pG-VG-1432251269

APEX

ANNUAL GROUNDWATER MONITORING REPORT
(JULY AND DECEMBER 2017 EVENTS)

Property:

Lateral K-12 Y#3 Condensate Tank Release (3/19/12)
SW 1/4, S23 T27N R7W
Rio Arriba County, New Mexico
OCD RP: 3R-459

May 24, 2018
Apex Project No. 725040112191

Prepared for:

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NMOCD
NOV 20 2018
DISTRICT III

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ANNUAL GROUNDWATER MONITORING REPORT
(JULY AND DECEMBER 2017 EVENTS)
Lateral K-12 Y#3 Condensate Tank Release (3/19/12)
Executive Summary

Semi-annual groundwater monitoring events were conducted at the Lateral K-12 Y#3 condensate tank release site, referred to hereinafter as the "Site", during July and December 2017. The Site is located within the southwest (SW) 1/4, of Section 23, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico (36.554120N, 107.549350W). The Site is located adjacent to an unpaved road, on land managed by the United States Bureau of Land Management (BLM). The surrounding area is predominately rangeland, periodically interrupted by oil and gas production and gathering facilities. Two (2) natural gas pipelines operated by Enterprise Field Services, LLC (Enterprise) traverse the northeast portion of the Site, parallel to the unpaved access road, and a condensate tank, which overlies a backfilled remediation excavation, is present in the central portion of the Site.

On March 19, 2012, a natural gas condensate release, estimated at less than one (1) barrel (bbl), occurred as the result of overfilling the condensate tank. During the excavation of
(April 2012), a suspected historical earthen pit was dis
to remove historically impacted soils. Due to the increa
associated with the depth of the excavation, the exc
BLM. Groundwater was not identified in the 35-foo
Subsequent site investigations by Animas Environm
advancement of nine (9) soil borings and the installati
wells/monitoring wells to delineate the extent of hydr
and potentially provide subsurface access for "high-vac
intended use, the SVE wells at this Site are now re
collected from the soil borings and monitoring wells exhi
ethylbenzene, and total xylenes (BTEX) and total petrol
Mexico Energy, Minerals, and Natural Resources D
Division (OCD) *Remediation Action Levels (RALs)* in s
Quality Control Commission (WQCC) *Groundwater Qu*
Additionally, non-aqueous phase liquid (NAPL) was iden
SVE-1. NAPL was removed from SVE-1 by bailing and di
in SVE-1 since.

Further
Delineate
12
13

Additional delineation activities were performed by AES ... by Apex TITAN, Inc. during 2016. There are currently 11 monitoring wells at the Site.

The objective of the semi-annual groundwater monitoring was to further evaluate the concentrations of COCs in subsurface water and groundwater at the Site.

- Based on available information, the first apparent water-bearing unit at the Site (at least in the vicinity of the remediation excavation) appears very limited in thickness and volume and may be more accurately described as subsurface water (as defined in New Mexico Administrative Code 20.6.2.7 (UU)). It appears that water observed in the upgradient monitoring wells may be limited to a small volume of percolating water from precipitation events that periodically collects on or near the surface of the weathered subgrade bedrock and, depending on the significance of the precipitation events, subsequently drains into the monitoring wells and the associated well bore annuli. This speculation is further supported by the lack of water encountered during prior excavation activities (reaching 35 feet bgs) which exceeded the measured depth to groundwater at the Site of approximately 27 feet bgs near the source area. Additionally, bail-down tests performed on monitoring wells near the source area in 2013 demonstrated stagnant or near-

stagnant water recharge over the course of several days.

- During completion of the July and December 2017 sampling events, one (1) groundwater sample was collected from each monitoring well utilizing low-flow sampling techniques. Monitoring wells MW-3 through MW-5 were found to be dry or did not recharge a sufficient volume of water to allow for the collection of samples during either sampling event.

- **During the July 2017 sampling event, the groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited BTEX constituent concentrations above the applicable WQCC *GQSs.*** The groundwater samples collected from monitoring wells MW-1, SVE 3, and MW-12 did not exhibit BTEX constituent concentrations above the applicable WQCC *GQSs*.

- **During the December 2017 sampling event, the groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited BTEX constituent concentrations above the applicable WQCC *GQSs.*** The groundwater sample collected from monitoring wells MW-1, SVE 3, and MW-12 did not exhibit BTEX constituent concentrations above the applicable WQCC *GQSs*.

- The groundwater flow direction at the Site appears to be primarily east and north, with a variable apparent gradient of approximately 0.01 feet per foot (ft/ft) to 0.04 ft/ft.

Apex offers the following recommendations:

- **Report the groundwater monitoring results to the New Mexico EMNRD OCD;**

- **Continue semi-annual groundwater sampling events;**

- **Further delineate the dissolved-phase groundwater plume;**

- **Evaluate in situ remediation options for source area soils.**

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Lateral K-12 Y#3 Condensate Tank Release (3/19/12)
SW 1/4, S23 T27N R7W
Rio Arriba County, New Mexico
OCD RP: 3R-459

Apex Project No. 725040112191

1.0 INTRODUCTION

1.1 Site Description & Background

The Lateral K-12 Y#3 condensate tank release site, referred to hereinafter as the "Site", is located within the southwest (SW) 1/4, of Section 23, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico (36.554120N, 107.549350W). The Site is located adjacent to an unpaved road, on land managed by the United States Bureau of Land Management (BLM). The surrounding area is predominately rangeland, periodically interrupted by oil and gas production and gathering facilities. Two (2) natural gas pipelines operated by Enterprise Field Services, LLC (Enterprise) traverse the northeast portion of the Site, parallel to the unpaved access road, and a condensate tank, which overlies a backfilled remediation excavation, is present in the central portion of the Site.

On March 19, 2012, a natural gas condensate release estimated at less than one (1) barrel (bbl) occurred as the result of overfilling the condensate tank. Animas Environmental Services, LLC (AES) conducted an initial release assessment and subsequently recommended the removal of affected soils (*Release Mitigation and Investigation Report, dated July 18, 2012 – AES*).

During corrective action excavation in April 2012, a suspected historical earthen pit was discovered, and the excavation was expanded to remove the historical petroleum hydrocarbon affected soils. Due to the increased area of disturbance and safety factors associated with the depth of the excavation, the excavation activities were suspended by the BLM, and confirmation soil samples (SC-1 through SC-9) were collected by AES. Groundwater was not identified in the 35-foot deep excavation. Subsequent to backfilling the excavation with clean fill, AES conducted a site investigation that included the advancement of seven (7) soil borings (SB-1 through SB-7). Three (3) of the soil borings (SB-1/SVE-1, SB-3/SVE-2, SB-4/SVE-3), were completed as soil-vapor-extraction (SVE) monitoring wells in anticipation of potential future remedial activities. Due to a change in the intended use, the SVE wells at this Site are now referred to as "monitoring wells".

On July 19, 2013, AES conducted a monitoring event of the SVE wells which identified the presence of water in the three (3) SVE wells and the presence of non-aqueous phase liquid (NAPL) in monitoring well SVE-1 (1.07 feet thick). This NAPL was removed by bailing and did not recharge. AES also advanced two (2) soil borings (SB-8 and SB-9) adjacent to the former excavation, which demonstrated minimal natural attenuation of constituent of concern (COC) concentrations since the backfilling of the excavation. On July 22, 2013, AES collected water samples from monitoring wells SVE-2 and SVE-3 for laboratory analysis of total dissolved solids (TDS) and chlorides. Laboratory analytical results indicated that TDS concentrations were 1,160 milligrams per liter (mg/L) and 740 mg/L in SVE-2 and SVE-3, respectively, and chloride concentrations were 110 mg/L and 23 mg/L in SVE-2 and SVE-3, respectively (*Continued Site Investigation Report, dated October 4, 2013 – AES*).

Based on available information, the first apparent water-bearing unit at the Site appears very limited in thickness and volume and may be more accurately described as subsurface water (as defined in New Mexico Administrative Code 20.6.2.7 (UU)). It appears that water observed in the monitoring wells (at least in the vicinity of the remediation excavation) may be limited to a small volume of percolating water from precipitation events that periodically collects on or near the surface of the weathered subgrade bedrock and, depending on the significance of the precipitation events, subsequently drains into the monitoring wells and the associated well bore annuli. This speculation is further supported by the lack of water encountered during prior excavation activities (reaching 35 feet bgs) which exceeded the measured depth to groundwater at the Site of approximately 27 feet bgs near the source area. Additionally, bail-down tests performed on monitoring wells near the source area in 2013 demonstrated stagnant or near-stagnant water recharge over the course of several days.

A "groundwater" monitoring and sampling event was conducted by AES on October 8, 2013. NAPL was not observed in monitoring well SVE-1 during this monitoring and sampling event. However, presumably due to settling associated with the backfilled excavation, the screened portion of monitoring well SVE-1 was damaged and collection of a water sample was not possible. Water samples were collected from monitoring wells SVE-2 and SVE-3 for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total petroleum hydrocarbons (TPH) gasoline range organics (GRO), diesel range organics (DRO), and motor oil/lube oil range organics (MRO) (*Groundwater Monitoring Report and Continued Site Investigation Workplan, dated November 15, 2013 – AES*).

During January 2014, AES advanced six (6) soil borings, five (5) of which were completed as "groundwater" monitoring wells MW-1 through MW-5, and one (1) of which was utilized to replace monitoring well SVE-1 with SVE-1R. Monitoring well SVE-1 was apparently plugged and abandoned at that time.

