ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS GP, LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

December 18, 2020

Submitted via Email to:
Cory.Smith@State.nm.us

Mr. Cory Smith
New Mexico Energy, Minerals & Natural Resources
Department – Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

RE: ***2019 Groundwater Monitoring Report*** (Ensolum, August 10, 2020)
Enterprise Field Services, LLC
Lateral K-51 Pipeline Release (4/13/2010)
Rio Arriba Co., NM [S34 and 35, T26N R6W (36.4465° N, 107.4461° W)]
OCD RP: 3R-446; Stage 1 AP-130

Dear Mr. Smith:

Enterprise Products Operating LLC (Enterprise), on behalf of Enterprise Field Services LLC, is pleased to submit to the New Mexico (NM) Energy, Minerals & Natural Resources Department (EMNRD) – Oil Conservation Division (OCD) an electronic copy of the above-referenced document prepared by Ensolum, LLC (Ensolum) and dated August 10, 2020. The subject document is associated with the April 13, 2010 discovery of a release of natural gas condensate from the Enterprise Lateral K-51 pipeline located near Tapacito Creek at the above-referenced location (the "Site"). The attached document summarizes ongoing semi-annual (SA) groundwater monitoring and sampling (GWM&S) activities that occurred at the Site between January 1, 2019 and February 4, 2020 (the "reporting period"). The GWM&S activities were performed to further evaluate dissolved-phased hydrocarbon (DPH), or constituents of concern (COC), concentrations in groundwater.

Data presented in the attached document indicate that COC concentrations in excess of the applicable Water Quality Control Commission (WQCC) Groundwater Quality Standards (GQSs) remain at the Site in only one monitor well, MW-19 (benzene is the only exceedance). Additionally, phase-separated hydrocarbon (PSH) has never been observed at the site, with the exception of two events in 2012 (in MW-19) which were not visually confirmed. Overall, COC concentrations are generally declining across the Site. However, the plume is not currently delineated to the southwest of MW-19 due to silting of MW-18 (inaccessible since 2012, but previous COC concentrations were all below laboratory detection limits). Additionally, in comparing current COC data to historical data, COCs in the original release area (i.e. MW-1 through MW-4, and outer/perimeter wells MW-11 through MW-14) have apparently migrated to the north (i.e. to down-gradient MW-19), or are from another source. COCs in the original release area have been below laboratory detection and/or the applicable WQCC GQSs since November 2016, or earlier (for a minimum of 2 consecutive years).

Based on the information presented in the attached report, Enterprise plans to: 1) continue conducting semi-annual GWM&S events and (as per NM OCD approval email dated June 8, 2020) limit sampling frequency of monitor wells MW-3 and MW-11 through MW-13 to one annual event, 2) conduct additional site-specific aquifer characterization, 3) install a shallow recovery well up-gradient of monitor well MW-19 (to facilitate enhanced total fluids recovery in the immediate vicinity of the highest observed groundwater COC concentrations), 4) repair or replace monitoring well MW-18 as described in the *Stage 1 Abatement Plan* (Ensolum, revised May 22, 2019), and 5) prepare a *Stage 2 Abatement Plan* after concurrence that the *Stage 1 Abatement Plan* is deemed administratively complete.

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Enterprise appreciates the Oil Conservation Division's (OCD's) continued assistance and guidance in bringing closure to this Site. Should you have any questions, comments or concerns, or require additional information, please feel free to contact me any time at 713-381-8780, or at gemiller@eprod.com.

Sincerely,

Gregory E. Miller, P.G.
Supervisor, Environmental

Rodney M. Sartor, REM
Sr. Director, Environmental

cc: BLM, Farmington, NM – Ms. Katie White Bull <6251 College Blvd., Suite A, Farmington, NM 87402>
Landowner – Mr. Russell Luna < PO Box 753, Bloomfield, NM 87413-0753>
ec: NMOCD, Aztec, NM - Mr. Cory Smith <Cory.Smith@State.nm.us>
NMOCD, Santa Fe, NM – Mr. Jim Griswold <Jim.Griswold@state.nm.us>
NMOCD, Santa Fe, NM – Mr. Brad Billings <Bradford.Billings@state.nm.us>
Ensolum, Houston, TX – Mr. Marc E. Gentry <MGentry@ensolum.com>

2019 GROUNDWATER MONITORING REPORT

Property:

Lateral K-51 Pipeline Release (2010)
S34 and 35, T26N R6W
Rio Arriba County, New Mexico

New Mexico EMNRD OCD RP No. 3RP-446
Abatement Plan No. 130

August 10, 2020
Ensolum Project No. 05A1226010

Prepared for:

Enterprise Field Services, LLC
P.O. Box 4324
Houston, Texas 77210-4324
Attn: Mr. Gregory E. Miller, P.G.

Prepared by:

Ranee Deechilly
Environmental Scientist

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Staff Geologist

Kyle Summers
Senior Project Manager

2019 GROUNDWATER MONITORING REPORT
EXECUTIVE SUMMARY

This report documents the 2019 groundwater monitoring activities at the Lateral K-51 Pipeline Release (2010) site, referred to hereinafter as the "Site". The final event of 2019 was ultimately performed in January/February of 2020 due to Site access and weather conditions.

