalene	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
2-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Acetone	ND	10		µg/L	1	3/23/2016 6:55:24 PM	R33025
Bromobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Bromodichloromethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Bromoform	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Bromomethane	ND	3.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
2-Butanone	ND	10		µg/L	1	3/23/2016 6:55:24 PM	R33025
Carbon disulfide	ND	10		µg/L	1	3/23/2016 6:55:24 PM	R33025
Carbon Tetrachloride	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Chlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Chloroethane	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Chloroform	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Chloromethane	ND	3.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
2-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
4-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
cis-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Dibromochloromethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Dibromomethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,3-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,4-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Dichlorodifluoromethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1-Dichloroethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1-Dichloroethene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,3-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
2,2-Dichloropropane	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-2
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 2:08:00 PM
Lab ID: 1603B30-001
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,1-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Hexachlorobutadiene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
2-Hexanone	ND	10		µg/L	1	3/23/2016 6:55:24 PM	R33025
Isopropylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
4-Isopropyltoluene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
4-Methyl-2-pentanone	ND	10		µg/L	1	3/23/2016 6:55:24 PM	R33025
Methylene Chloride	ND	3.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
n-Butylbenzene	ND	3.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
n-Propylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
sec-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Styrene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
tert-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
trans-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Trichlorofluoromethane	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
1,2,3-Trichloropropane	ND	2.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Vinyl chloride	ND	1.0		µg/L	1	3/23/2016 6:55:24 PM	R33025
Xylenes, Total	ND	1.5		µg/L	1	3/23/2016 6:55:24 PM	R33025
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	3/23/2016 6:55:24 PM	R33025
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	3/23/2016 6:55:24 PM	R33025
Surr: Dibromofluoromethane	120	70-130		%Rec	1	3/23/2016 6:55:24 PM	R33025
Surr: Toluene-d8	99.1	70-130		%Rec	1	3/23/2016 6:55:24 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-1
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 2:20:00 PM
Lab ID: 1603B30-002
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	7.7	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Toluene	1.1	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Ethylbenzene	3.6	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2,4-Trimethylbenzene	2.7	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,3,5-Trimethylbenzene	4.4	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Naphthalene	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
2-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Acetone	ND	10		µg/L	1	3/23/2016 7:24:15 PM	R33025
Bromobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Bromodichloromethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Bromoform	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Bromomethane	ND	3.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
2-Butanone	ND	10		µg/L	1	3/23/2016 7:24:15 PM	R33025
Carbon disulfide	ND	10		µg/L	1	3/23/2016 7:24:15 PM	R33025
Carbon Tetrachloride	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Chlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Chloroethane	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Chloroform	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Chloromethane	ND	3.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
2-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
4-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
cis-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Dibromochloromethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Dibromomethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,3-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,4-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Dichlorodifluoromethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1-Dichloroethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1-Dichloroethene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,3-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
2,2-Dichloropropane	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Project: Lateral K-31 (Oct 2015)
Lab ID: 1603B30-002 **Matrix:** AQUEOUS