During August and September 2016, Apex TITAN, Inc., (Apex) conducted a site investigation at the Site by advancing seven (7) soil borings to further evaluate the extent of hydrocarbon affected soil and potentially impacted groundwater. Laboratory analytical results identified TPH GRO/DRO concentrations that exceed applicable New Mexico Energy, Minerals and Natural Resource Department (EMNRD) Oil Conservation Division (OCD) *Remediation Action Levels (RALs)* in soil samples from monitoring well borings MW-11 and MW-13. Three (3) soil borings were completed as "groundwater" monitoring wells MW-11 through MW-13. The analytical results for the groundwater samples collected from these wells indicated benzene, toluene, and total xylenes in excess of the Water Quality Control Commission (WQCC) *Groundwater Quality Standards (GQSs)* (*Supplemental Environmental Site Investigation and Annual Subsurface Water Monitoring Report*, dated February 24, 2017 - Apex).

A **Topographic Map** is provided as **Figure 1** of **Appendix A**, which was reproduced from a portion of a United States Geological Survey (USGS) 7.5-minute series topographic map. A **Site Vicinity Map**, created from an aerial photograph, is provided as **Figure 2**, and a **Site Map**, which indicates the locations of the monitoring wells and recent soil borings in relation to pertinent structures and general Site boundaries, is provided as **Figure 3** of **Appendix A**.

1.2 Project Objective

The primary objective of the annual groundwater monitoring was to further evaluate the concentrations of COCs in subsurface water and groundwater at the Site with respect to WQCC *GQSs*.

2.0 GROUNDWATER MONITORING

2.1 Groundwater Sampling Program

During July and December 2017, Apex conducted groundwater sampling events in which eight (8) monitoring wells were sampled.

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 NAPL.

Each monitoring well was sampled utilizing micro-purge 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 or decontaminated sampling equipment.

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 while purging. Purging is considered complete once key parameters (especially pH and conductivity) have stabilized for three successive readings.

Groundwater samples were collected in laboratory supplied containers, labeled/sealed using the laboratory supplies labels and custody seals, and stored on ice in a cooler. The samples were relinquished to the courier for Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, New Mexico under proper chain-of-custody procedures.

2.2 Groundwater Laboratory Analytical Program

Groundwater samples were analyzed for BTEX utilizing Environmental Protection Agency (EPA) SW-846 Method 8021/8260. Sample containers for groundwater were pre-preserved with mercuric chloride ($HgCl_2$).

A summary of the analyte, sample matrix, sample frequency, and EPA-approved methods is presented in the following table:

Analyte	Sample Matrix	No. of Samples (per event)	EPA Method
BTEX	Groundwater	8	SW-846 8021/8260

Groundwater analytical results are summarized in **Table 1** (**Appendix B**). The laboratory data sheets and executed chain-of-custody form are provided in **Appendix C**.

2.3 Groundwater Flow Direction

Each of the monitoring wells was geospatially surveyed to determine 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 during the 2017 sampling events. The groundwater flow direction at the Site appears to be primarily east and north, with a variable apparent gradient of approximately 0.01 feet per foot (ft/ft) to 0.04 ft/ft.

Groundwater measurements collected during the July and December 2017 sampling events (as well as historical data) are presented with TOC elevations in **Table 2** (**Appendix B**). July and December 2017 gradient maps are included as **Figure 4A** and **Figure 4B** (**Appendix A**).

2.4 Groundwater Samples Data Evaluation

Apex compared BTEX concentrations or laboratory PQLs associated with the groundwater samples collected from the Site monitoring wells during the July and December 2017 sampling events to the WQCC *GQSs*. The results of the groundwater sample analyses are summarized in **Table 1** of **Appendix B**. Groundwater Quality Standards Exceedance Zone Maps that includes the July and December exceedances are provided as **Figure 5A** and **Figure 5B** of **Appendix A**.

Monitoring wells MW-3 through MW-5 were dry or did not produce a sufficient volume of water to allow for the collection of samples during the July and December sampling event and were not sampled.

July 2017 Sampling Event

The groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited benzene concentrations ranging from 55 micrograms per liter (µg/L) (MW-13) to 2,100 µg/L (MW-2), which are above the WQCC *GQS* of 10 µg/L. The groundwater sample collected from monitoring well SVE-3 exhibited a benzene concentration of 6.7 µg/L, which is below the WQCC GQS of 10 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit benzene concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-11 and MW-13 exhibited toluene concentrations of 110 µg/L and 290 µg/L, respectively, which are below the WQCC *GQS* of 750 µg/L. The groundwater samples collected from the remaining monitoring wells did not exhibit toluene concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 750 µg/L.

The groundwater samples collected from monitoring wells SVE-1R, SVE-2, SVE-3, MW-2, MW-11, and MW-13 exhibited ethylbenzene concentrations ranging from 33 µg/L (SVE-1R) to 410 µg/L (MW-2), which are below the WQCC *GQS* of 750 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit ethylbenzene concentrations above the

laboratory PQLs, which are below the WQCC *GQS* of 750 µg/L.

The groundwater samples collected from monitoring wells SVE-2, MW-2, and MW-11 exhibited total xylenes concentrations ranging from 1,900 µg/L (SVE-2) to 4,800 µg/L (MW-2), which are above the WQCC *GQS* of 620 µg/L. The groundwater samples collected from monitoring wells SVE-1R, SVE-3, and MW-13 exhibited total xylenes concentrations ranging from 90 µg/L (SVE-1R) to 470 µg/L (MW-13), which are below the WQCC *GQS* of 620 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit total xylenes concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 620 µg/L.

No data qualifier flags were associated with the July 2017 groundwater analytical results.

December 2017 Sampling Event

The groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited benzene concentrations ranging from 58 µg/L (MW-13) to 1,300 µg/L (MW-2), which are above the WQCC *GQS* of 10 µg/L. The groundwater sample collected from monitoring well SVE-3 exhibited a benzene concentration of 3.8 µg/L, which is below the WQCC GQS of 10 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit benzene concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 10 µg/L.

The groundwater samples collected from monitoring wells MW-11 and MW-13 exhibited toluene concentrations of 170 µg/L and 110 µg/L, respectively, which are below the WQCC *GQS* of 750 µg/L. The groundwater samples collected from the remaining monitoring wells did not exhibit toluene concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 750 µg/L.

The groundwater samples collected from monitoring wells SVE-1R, SVE-2, SVE-3, MW-2, MW-11, and MW-13 exhibited ethylbenzene concentrations ranging from 19 µg/L (MW-13) to 310 µg/L (MW-11), which are below the WQCC *GQS* of 750 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit ethylbenzene concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 750 µg/L.

The groundwater samples collected from monitoring wells SVE-2, MW-2, and MW-11 exhibited total xylenes concentrations ranging from 1,800 µg/L (SVE-2 and MW-2) to 3,100 µg/L (MW-11), which are above the WQCC *GQS* of 620 µg/L. The groundwater samples collected from monitoring wells SVE-1R, SVE-3, and MW-13 exhibited total xylenes concentrations ranging from 11 µg/L (SVE-3) to 150 µg/L (MW-13), which are below the WQCC *GQS* of 620 µg/L. The groundwater samples collected from monitoring wells MW-1 and MW-12 did not exhibit total xylenes concentrations above the laboratory PQLs, which are below the WQCC *GQS* of 620 µg/L.

Data Qualifier Flags

Sample ID	Data Qualifier Flag	Comments/Reactions
SVE-3 (collected 12/12/2017)	Sample Diluted Due to Matrix.	The sample was diluted due to matrix interference. Result is usable as an estimated value.

3.0 FINDINGS AND RECOMMENDATIONS

The primary objective of the annual groundwater monitoring was to further evaluate the concentrations of COCs in subsurface water and groundwater at the Site with respect to WQCC *GQSs*.

- During the completion of the July and December 2017 sampling events, one (1) groundwater sample was collected from each viable monitoring well utilizing low-flow sampling techniques. Monitoring wells MW-3 through MW-5 were found to be dry or did not produce a sufficient volume of water to allow for the collection of samples during either sampling event.

- The subsurface water flow direction at the Site appears to be primarily east and north, with a variable apparent gradient of approximately 0.01 ft/ft.

- **During the July 2017 sampling event, the groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited BTEX constituent concentrations above the applicable WQCC *GQSs*.** The groundwater samples collected from monitoring wells MW-1, SVE-3, and MW-12 did not exhibit BTEX constituent concentrations above the applicable WQCC *GQSs*.

- **During the December 2017 sampling event, the groundwater samples collected from monitoring wells SVE-1R, SVE-2, MW-2, MW-11, and MW-13 exhibited BTEX constituent concentrations above the applicable WQCC *GQSs*.** The groundwater samples collected from monitoring wells MW-1, SVE-3, and MW-12 did not exhibit BTEX constituent concentrations above the applicable WQCC *GQSs*.

Based on the results of the groundwater monitoring, Apex has the following recommendations:

- **Report the groundwater monitoring results to the New Mexico EMNRD OCD;**

- **Continue semi-annual groundwater sampling events;**

- **Further delineate the dissolved-phase groundwater;**

- **Evaluate in situ remediation options for source area soils.**

4.0 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.

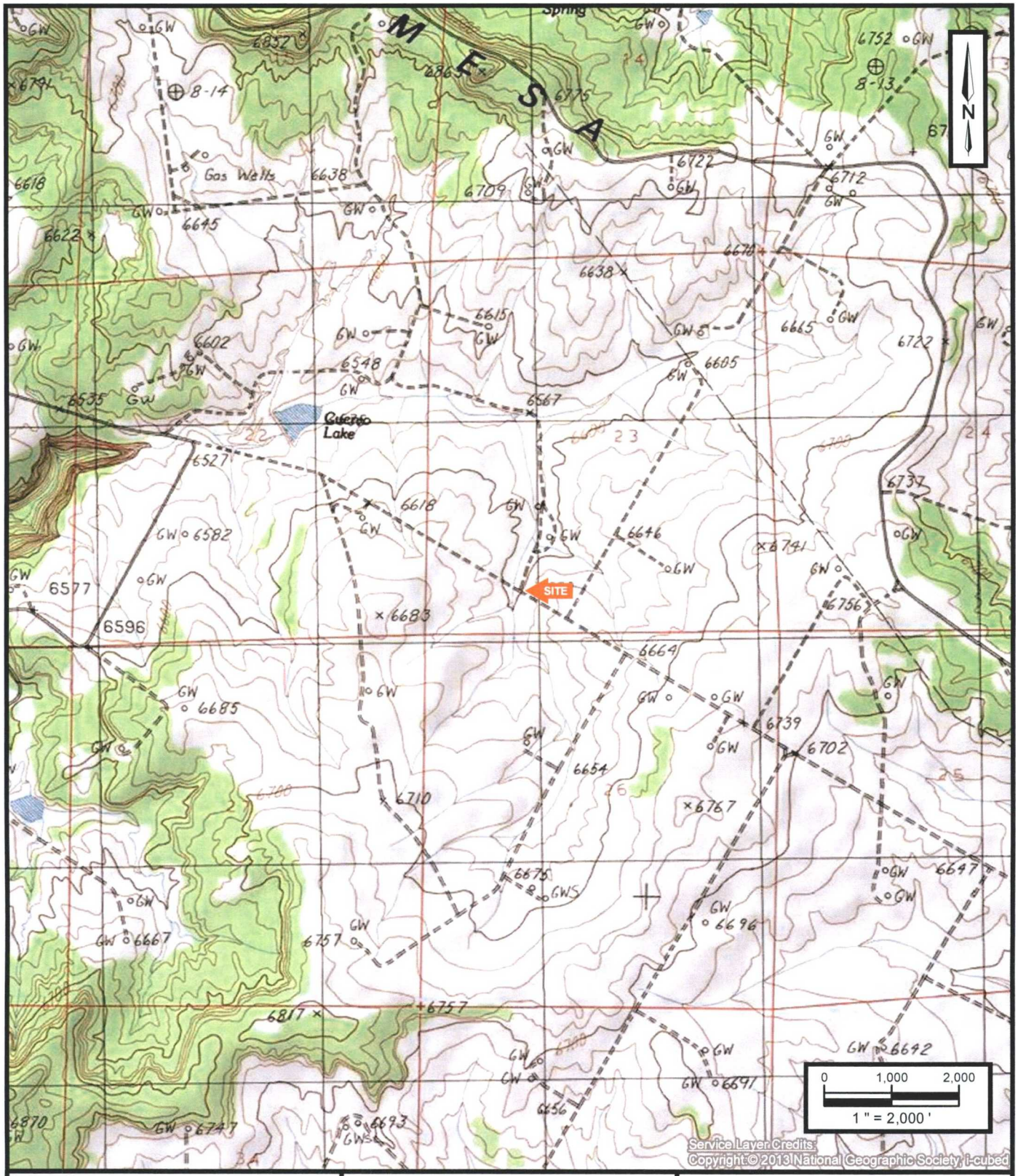
Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-Site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence 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



K-12 Y#3 Condensate Tank Release
SW1/4 S23 T27N R7W
Rio Arriba County, New Mexico
36.554120 N, 107.549350 W

Project No. 725040112191

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FIGURE 1

Topographic Map

Gould Pass New Mexico Quadrangle
1985

Z:\Dallas South\Drafting\2016\725040112191\Figure 1.mxd Modified 1/26/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System

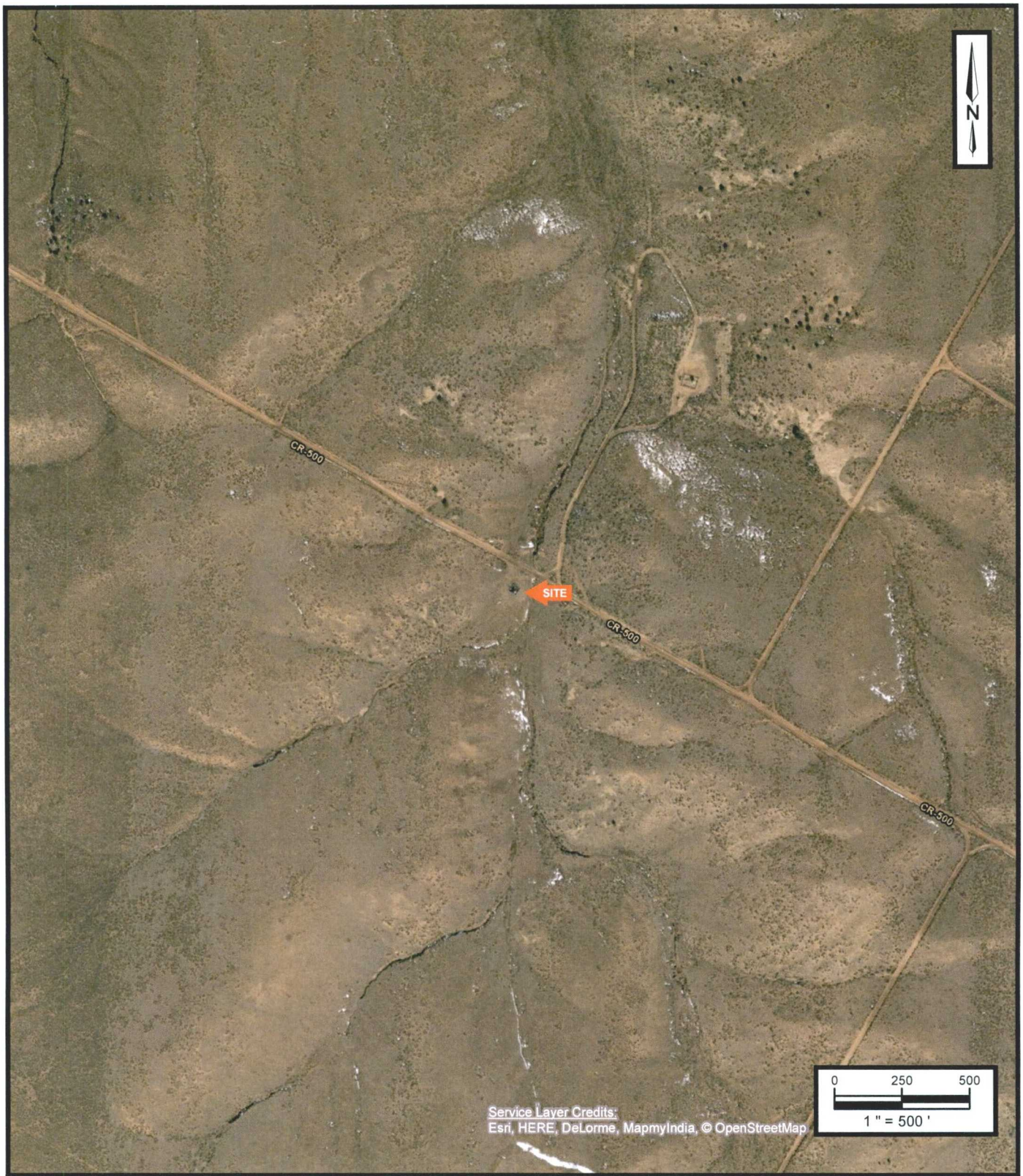

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FIGURE 2

Site Vicinity Map

Aerial Photograph February 2016

Z:\Dallas South\Drafting\2016\725040112191\Figure 2.mxd Modified 1/26/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System