Client Sample ID: MW-1
Collection Date: 3/21/2016 2:20:00 PM
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,1-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Hexachlorobutadiene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
2-Hexanone	ND	10		µg/L	1	3/23/2016 7:24:15 PM	R33025
Isopropylbenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
4-Isopropyltoluene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
4-Methyl-2-pentanone	ND	10		µg/L	1	3/23/2016 7:24:15 PM	R33025
Methylene Chloride	ND	3.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
n-Butylbenzene	ND	3.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
n-Propylbenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
sec-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Styrene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
tert-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
trans-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Trichlorofluoromethane	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
1,2,3-Trichloropropane	ND	2.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Vinyl chloride	ND	1.0		µg/L	1	3/23/2016 7:24:15 PM	R33025
Xylenes, Total	31	1.5		µg/L	1	3/23/2016 7:24:15 PM	R33025
Surr: 1,2-Dichloroethane-d4	97.9	70-130		%Rec	1	3/23/2016 7:24:15 PM	R33025
Surr: 4-Bromofluorobenzene	96.1	70-130		%Rec	1	3/23/2016 7:24:15 PM	R33025
Surr: Dibromofluoromethane	107	70-130		%Rec	1	3/23/2016 7:24:15 PM	R33025
Surr: Toluene-d8	96.9	70-130		%Rec	1	3/23/2016 7:24:15 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-4
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 2:25:00 PM
Lab ID: 1603B30-003
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Toluene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Ethylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Naphthalene	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
2-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Acetone	ND	10		µg/L	1	3/23/2016 7:53:05 PM	R33025
Bromobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Bromodichloromethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Bromoform	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Bromomethane	ND	3.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
2-Butanone	ND	10		µg/L	1	3/23/2016 7:53:05 PM	R33025
Carbon disulfide	ND	10		µg/L	1	3/23/2016 7:53:05 PM	R33025
Carbon Tetrachloride	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Chlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Chloroethane	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Chloroform	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Chloromethane	ND	3.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
2-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
4-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
cis-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Dibromochloromethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Dibromomethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,3-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,4-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Dichlorodifluoromethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1-Dichloroethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1-Dichloroethene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,3-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
2,2-Dichloropropane	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-4
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 2:25:00 PM
Lab ID: 1603B30-003
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,1-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Hexachlorobutadiene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
2-Hexanone	ND	10		µg/L	1	3/23/2016 7:53:05 PM	R33025
Isopropylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
4-Isopropyltoluene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
4-Methyl-2-pentanone	ND	10		µg/L	1	3/23/2016 7:53:05 PM	R33025
Methylene Chloride	ND	3.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
n-Butylbenzene	ND	3.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
n-Propylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
sec-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Styrene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
tert-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
trans-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Trichlorofluoromethane	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
1,2,3-Trichloropropane	ND	2.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Vinyl chloride	ND	1.0		µg/L	1	3/23/2016 7:53:05 PM	R33025
Xylenes, Total	ND	1.5		µg/L	1	3/23/2016 7:53:05 PM	R33025
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	3/23/2016 7:53:05 PM	R33025
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	3/23/2016 7:53:05 PM	R33025
Surr: Dibromofluoromethane	122	70-130		%Rec	1	3/23/2016 7:53:05 PM	R33025
Surr: Toluene-d8	94.4	70-130		%Rec	1	3/23/2016 7:53:05 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-3
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 3:05:00 PM
Lab ID: 1603B30-004 **Matrix:** AQUEOUS **Received Date:** 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Toluene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Ethylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Naphthalene	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
2-Methylnaphthalene	ND	4.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Acetone	ND	10		µg/L	1	3/23/2016 8:21:54 PM	R33025
Bromobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Bromodichloromethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Bromoform	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Bromomethane	ND	3.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
2-Butanone	ND	10		µg/L	1	3/23/2016 8:21:54 PM	R33025
Carbon disulfide	ND	10		µg/L	1	3/23/2016 8:21:54 PM	R33025
Carbon Tetrachloride	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Chlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Chloroethane	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Chloroform	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Chloromethane	ND	3.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
2-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
4-Chlorotoluene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
cis-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Dibromochloromethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Dibromomethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,3-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,4-Dichlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Dichlorodifluoromethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1-Dichloroethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1-Dichloroethene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,3-Dichloropropane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
2,2-Dichloropropane	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-3
Project: Lateral K-31 (Oct 2015)
Collection Date: 3/21/2016 3:05:00 PM
Lab ID: 1603B30-004
Matrix: AQUEOUS
Received Date: 3/23/2016 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **AG**	
1,1-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Hexachlorobutadiene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
2-Hexanone	ND	10		µg/L	1	3/23/2016 8:21:54 PM	R33025
Isopropylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
4-Isopropyltoluene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
4-Methyl-2-pentanone	ND	10		µg/L	1	3/23/2016 8:21:54 PM	R33025
Methylene Chloride	ND	3.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
n-Butylbenzene	ND	3.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
n-Propylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
sec-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Styrene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
tert-Butylbenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
trans-1,2-DCE	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1,1-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,1,2-Trichloroethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Trichloroethene (TCE)	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Trichlorofluoromethane	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
1,2,3-Trichloropropane	ND	2.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Vinyl chloride	ND	1.0		µg/L	1	3/23/2016 8:21:54 PM	R33025
Xylenes, Total	ND	1.5		µg/L	1	3/23/2016 8:21:54 PM	R33025
Surr: 1,2-Dichloroethane-d4	98.4	70-130		%Rec	1	3/23/2016 8:21:54 PM	R33025
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	3/23/2016 8:21:54 PM	R33025
Surr: Dibromofluoromethane	115	70-130		%Rec	1	3/23/2016 8:21:54 PM	R33025
Surr: Toluene-d8	96.5	70-130		%Rec	1	3/23/2016 8:21:54 PM	R33025