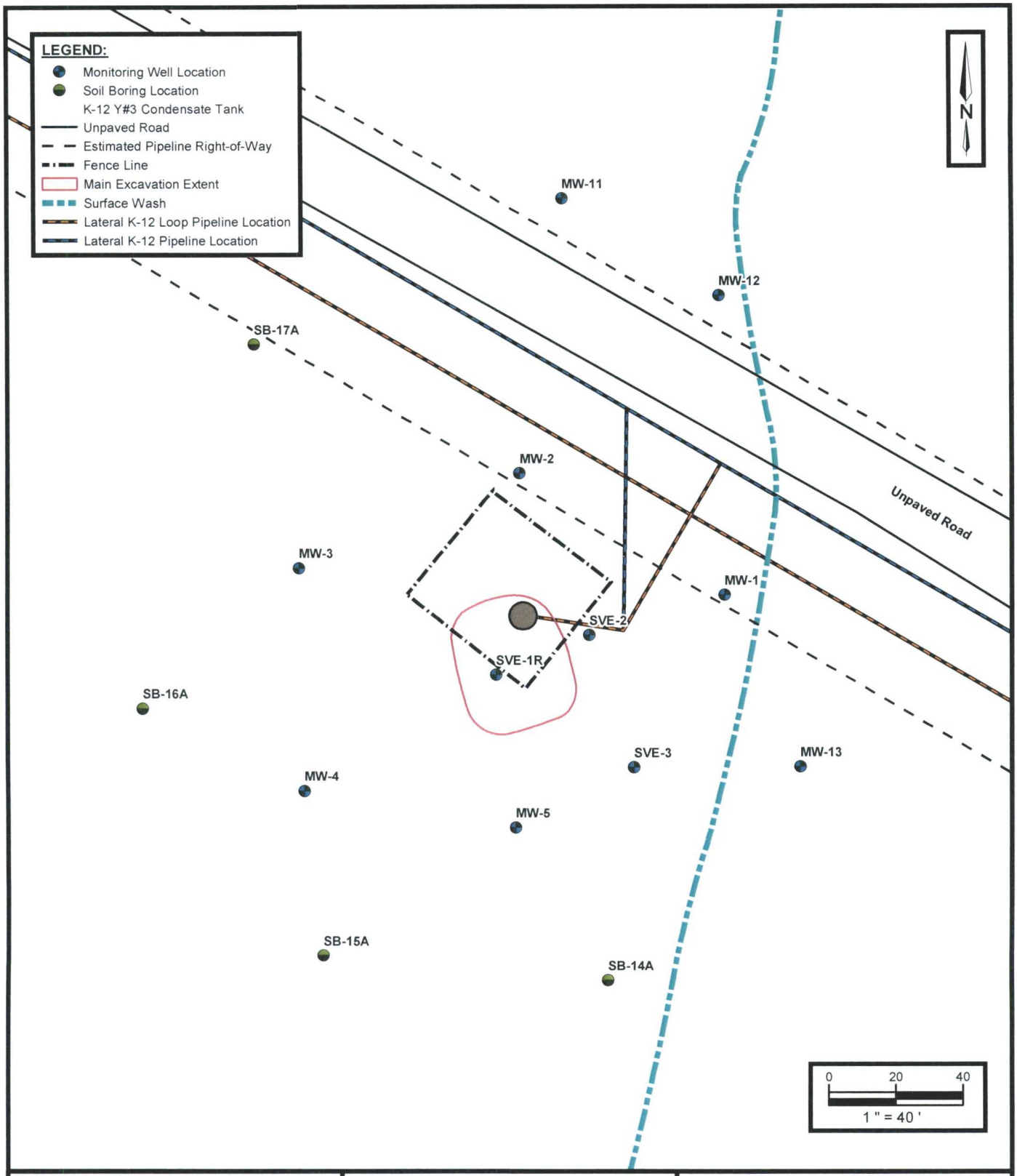

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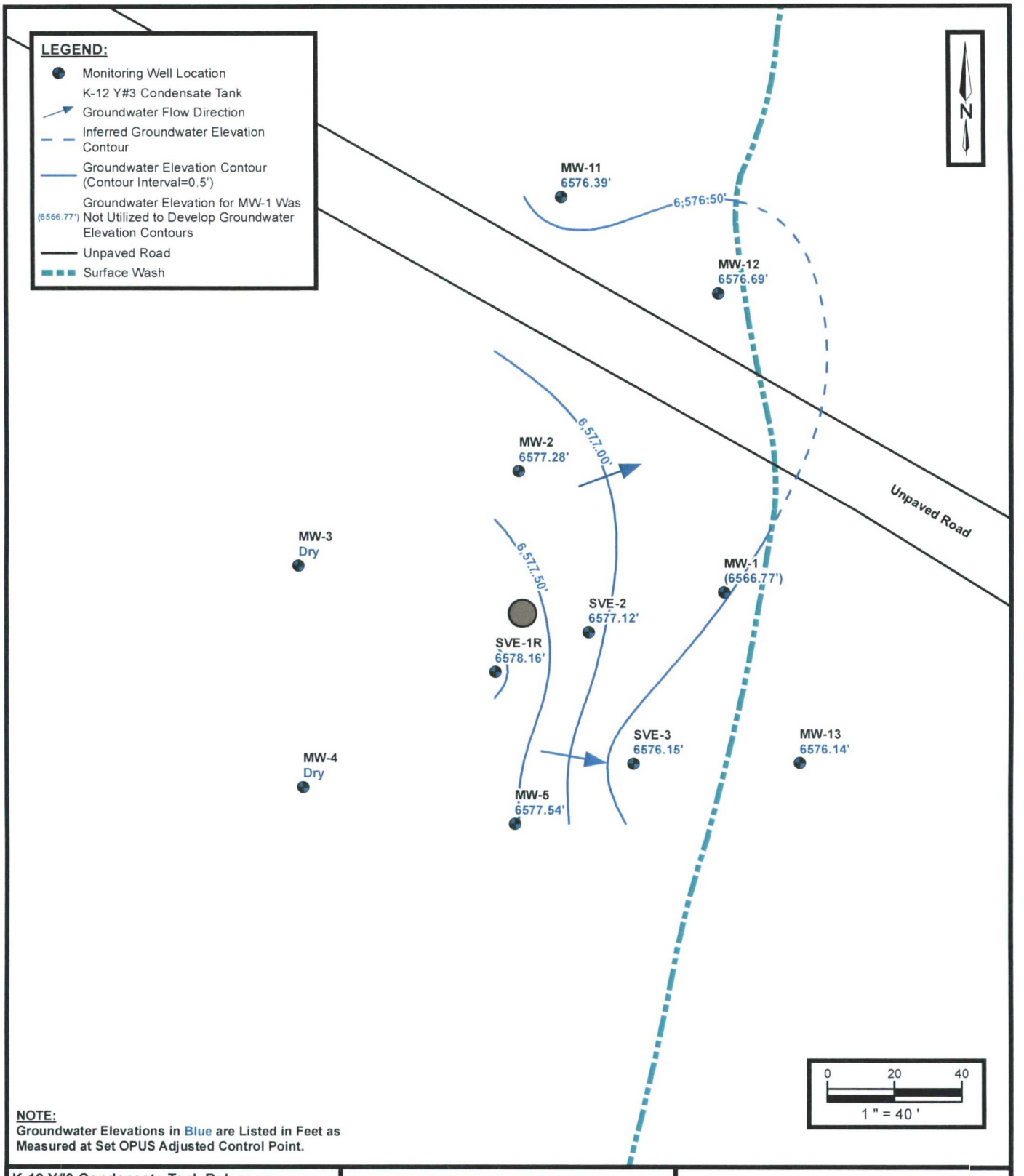
FIGURE 3

Site Map

Z:\Dallas South\Drafting\2016\725040112191\Figure 3.mxd Modified 1/26/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System



NOTE:
Groundwater Elevations in Blue are Listed in Feet as Measured at Set OPUS Adjusted Control Point.

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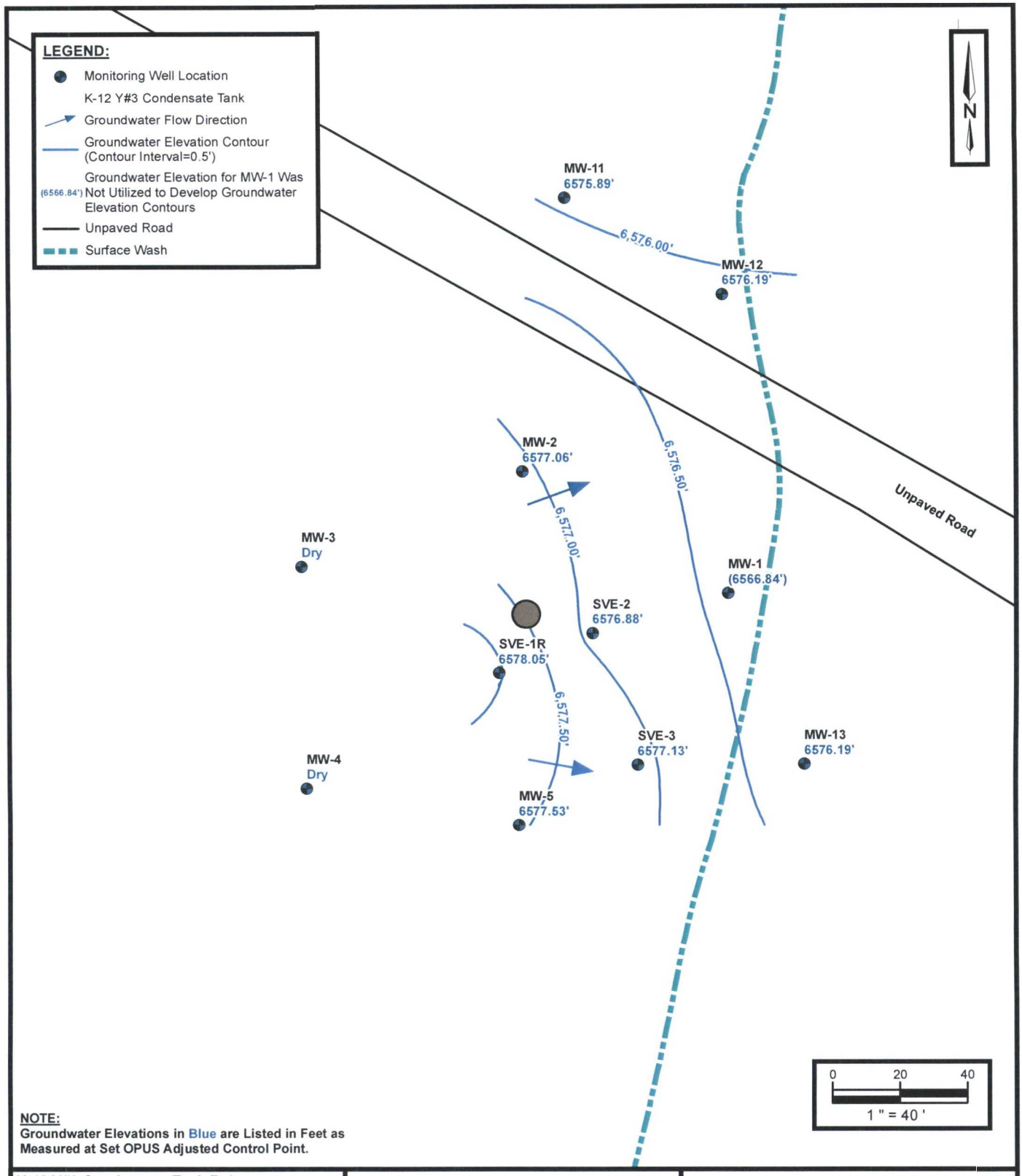
FIGURE 4A

Groundwater Gradient Map
July 2017

Z:\Dallas South\Drafting\2016\725040112191\Figure 4A.mxd Modified 3/23/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System



NOTE:
Groundwater Elevations in Blue are Listed in Feet as Measured at Set OPUS Adjusted Control Point.

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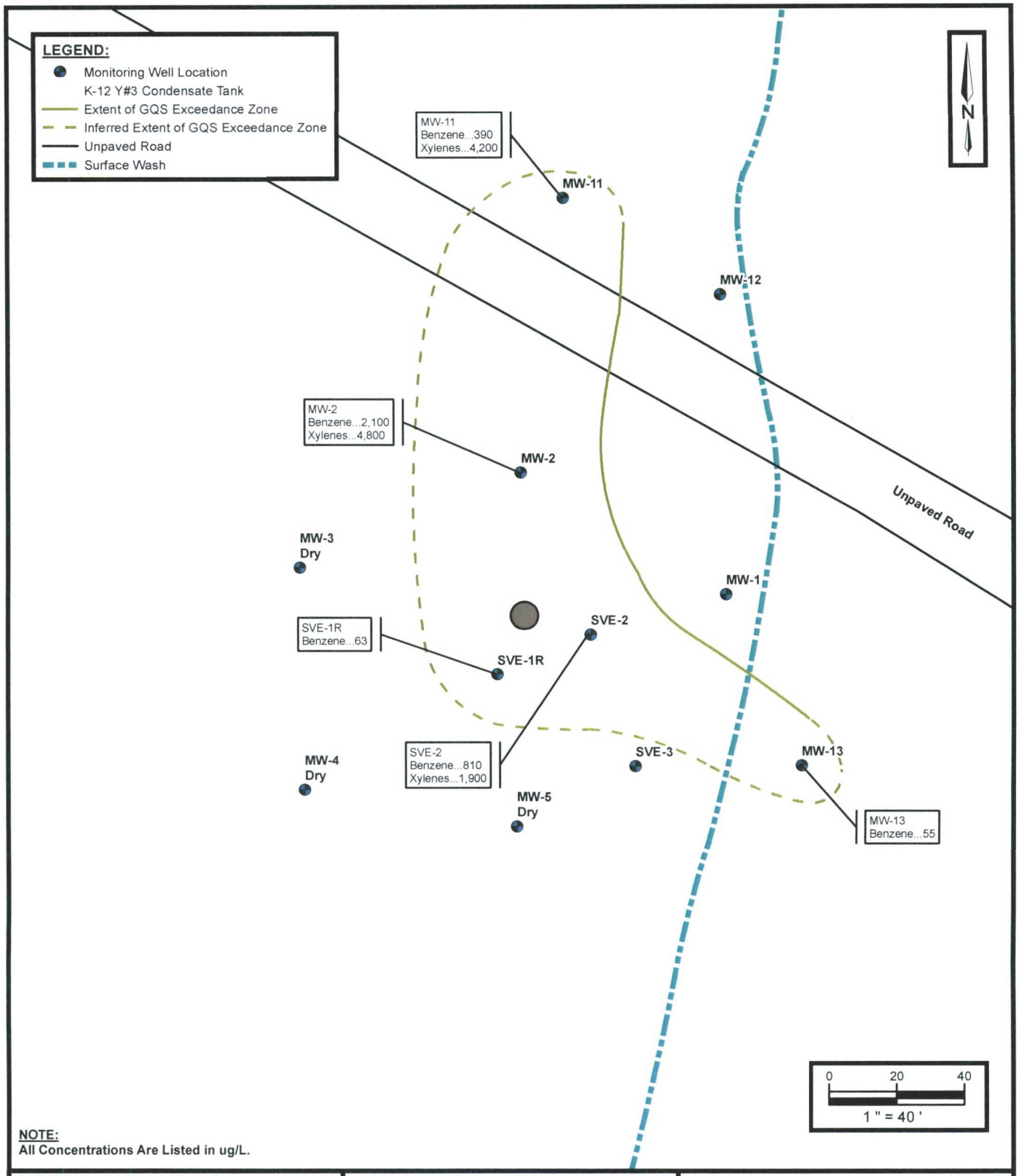
FIGURE 4B

Groundwater Gradient Map
December 2017

Z:\Dallas South\Drafting\2016\725040112191\Figure 4B.mxd Modified 3/23/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System



NOTE:
All Concentrations Are Listed in ug/L.

K-12 Y#3 Condensate Tank Release
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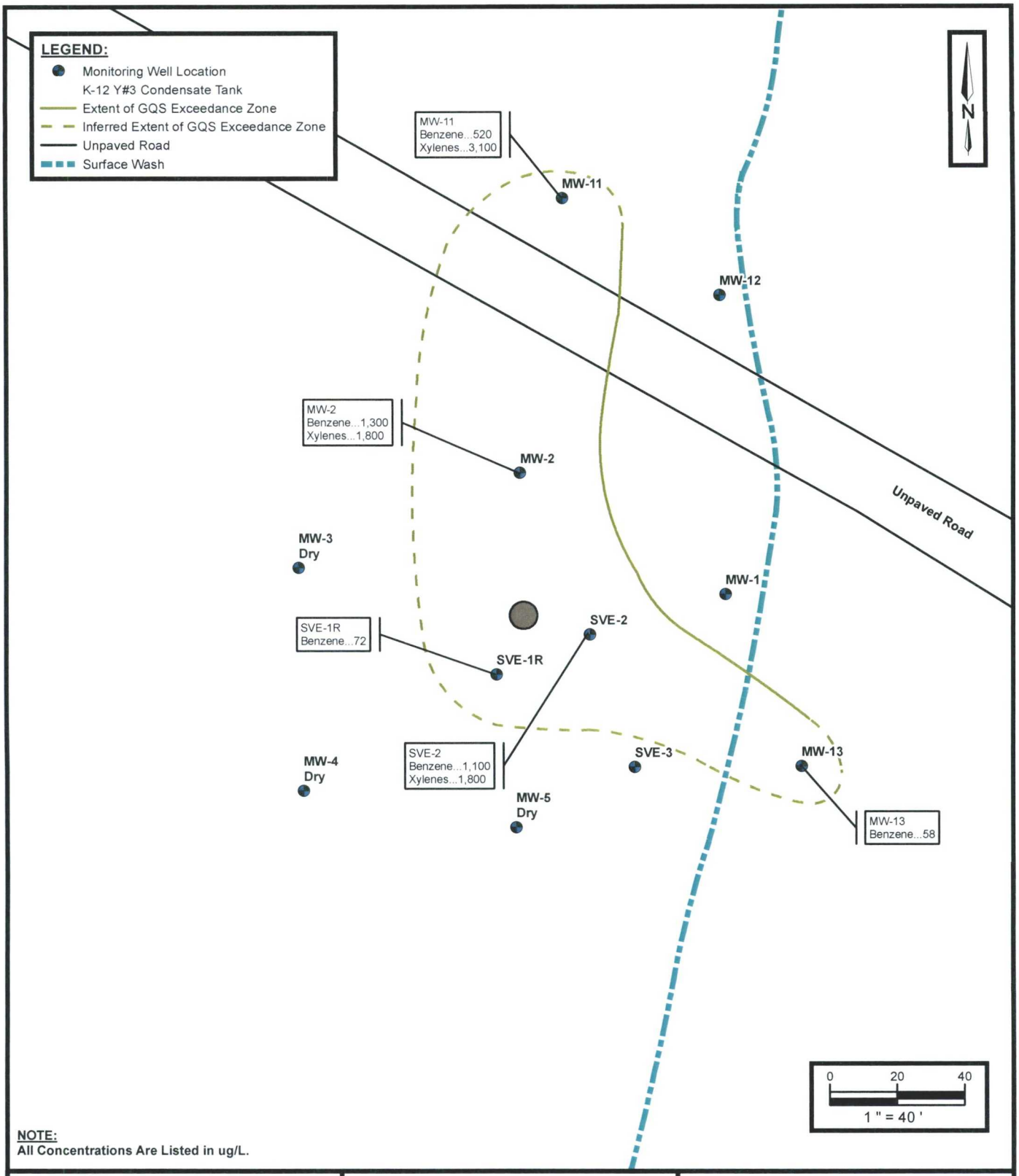
FIGURE 5A

Groundwater Quality Standard (GQS) Exceedance Zone Map
July 2017

Z:\Dallas South\Drafting\2016\725040112191\Figure 5A.mxd Modified 3/23/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System



NOTE:
All Concentrations Are Listed in ug/L.