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603B30**

24-Mar-16

Client: APEX TITAN

Project: Lateral K-31 (Oct 2015)

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R33025**	RunNo: **33025**
Prep Date:	Analysis Date: **3/23/2016**	SeqNo: **1013095** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	70	130			
Toluene	20	1.0	20.00	0	100	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	23	1.0	20.00	0	116	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		99.9	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	12		10.00		115	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R33025**	RunNo: **33025**
Prep Date:	Analysis Date: **3/23/2016**	SeqNo: **1013096** Units: **µg/L**

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603B30**

24-Mar-16

Client: APEX TITAN

Project: Lateral K-31 (Oct 2015)

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R33025**	RunNo: **33025**
Prep Date:	Analysis Date: **3/23/2016**	SeqNo: **1013096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603B30**

24-Mar-16

Client: APEX TITAN

Project: Lateral K-31 (Oct 2015)

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R33025**	RunNo: **33025**
Prep Date:	Analysis Date: **3/23/2016**	SeqNo: **1013096** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	12		10.00		118	70	130			
Surr: Toluene-d8	9.5		10.00		95.5	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: APEX AZTEC | Work Order Number: 1603B30 | RcptNo: 1

Received by/date: 03/23/16

Logged By: Lindsay Mangin 3/23/2016 7:00:00 AM

Completed By: Lindsay Mangin 3/23/2016 8:37:42 AM

Reviewed By: 03/23/16

Chain of Custody

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

Log In

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

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

Adjusted? ____

Checked by: ____

Special Handling (if applicable)

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

Person Notified: ____ Date: ____

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

Regarding: ____

Client Instructions: ____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM	Laboratory: Hall Environmental
	Address: Albuquerque, NM
	Contact: A Freeman
	Phone:
Project Manager: K. Summers	PO/SO #: ~~TETEFO~~
Sampler's Name: [illegible]	Sampler's Signature: [illegible]
Proj. No.	Project Name: Lateral K-31 (Leitzell)

ANALYSIS REQUESTED: 8260 VOCs

Lab use only
Due Date:
Temp. of coolers when received (C°): 2.6-1.0=1.6
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	AG 1 lt	250 ml	Glass Jar	P/O	8260 VOCs	Lab Sample ID (Lab Use Only)
W	3/21/16	1408			MW-2			3					✓	1603B30-001
W	↓	1420			MW-1			3					✓	-002
W	↓	1425			MW-4			3					✓	-003
W	↓	1505			MW-3			3					✓	-004

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

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	3/22/16	922	[signature]	3/22/16	922
[signature]	3/22/16	1747	[signature]	03/23/16	0700

NOTES: Bill to APEX ~~PO 4TETO~~ REF K-LE

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

March 23, 2016

Kyle Summers
Apex Titan
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (505) 716-2787
FAX

RE: Lateral K-31 (Oct 2015) OrderNo.: 1603A01

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/18/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1603A01**
Date Reported: **3/23/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Apex Titan
Project: Lateral K-31 (Oct 2015)
Lab ID: 1603A01-001 **Matrix:** SOIL