K-12 Y#3 Condensate Tank Release
SW1/4 S23 T27N R7W
Rio Arriba County, New Mexico
36.554120 N, 107.549350 W

Project No. 725040112191

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

FIGURE 5B

Groundwater Quality Standard (GQS) Exceedance Zone Map
December 2017

Z:\Dallas South\Drafting\2016\725040112191\Figure 5B.mxd Modified 3/23/2018 by jsimpson NAD 1983 2011 StatePlane New Mexico Central FIPS 3002 Ft US Coordinate System

APPENDIX B

Tables

TABLE 1
Lateral K-12 Y#3 Condensate Tank Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)	TPH MRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10	750	750	620	NE	NE	NE
Monitoring Wells Installed by AES								
SVE-1	10.8.13	Not Sampled - Damaged well screen						
SVE-1R	2.12.14	**610**	**1,500**	100	**2,400**	NA	NA	NA
	11.13.14	**170**	3.4	93	190	NA	NA	NA
	5.26.15	**32**	<5.0	93	59	NA	NA	NA
	12.2.15	**220**	69	57	180	NA	NA	NA
	6.14.16	**150**	<5.0	28	57	NA	NA	NA
	12.12.16	**150**	<5.0	64	190	3.5	1.6	<5.0
	7.06.17	**63**	<5.0	33	90	NA	NA	NA
	12.12.17	**72**	<5.0	26	72	NA	NA	NA
SVE-2	10.8.13	**1,600**	180	270	**4,200**	18	15	<5.0
	2.12.14	**1,500**	100	360	**3,100**	NA	NA	NA
	11.13.14	**1,300**	110	270	**1,900**	NA	NA	NA
	5.27.15	**1,600**	<50	340	**2,300**	NA	NA	NA
	12.2.15	**1,200**	<50	280	**2,400**	NA	NA	NA
	6.14.16	**1,200**	<50	250	**2,500**	NA	NA	NA
	12.12.16	**1,100**	<50	330	**3,200**	16	13	<5.0
	7.06.17	**810**	<50	190	**1,900**	NA	NA	NA
	12.13.17	**1,100**	<50	200	**1,800**	NA	NA	NA
SVE-3	10.8.13	**110**	450	210	**2,000**	20	9.3	<5.0
	2.12.14	**78**	170	160	**1,500**	NA	NA	NA
	11.13.14	**12**	6.5	68	140	NA	NA	NA
	5.26.15	3.2	<5.0	100	<10	NA	NA	NA
	12.2.15	<5.0	<5.0	91	<10	NA	NA	NA
	6.14.16	<5.0	<5.0	78	57	NA	NA	NA
	12.12.16	**14**	<5.0	95	140	8.1	5.5	<5.0
	7.06.17	6.7	<5.0	110	170	NA	NA	NA
	12.12.17	3.8	<2.5	42	11	NA	NA	NA
MW-1	2.12.14	<1	<1	<1	<3	NA	NA	NA
	11.13.14	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	5.26.15	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	12.2.15	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	6.14.16	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	12.12.16	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
	7.06.17	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	12.12.17	<1.0	<1.0	<1.0	<1.5	NA	NA	NA
MW-2	2.12.14	**2,300**	**1,500**	350	**3,600**	NA	NA	NA
	11.13.14	**1,600**	520	220	**2,500**	NA	NA	NA
	5.27.15	**2,600**	530	370	**3,600**	NA	NA	NA
	12.2.15	**980**	<50	240	**2,600**	NA	NA	NA
	6.14.16	**1,800**	<50	380	**4,500**	NA	NA	NA
	12.12.16	**2,800**	<50	390	**4,700**	26	7.1	<5.0
	7.06.17	**2,100**	<50	410	**4,800**	NA	NA	NA
	12.13.17	**1,300**	<50	160	**1,800**	NA	NA	NA

TABLE 1
Lateral K-12 Y#3 Condensate Tank Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)	TPH MRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		**10**	**750**	**750**	**620**	**NE**	**NE**	**NE**
MW-3	2.12.14	Not Sampled - Well Dry						
	11.13.14							
	5.26.15							
	12.2.15							
	6.14.16							
	12.12.16							
	7.06.17							
	12.12.17							
MW-4	2.12.14	Not Sampled - Well Dry						
	11.13.14							
	5.26.15							
	12.2.15							
	6.14.16							
	12.12.16							
	7.06.17							
	12.12.17							
MW-5	2.12.14	**1,100**	**2,900**	220	**1,900**	NA	NA	NA
	11.13.14	Not Sampled - Insufficient volume to collect sample						
	5.26.15							
	12.2.15							
	6.14.16							
	12.12.16							
	7.06.17							
	12.13.17							
Monitoring Wells Installed by APEX								
MW-11	9.22.16	**320**	240	300	**3,700**	NA	NA	NA
	12.12.16	**430**	140	450	**5,000**	23	1.4	<5.0
	7.06.17	**390**	110	390	**4,200**	NA	NA	NA
	12.12.17	**520**	170	310	**3,100**	NA	NA	NA
MW-12	9.22.16	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	12.12.16	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0	<5.0
	7.06.17	<1.0	<1.0	<1.0	<2.0	NA	NA	NA
	12.12.17	<1.0	<1.0	<1.0	<1.5	NA	NA	NA
MW-13	9.22.16	**150**	**1,600**	270	**2,400**	NA	NA	NA
	01.06.17	**120**	660	53	**880**	NA	NA	NA
	7.06.17	**55**	290	46	470	NA	NA	NA
	12.12.17	**58**	110	19	150	NA	NA	NA

Note: Concentrations in **bold** and yellow exceed the applicable WQCC GQS

µg/L = microgram per liter

mg/L = milligram per liter

NA = Not Analyzed

NE = Not Established

<1.0= the numeral (in this case "1.0") identifies the laboratory reporting or practical quantitation limit

APEX

TABLE 2
Lateral K-12 Y#3 Condensate Tank 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)
SVE-1	10.08.13	ND	27.46	ND	NA	NA
SVE-1R*	02.12.14	ND	29.06	ND	6606.09	6577.03
	11.13.14	ND	30.05	ND		6576.04
	5.26.15	ND	29.27	ND		6576.82
	12.02.15	ND	28.06	ND		6578.03
	6.14.16	ND	28.05	ND		6578.04
	9.22.16	ND	28.10	ND	6606.40	6578.30
	12.12.16	ND	28.15	ND		6578.25
	7.06.17	ND	28.24	ND		6578.16
	12.12.17	ND	28.35	ND		6578.05
SVE-2*	10.08.13	ND	28.00	ND	6605.82	6577.82
	02.12.14	ND	29.39	ND		6576.43
	11.13.14	ND	29.42	ND		6576.40
	5.26.15	ND	29.86	ND		6575.96
	12.02.15	ND	28.74	ND		6577.08
	6.14.16	ND	28.58	ND		6577.24
	9.22.16	ND	28.77	ND	6606.38	6577.61
	12.12.16	ND	28.74	ND		6577.64
	7.06.17	ND	29.26	ND		6577.12
	12.12.17	ND	29.50	ND		6576.88
SVE-3*	10.08.13	ND	31.85	ND	6607.46	6575.61
	02.12.14	ND	29.98	ND		6577.48
	11.13.14	ND	29.54	ND		6577.92
	5.26.15	ND	30.93	ND		6576.53
	12.02.15	ND	30.49	ND		6576.97
	6.14.16	ND	30.37	ND		6577.09
	9.22.16	ND	30.50	ND	6607.92	6577.42
	12.12.16	ND	30.28	ND		6577.64
	7.06.17	ND	31.77	ND		6576.15
	12.12.17	ND	30.79	ND		6577.13
MW-1*	02.12.14	ND	40.95	ND	6606.53	6565.58
	11.13.14	ND	38.45	ND		6568.08
	5.26.15	ND	38.78	ND		6567.75
	12.02.15	ND	39.53	ND		6567.00
	6.14.16	ND	39.97	ND		6566.56
	9.22.16	ND	39.91	ND	6607.05	6567.14
	12.12.16	ND	39.58	ND		6567.47
	7.06.17	ND	40.28	ND		6566.77
	12.12.17	ND	40.21	ND		6566.84
MW-2*	02.12.14	ND	28.79	ND	6605.80	6577.01
	11.13.14	ND	29.27	ND		6576.53
	5.26.15	ND	29.45	ND		6576.35
	12.02.15	ND	28.28	ND		6577.52
	6.14.16	ND	28.37	ND		6577.43
	9.22.16	ND	28.62	ND	6606.28	6577.66
	12.12.16	ND	28.70	ND		6577.58
	7.06.17	ND	29.00	ND		6577.28
	12.12.17	ND	29.22	ND		6577.06

APEX

TABLE 2
Lateral K-12 Y#3 Condensate Tank 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-3*	02.12.14	ND	DRY	ND	6607.53	DRY
	11.13.14	ND	DRY	ND		DRY
	5.26.15	ND	DRY	ND		DRY
	12.02.15	ND	DRY	ND		DRY
	6.14.16	ND	DRY	ND		DRY
	9.22.16	ND	DRY	ND	6608.04	DRY
	12.12.16	ND	DRY	ND		DRY
	7.06.17	ND	DRY	ND		DRY
	12.12.17	ND	DRY	ND		DRY
MW-4*	02.12.14	ND	DRY	ND	6609.20	DRY
	11.13.14	ND	DRY	ND		DRY
	5.26.15	ND	DRY	ND		DRY
	12.02.15	ND	DRY	ND		DRY
	6.14.16	ND	DRY	ND		DRY
	9.22.16	ND	DRY	ND	6609.66	DRY
	12.12.16	ND	DRY	ND		DRY
	7.06.17	ND	DRY	ND		DRY
	12.12.17	ND	DRY	ND		DRY
MW-5*	02.12.14	ND	29.87	ND	6607.11	6577.24
	11.13.14	ND	30.04	ND		6577.07
	5.26.15	ND	DRY	ND		DRY
	12.02.15	ND	DRY	ND		DRY
	6.14.16	ND	DRY	ND		DRY
	9.22.16	ND	30.04	ND	6607.59	6577.55
	12.12.16	ND	30.50	ND		6577.09
	7.06.17	ND	30.05	ND		6577.54
	12.12.17	ND	30.06	ND		6577.53
MW-11	9.22.16	ND	27.71	ND	6604.64	6576.93
	12.12.16	ND	27.65	ND		6576.99
	7.06.17	ND	28.25	ND		6576.39
	12.12.17	ND	28.75	ND		6575.89
MW-12	9.22.16	ND	27.71	ND	6605.01	6577.30
	12.12.16	ND	27.60	ND		6577.41
	7.06.17	ND	28.32	ND		6576.69
	12.12.17	ND	28.82	ND		6576.19
MW-13	9.22.16	ND	33.60	ND	6607.61	6574.01
	12.12.16	ND	35.10	ND		6572.51
	7.06.17	ND	31.47	ND		6576.14
	12.12.17	ND	31.42	ND		6576.19

BTOC - below top of casing

AMSL - above mean sea level

TOC - top of casing

ND - Not detected

NA - Not applicable

*Monitoring well resurveyed on 9/27/16.

APEX

APPENDIX C

Laboratory Data Sheets & 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

July 13, 2017

Kyle Summers

Apex Titan, Inc.
606 S. Rio Grande Unit A
Aztec, NM 87410
TEL: (214) 350-5469
FAX (214) 350-2914

RE: K 12 Y 3 OrderNo.: 1707291

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 7/7/2017 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 qualifiers 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, Inc.
Client Sample ID: MW-11
Project: K 12 Y 3
Collection Date: 7/6/2017 9:40:00 AM
Lab ID: 1707291-001
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	390	50		µg/L	50	7/12/2017 11:07:38 AM	R44164
Toluene	110	50		µg/L	50	7/12/2017 11:07:38 AM	R44164
Ethylbenzene	390	50		µg/L	50	7/12/2017 11:07:38 AM	R44164
Xylenes, Total	4200	100		µg/L	50	7/12/2017 11:07:38 AM	R44164
Surr: 4-Bromofluorobenzene	114	72.5-140		%Rec	50	7/12/2017 11:07:38 AM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: MW-12
Project: K 12 Y 3
Collection Date: 7/6/2017 10:20:00 AM
Lab ID: 1707291-002
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/12/2017 12:18:36 PM	R44164
Toluene	ND	1.0		µg/L	1	7/12/2017 12:18:36 PM	R44164
Ethylbenzene	ND	1.0		µg/L	1	7/12/2017 12:18:36 PM	R44164
Xylenes, Total	ND	2.0		µg/L	1	7/12/2017 12:18:36 PM	R44164
Surr: 4-Bromofluorobenzene	108	72.5-140		%Rec	1	7/12/2017 12:18:36 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: MW-1
Project: K 12 Y 3
Collection Date: 7/6/2017 11:00:00 AM
Lab ID: 1707291-003
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	7/12/2017 12:42:24 PM	R44164
Toluene	ND	1.0		µg/L	1	7/12/2017 12:42:24 PM	R44164
Ethylbenzene	ND	1.0		µg/L	1	7/12/2017 12:42:24 PM	R44164
Xylenes, Total	ND	2.0		µg/L	1	7/12/2017 12:42:24 PM	R44164
Surr: 4-Bromofluorobenzene	104	72.5-140		%Rec	1	7/12/2017 12:42:24 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: MW-13
Project: K 12 Y 3
Collection Date: 7/6/2017 11:40:00 AM
Lab ID: 1707291-004
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	55	10		µg/L	10	7/12/2017 1:06:12 PM	R44164
Toluene	290	10		µg/L	10	7/12/2017 1:06:12 PM	R44164
Ethylbenzene	46	10		µg/L	10	7/12/2017 1:06:12 PM	R44164
Xylenes, Total	470	20		µg/L	10	7/12/2017 1:06:12 PM	R44164
Surr: 4-Bromofluorobenzene	115	72.5-140		%Rec	10	7/12/2017 1:06:12 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: SVE-3
Project: K 12 Y 3
Collection Date: 7/6/2017 12:20:00 PM
Lab ID: 1707291-005
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	6.7	5.0		µg/L	5	7/12/2017 1:29:58 PM	R44164
Toluene	ND	5.0		µg/L	5	7/12/2017 1:29:58 PM	R44164
Ethylbenzene	110	5.0		µg/L	5	7/12/2017 1:29:58 PM	R44164
Xylenes, Total	170	10		µg/L	5	7/12/2017 1:29:58 PM	R44164
Surr: 4-Bromofluorobenzene	116	72.5-140		%Rec	5	7/12/2017 1:29:58 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: SVE-1R
Project: K 12 Y 3
Collection Date: 7/6/2017 1:00:00 PM
Lab ID: 1707291-006
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	63	5.0		µg/L	5	7/12/2017 1:53:43 PM	R44164
Toluene	ND	5.0		µg/L	5	7/12/2017 1:53:43 PM	R44164
Ethylbenzene	33	5.0		µg/L	5	7/12/2017 1:53:43 PM	R44164
Xylenes, Total	90	10		µg/L	5	7/12/2017 1:53:43 PM	R44164
Surr: 4-Bromofluorobenzene	111	72.5-140		%Rec	5	7/12/2017 1:53:43 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: SVE-2
Project: K 12 Y 3
Collection Date: 7/6/2017 1:40:00 PM
Lab ID: 1707291-007
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	810	50		µg/L	50	7/12/2017 3:28:44 PM	R44164
Toluene	ND	50		µg/L	50	7/12/2017 3:28:44 PM	R44164
Ethylbenzene	190	50		µg/L	50	7/12/2017 3:28:44 PM	R44164
Xylenes, Total	1900	100		µg/L	50	7/12/2017 3:28:44 PM	R44164
Surr: 4-Bromofluorobenzene	109	72.5-140		%Rec	50	7/12/2017 3:28:44 PM	R44164

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
PQL	Practical Quanitative Limit	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, Inc.
Client Sample ID: MW-2
Project: K 12 Y 3
Collection Date: 7/6/2017 2:20:00 PM
Lab ID: 1707291-008
Matrix: AQUEOUS
Received Date: 7/7/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	2100	50		µg/L	50	7/12/2017 3:52:43 PM	R44164
Toluene	ND	50		µg/L	50	7/12/2017 3:52:43 PM	R44164
Ethylbenzene	410	50		µg/L	50	7/12/2017 3:52:43 PM	R44164
Xylenes, Total	4800	100		µg/L	50	7/12/2017 3:52:43 PM	R44164
Surr: 4-Bromofluorobenzene	112	72.5-140		%Rec	50	7/12/2017 3:52:43 PM	R44164

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
PQL	Practical Quanitative Limit	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#: **1707291**

13-Jul-17

Client: Apex Titan, Inc.

Project: K 12 Y 3

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R44164**	RunNo: **44164**
Prep Date:	Analysis Date: **7/12/2017**	SeqNo: **1394453** 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								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		105	72.5	140			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R44164**	RunNo: **44164**
Prep Date:	Analysis Date: **7/12/2017**	SeqNo: **1394454** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	88.4	71.7	126			
Toluene	18	1.0	20.00	0	89.8	73.3	119			
Ethylbenzene	18	1.0	20.00	0	90.2	80	120			
Xylenes, Total	55	2.0	60.00	0	90.9	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		107	72.5	140			

Sample ID **1707291-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-11**	Batch ID: **R44164**	RunNo: **44164**
Prep Date:	Analysis Date: **7/12/2017**	SeqNo: **1394459** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1300	50	1000	394.3	91.2	62.3	126			
Toluene	1000	50	1000	112.5	91.8	48.8	134			
Ethylbenzene	1300	50	1000	385.3	93.4	44.4	142			
Xylenes, Total	6900	100	3000	4171	89.5	55.7	129			
Surr: 4-Bromofluorobenzene	1100		1000		113	72.5	140			

Sample ID **1707291-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-11**	Batch ID: **R44164**	RunNo: **44164**
Prep Date:	Analysis Date: **7/12/2017**	SeqNo: **1394460** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1300	50	1000	394.3	91.4	62.3	126	0.120	20	
Toluene	1000	50	1000	112.5	91.9	48.8	134	0.0893	20	
Ethylbenzene	1300	50	1000	385.3	92.3	44.4	142	0.803	20	
Xylenes, Total	6800	100	3000	4171	87.2	55.7	129	0.995	20	
Surr: 4-Bromofluorobenzene	1100		1000		113	72.5	140	0	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
PQL	Practical Quanitative Limit	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 Titan | Work Order Number: 1707291 | RcptNo: 1

Received By: Erin Melendrez 7/7/2017 7:50:00 AM

Completed By: Ashley Gallegos 7/7/2017 1:50:14 PM

Reviewed By: ENM 7/10/17

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	2.8	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location: Aztec NM

Project Manager: K Summers

Laboratory: Hall Env

Address: ABQ NM

Contact: A Freeman

Phone:

PO/SO #:

Sampler's Name: Chad D'Hondt

Sampler's Signature:

Proj. No.

Project Name: K 17 Y #3

No/Type of Containers

ANALYSIS REQUESTED

8015M / 8021

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.8

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	Lab Sample ID (Lab Use Only)
W	7/6/17	940			MW-11			3					1707291-001
		1020			MW-12								-002
		1100			MW-1								-003
		1140			MW-13								-004
		1220			SVE-3								-005
		1300			SVE-1R								-006
		1340			SVE-2								-007
		1420			MW-2								-008

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

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	7/6/17	1545		7/6/17	1545
	7/6/17	1620		7/7/17	0750

NOTES: B-11 to Add Cap 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 / Clr 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

December 19, 2017

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

RE: K 12 Y 3 OrderNo.: 1712836

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/14/2017 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 qualifiers 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 **1712836**
Date Reported: **12/19/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: APEX TITAN
Client Sample ID: MW-1
Project: K 12 Y 3
Collection Date: 12/12/2017 10:00:00 AM
Lab ID: 1712836-001
Matrix: AQUEOUS
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	12/15/2017 12:40:23 PM	R47839
Toluene	ND	1.0		µg/L	1	12/15/2017 12:40:23 PM	R47839
Ethylbenzene	ND	1.0		µg/L	1	12/15/2017 12:40:23 PM	R47839
Xylenes, Total	ND	1.5		µg/L	1	12/15/2017 12:40:23 PM	R47839
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	12/15/2017 12:40:23 PM	R47839
Surr: Toluene-d8	100	70-130		%Rec	1	12/15/2017 12:40:23 PM	R47839