Client Sample ID: MW-1 @ 8-10'
Collection Date: 3/16/2016 9:30:00 AM
Received Date: 3/18/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/22/2016 3:55:10 PM	24348
Surr: DNOP	78.2	70-130		%Rec	1	3/22/2016 3:55:10 PM	24348
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	11	4.7		mg/Kg	1	3/22/2016 1:27:30 PM	24355
Surr: BFB	145	66.2-112	S	%Rec	1	3/22/2016 1:27:30 PM	24355
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	3/22/2016 1:27:30 PM	24355
Toluene	ND	0.047		mg/Kg	1	3/22/2016 1:27:30 PM	24355
Ethylbenzene	0.049	0.047		mg/Kg	1	3/22/2016 1:27:30 PM	24355
Xylenes, Total	0.46	0.093		mg/Kg	1	3/22/2016 1:27:30 PM	24355
Surr: 4-Bromofluorobenzene	114	80-120		%Rec	1	3/22/2016 1:27:30 PM	24355

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Apex Titan
Project: Lateral K-31 (Oct 2015)
Lab ID: 1603A01-002 **Matrix:** SOIL

Client Sample ID: MW-2 @ 8-10'
Collection Date: 3/16/2016 10:15:00 AM
Received Date: 3/18/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/22/2016 4:17:16 PM	24348
Surr: DNOP	80.9	70-130		%Rec	1	3/22/2016 4:17:16 PM	24348
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/22/2016 2:37:59 PM	24355
Surr: BFB	108	66.2-112		%Rec	1	3/22/2016 2:37:59 PM	24355
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/22/2016 2:37:59 PM	24355
Toluene	ND	0.048		mg/Kg	1	3/22/2016 2:37:59 PM	24355
Ethylbenzene	ND	0.048		mg/Kg	1	3/22/2016 2:37:59 PM	24355
Xylenes, Total	ND	0.096		mg/Kg	1	3/22/2016 2:37:59 PM	24355
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	3/22/2016 2:37:59 PM	24355

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Apex Titan
Project: Lateral K-31 (Oct 2015)
Lab ID: 1603A01-003 **Matrix:** SOIL

Client Sample ID: MW-3 @ 6-8'
Collection Date: 3/16/2016 11:15:00 AM
Received Date: 3/18/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	3/22/2016 4:39:16 PM	24348
Surr: DNOP	88.3	70-130		%Rec	1	3/22/2016 4:39:16 PM	24348
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/22/2016 3:48:35 PM	24355
Surr: BFB	105	66.2-112		%Rec	1	3/22/2016 3:48:35 PM	24355
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/22/2016 3:48:35 PM	24355
Toluene	ND	0.048		mg/Kg	1	3/22/2016 3:48:35 PM	24355
Ethylbenzene	ND	0.048		mg/Kg	1	3/22/2016 3:48:35 PM	24355
Xylenes, Total	ND	0.095		mg/Kg	1	3/22/2016 3:48:35 PM	24355
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	3/22/2016 3:48:35 PM	24355

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Apex Titan
Project: Lateral K-31 (Oct 2015)
Lab ID: 1603A01-004 **Matrix:** SOIL

Client Sample ID: MW-4 @ 8-10'
Collection Date: 3/16/2016 12:15:00 PM
Received Date: 3/18/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/22/2016 5:01:25 PM	24348
Surr: DNOP	79.2	70-130		%Rec	1	3/22/2016 5:01:25 PM	24348
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/22/2016 4:12:01 PM	24355
Surr: BFB	105	66.2-112		%Rec	1	3/22/2016 4:12:01 PM	24355
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/22/2016 4:12:01 PM	24355
Toluene	ND	0.048		mg/Kg	1	3/22/2016 4:12:01 PM	24355
Ethylbenzene	ND	0.048		mg/Kg	1	3/22/2016 4:12:01 PM	24355
Xylenes, Total	ND	0.095		mg/Kg	1	3/22/2016 4:12:01 PM	24355
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	3/22/2016 4:12:01 PM	24355

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603A01**

23-Mar-16

Client: Apex Titan

Project: Lateral K-31 (Oct 2015)

Sample ID **LCS-24346**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **24346**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011102** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	70	130			

Sample ID **LCS-24347**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **24347**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011103** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		103	70	130			

Sample ID **MB-24346**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **24346**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011104** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		105	70	130			

Sample ID **MB-24347**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **24347**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011105** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	70	130			