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
PQL	Practical Quanitative Limit	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: K 12 Y 3
Lab ID: 1712836-002 **Matrix:** AQUEOUS

Client Sample ID: MW-12
Collection Date: 12/12/2017 11:10:00 AM
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	12/15/2017 1:03:24 PM	R47839
Toluene	ND	1.0		µg/L	1	12/15/2017 1:03:24 PM	R47839
Ethylbenzene	ND	1.0		µg/L	1	12/15/2017 1:03:24 PM	R47839
Xylenes, Total	ND	1.5		µg/L	1	12/15/2017 1:03:24 PM	R47839
Surr: 4-Bromofluorobenzene	95.3	70-130		%Rec	1	12/15/2017 1:03:24 PM	R47839
Surr: Toluene-d8	101	70-130		%Rec	1	12/15/2017 1:03:24 PM	R47839

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
PQL	Practical Quanitative Limit	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: K 12 Y 3
Lab ID: 1712836-003 **Matrix:** AQUEOUS

Client Sample ID: MW-11
Collection Date: 12/12/2017 12:10:00 PM
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	520	50		µg/L	50	12/15/2017 1:26:23 PM	R47839
Toluene	170	50		µg/L	50	12/15/2017 1:26:23 PM	R47839
Ethylbenzene	310	50		µg/L	50	12/15/2017 1:26:23 PM	R47839
Xylenes, Total	3100	75		µg/L	50	12/15/2017 1:26:23 PM	R47839
Surr: 4-Bromofluorobenzene	94.1	70-130		%Rec	50	12/15/2017 1:26:23 PM	R47839
Surr: Toluene-d8	97.4	70-130		%Rec	50	12/15/2017 1:26:23 PM	R47839

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
PQL	Practical Quanitative Limit	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: K 12 Y 3
Lab ID: 1712836-004 **Matrix:** AQUEOUS

Client Sample ID: SVE-3
Collection Date: 12/12/2017 1:05:00 PM
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	3.8	2.5	D	µg/L	5	12/15/2017 1:49:23 PM	R47839
Toluene	ND	2.5	D	µg/L	5	12/15/2017 1:49:23 PM	R47839
Ethylbenzene	42	2.5	D	µg/L	5	12/15/2017 1:49:23 PM	R47839
Xylenes, Total	11	3.8	D	µg/L	5	12/15/2017 1:49:23 PM	R47839
Surr: 4-Bromofluorobenzene	107	70-130	D	%Rec	5	12/15/2017 1:49:23 PM	R47839
Surr: Toluene-d8	100	70-130	D	%Rec	5	12/15/2017 1:49:23 PM	R47839

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
PQL	Practical Quanitative Limit	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: K 12 Y 3
Lab ID: 1712836-005 **Matrix:** AQUEOUS

Client Sample ID: SVE-1R
Collection Date: 12/12/2017 2:00:00 PM
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	72	5.0		µg/L	5	12/15/2017 2:12:26 PM	R47839
Toluene	ND	5.0		µg/L	5	12/15/2017 2:12:26 PM	R47839
Ethylbenzene	26	5.0		µg/L	5	12/15/2017 2:12:26 PM	R47839
Xylenes, Total	72	7.5		µg/L	5	12/15/2017 2:12:26 PM	R47839
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	5	12/15/2017 2:12:26 PM	R47839
Surr: Toluene-d8	98.5	70-130		%Rec	5	12/15/2017 2:12:26 PM	R47839

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
PQL	Practical Quanitative Limit	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-13
Project: K 12 Y 3
Collection Date: 12/12/2017 2:50:00 PM
Lab ID: 1712836-006
Matrix: AQUEOUS
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	58	5.0		µg/L	5	12/15/2017 4:30:44 PM	R47839
Toluene	110	5.0		µg/L	5	12/15/2017 4:30:44 PM	R47839
Ethylbenzene	19	5.0		µg/L	5	12/15/2017 4:30:44 PM	R47839
Xylenes, Total	150	7.5		µg/L	5	12/15/2017 4:30:44 PM	R47839
Surr: 4-Bromofluorobenzene	95.8	70-130		%Rec	5	12/15/2017 4:30:44 PM	R47839
Surr: Toluene-d8	98.7	70-130		%Rec	5	12/15/2017 4:30:44 PM	R47839

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
PQL	Practical Quanitative Limit	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: SVE-2
Project: K 12 Y 3
Collection Date: 12/13/2017 9:35:00 AM
Lab ID: 1712836-007
Matrix: AQUEOUS
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	1100	50		µg/L	50	12/15/2017 2:58:31 PM	R47839
Toluene	ND	50		µg/L	50	12/15/2017 2:58:31 PM	R47839
Ethylbenzene	200	50		µg/L	50	12/15/2017 2:58:31 PM	R47839
Xylenes, Total	1800	75		µg/L	50	12/15/2017 2:58:31 PM	R47839
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	50	12/15/2017 2:58:31 PM	R47839
Surr: Toluene-d8	99.8	70-130		%Rec	50	12/15/2017 2:58:31 PM	R47839

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
PQL	Practical Quanitative Limit	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: K 12 Y 3
Lab ID: 1712836-008 **Matrix:** AQUEOUS

Client Sample ID: MW-2
Collection Date: 12/13/2017 10:30:00 AM
Received Date: 12/14/2017 6:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	1300	50		µg/L	50	12/15/2017 3:21:36 PM	R47839
Toluene	ND	50		µg/L	50	12/15/2017 3:21:36 PM	R47839
Ethylbenzene	160	50		µg/L	50	12/15/2017 3:21:36 PM	R47839
Xylenes, Total	1800	75		µg/L	50	12/15/2017 3:21:36 PM	R47839
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	50	12/15/2017 3:21:36 PM	R47839
Surr: Toluene-d8	99.9	70-130		%Rec	50	12/15/2017 3:21:36 PM	R47839

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
PQL	Practical Quanitative Limit	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#: **1712836**

19-Dec-17

Client: APEX TITAN

Project: K 12 Y 3

Sample ID **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R47839**	RunNo: **47839**
Prep Date:	Analysis Date: **12/15/2017**	SeqNo: **1530360** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Ethylbenzene	21	1.0	20.00	0	105	70	130			
Xylenes, Total	62	1.5	60.00	0	103	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R47839**	RunNo: **47839**
Prep Date:	Analysis Date: **12/15/2017**	SeqNo: **1530362** 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								
Xylenes, Total	ND	1.5								
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID **1712836-001AMS**	SampType: **MS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-1**	Batch ID: **R47839**	RunNo: **47839**
Prep Date:	Analysis Date: **12/15/2017**	SeqNo: **1530370** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0.2992	105	70	130			
Toluene	20	1.0	20.00	0.1570	102	70	130			
Ethylbenzene	20	1.0	20.00	0	99.7	70	130			
Xylenes, Total	61	1.5	60.00	0.4242	100	71	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		87.5	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID **1712836-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-1**	Batch ID: **R47839**	RunNo: **47839**
Prep Date:	Analysis Date: **12/15/2017**	SeqNo: **1530371** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0.2992	98.8	70	130	6.38	20	
Toluene	19	1.0	20.00	0.1570	92.6	70	130	9.13	20	
Ethylbenzene	19	1.0	20.00	0	92.8	70	130	7.15	0	
Xylenes, Total	57	1.5	60.00	0.4242	94.0	71	130	6.62	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
PQL	Practical Quanitative Limit	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#: **1712836**

19-Dec-17

Client: APEX TITAN

Project: K 12 Y 3

Sample ID **1712836-001AMSD** SampType: **MSD** TestCode: **EPA Method 8260: Volatiles Short List**

Client ID: **MW-1** Batch ID: **R47839** RunNo: **47839**

Prep Date: Analysis Date: **12/15/2017** SeqNo: **1530371** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	8.7		10.00		86.5	70	130	0	0	
Surr: Toluene-d8	9.8		10.00		98.2	70	130	0	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
PQL	Practical Quanitative Limit	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: 1712836 | RcptNo: 1

Received By: **Anne Thorne** 12/14/2017 6:55:00 AM

Completed By: **Michelle Garcia** 12/14/2017 7:35:29 AM

Reviewed By: SRC 12/14/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑ (Yes)	No ☐	Not Present ☑ (No)
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	1.0	Good	Yes			

CHAIN OF CUSTODY RECORD

APEX

Office Location
606 S. Rio Grande, Suite A
Aztec, NM 87410

Project Manager K. Summers

Laboratory: Hall Environmental Analysis Laboratory
Address: 4901 Hawkins NE
Albuquerque, NM 87109
Contact: A. Freeman
Phone: 505-345-3975
PO/SO #: 725040112191

Sampler's Name: Ranee Deechilly
Sampler's Signature: Ranee Deechilly

Proj. No.: 725040112191
Project Name: K-12 Y#3

ANALYSIS REQUESTED: BTEX 8021

Lab use only
Due Date:

Temp. of coolers when received (C°): 1.0

1	2	3	4	5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No/Type of Containers: VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	BTEX 8021	Lab Sample ID (Lab Use Only)
W	12/12/17	1000			MW-1			3					X	001
W	12/12/17	1110			MW-12			3					X	002
W	12/12/17	1210			MW-11			3					X	003
W	12/12/17	1305			SVE-3			3					X	004
W	12/12/17	1400			SVE-1R			3					X	005
W	12/12/17	1450			MW-13			3					X	006
W	12/13/17	935			SVE-2			3					X	007
W	12/13/17	1030			MW-2			3					X	008
					N/S									

1712836
Lab Sample ID (Lab Use Only)

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

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ranee Deechilly	12/13/17	1430		12/13/17	1430
	12/13/17	2011		12/14/17	0655

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 _____