Sample ID **LCS-24348**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **24348**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011724** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Range Organics (DRO)	36	10	50.00	0	72.8	65.8	136			
Surr: DNOP	3.9		5.000		78.1	70	130			

Sample ID **MB-24348**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **24348**	RunNo: **32965**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011725** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Range Organics (DRO)	ND	10								
Surr: DNOP	7.7		10.00		76.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603A01**

23-Mar-16

Client: Apex Titan

Project: Lateral K-31 (Oct 2015)

Sample ID **MB-24355**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	66.2	112			

Sample ID **LCS-24355**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011661** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.9	80	120			
Surr: BFB	1100		1000		110	66.2	112			

Sample ID **1603A01-002AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-2 @ 8-10'**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011664** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.6	23.21	0	105	59.3	143			
Surr: BFB	1100		928.5		115	66.2	112			S

Sample ID **1603A01-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MW-2 @ 8-10'**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011665** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.7	23.61	0	102	59.3	143	1.29	20	
Surr: BFB	1100		944.3		116	66.2	112	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1603A01**

23-Mar-16

Client: Apex Titan

Project: Lateral K-31 (Oct 2015)

Sample ID **MB-24355**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011677** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID **LCS-24355**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011678** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.9	75.3	123			
Toluene	0.89	0.050	1.000	0	88.8	80	124			
Ethylbenzene	0.92	0.050	1.000	0	91.7	82.8	121			
Xylenes, Total	2.7	0.10	3.000	0	90.6	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID **1603A01-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-1 @ 8-10'**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011680** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.023	0.9381	0.01203	93.7	71.5	122			
Toluene	0.89	0.047	0.9381	0.01902	92.9	71.2	123			
Ethylbenzene	0.98	0.047	0.9381	0.04876	99.8	75.2	130			
Xylenes, Total	3.4	0.094	2.814	0.4616	106	72.4	131			
Surr: 4-Bromofluorobenzene	1.1		0.9381		120	80	120			S

Sample ID **1603A01-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-1 @ 8-10'**	Batch ID: **24355**	RunNo: **32985**
Prep Date: **3/21/2016**	Analysis Date: **3/22/2016**	SeqNo: **1011681** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9515	0.01203	93.4	71.5	122	1.07	20	
Toluene	0.91	0.048	0.9515	0.01902	93.7	71.2	123	2.25	20	
Ethylbenzene	0.99	0.048	0.9515	0.04876	99.3	75.2	130	0.854	20	
Xylenes, Total	3.4	0.095	2.854	0.4616	103	72.4	131	1.27	20	
Surr: 4-Bromofluorobenzene	1.2		0.9515		123	80	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **APEX AZTEC** Work Order Number: **1603A01** RcptNo: **1**

Received by/date: 03/18/16

Logged By: **Lindsay Mangin** 3/18/2016 7:30:00 AM

Completed By: **Lindsay Mangin** 3/19/2016 11:39:08 AM

Reviewed By: IO 03/21/16

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Not Present			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec, NM

Project Manager: K. Summers

Laboratory: Hall Environmental

Address: Albuquerque, NM

Contact: A. Freeman

Phone:

PO/SO #: 7250415025

Sampler's Name: Chad D'Apenti / Ronnie Deechilly

Sampler's Signature: Ron Deechilly

Proj. No.: 7250415025

Project Name: Lateral K-31 (Oct 2015)

No/Type of Containers

ANALYSIS REQUESTED: 8021 BTEX; 8015 TPH (GRO/DRO)

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.3

1 | 2 | 3 | 4 | 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt	250 ml	Glass Jar	P/O	8021 BTEX	8015 TPH (GRO/DRO)	Lab Sample ID (Lab Use Only)
S	3/16/16	0930			MW-1 @ 8-10'						1		X	X	1603A01-001
S		1015			MW-2 @ 8-10'						1		X	X	-002
S		1115			MW-3 @ 6-8'						1		X	X	-003
S		1215			MW-4 @ 8-10'						1		X	X	-004

NFS

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Ron Deechilly	3/17/16	1530	Christine Walker	3/17/16	1530
Christine Walker	3/17/16	1846		03/18/16	0735
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Bill to Apex Corporate rate

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other