The Site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in Sections 34 and 35, Township 26 North, Range 6 West, in Rio Arriba County, New Mexico.

Following the release of approximately ten (10) barrels of natural gas condensate on April 13, 2010, Enterprise initiated excavation activities to identify and remediate potential hydrocarbon impact. Souder, Miller & Associates (SMA) collected confirmation soil samples and one (1) groundwater sample from the resulting excavation. The excavation was subsequently backfilled with unaffected soils. Samples collected from the excavation exhibited concentrations of constituents of concern (COCs) above the applicable New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) closure criteria for soils and above the New Mexico Water Quality Control Commission (WQCC) Groundwater Quality Standards (GQSs) for groundwater.

During June 2010, LT Environmental, Inc. (LTE) advanced eight (8) soil borings (BH-1 through BH-8) in the vicinity of the release and four (4) of the soil borings were completed as groundwater monitoring wells (MW-1 through MW-4). Samples collected from the soil borings and monitoring wells exhibited concentrations of COCs above the applicable New Mexico EMNRD OCD closure criteria for soils, and above the New Mexico WQCC GQSs for groundwater.

During April 2011 and March 2012, Southwest Geoscience (SWG), installed nine (9) additional groundwater monitoring wells (MW-11 through MW-14, and MW-16 through MW-20) and 15 injection points to complete groundwater delineation at the Site and prepare for the proposed in-situ chemical oxidation (ISCO) of impacted soil and groundwater utilizing a hydrogen peroxide solution. During May 2011, ISCO was performed in the pipeline release source area.

Quarterly and semi-annual groundwater monitoring occurred from 2012 through 2014, and 2015 through 2018, respectively.

During March of 2019, Ensolum submitted a Stage 1 Abatement Plan for this Site to the New Mexico EMNRD OCD. The New Mexico EMNRD OCD has not responded to or approved the plan, and Enterprise has resumed semi-annual groundwater monitoring of the Site.

Groundwater sampling events were conducted by Ensolum, LLC (Ensolum) during September 2019 and January/February 2020. These groundwater monitoring events were performed to further evaluate the concentrations of COCs in groundwater over time and to monitor the generally declining COC concentrations at the Site.

Findings and recommendations based on these activities are as follows:

- The groundwater flow direction at the Site is generally towards the west-northwest, with an approximate average gradient of 0.008 feet per foot (ft/ft) across the Site.

- The analytical results for monitoring well MW-19 during the September 2019 and January/February 2020 sampling events indicate benzene concentrations of 340 micrograms per liter (µg/L) and 100 µg/L, respectively, which exceed the applicable WQCC GQS. The analytical results for all other monitoring wells during these events did not indicate COC concentrations above the WQCC GQSs.

- With the exception of monitoring well MW-19, which has exhibited relatively consistent benzene exceedances, results from the sampling events at the Site generally demonstrate declining COC concentrations in groundwater.

Ensolum offers the following recommendations:

- Report the groundwater monitoring results to the New Mexico EMNRD OCD.

- Continue semi-annual groundwater monitoring at the Site to monitor natural attenuation of COCs in groundwater, limiting the sampling frequency of monitoring wells MW-3, MW-11, MW-12, and MW-13 to annually, as approved by the New Mexico EMNRD OCD in an email dated June 6, 2020.

- Once approved by the New Mexico EMNRD OCD, implement additional Site-specific aquifer testing, install a shallow recovery well upgradient of monitoring well MW-19, and repair or replace monitoring well MW-18, as described in the Stage 1 Abatement Plan.

- After the Stage 1 Abatement Plan has been fully implemented, prepare a Stage 2 Abatement Plan.

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2019 GROUNDWATER MONITORING REPORT

New Mexico EMNRD OCD RP No. 3RP-446
Abatement Plan No. 130

Ensolum Project No. 05A1226010

1.0 INTRODUCTION

This report documents the 2019 groundwater monitoring activities at the Lateral K-51 Pipeline Release (2010) site, referred to hereinafter as the "Site". The final event of 2019 was ultimately performed in January/February of 2020 due to Site access and weather conditions.

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Lateral K-51 Pipeline Release (2010)
Location:	36.4465° North, 107.4461° West Sections 34 and 35, Township 26 North, Range 6 West Rio Arriba County, New Mexico
Property:	United States Bureau of Land Management (BLM) and Private Land
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On April 13, 2010, an estimated ten (10) barrels of natural gas condensate was released from the Enterprise natural gas gathering pipeline at the Site. Following the completion of excavation activities and off-site disposal of hydrocarbon affected soils, confirmation soil samples were collected from the excavation by Souder, Miller and Associates (SMA). In addition, one (1) groundwater sample was collected from the excavation. The excavation was backfilled with unaffected soils. Samples collected from the excavation exhibited concentrations of constituents of concern (COCs) above the applicable EMNRD OCD closure criteria for soils, and above the New Mexico Water Quality Control Commission (WQCC) Groundwater Quality Standards (GQSs) for groundwater.

During June 2010, eight (8) soil borings (BH-1 through BH-8) were advanced on-Site by LT Environmental (LTE). Subsequent to advancement, four (4) of the soil borings were completed as groundwater monitoring wells (MW-1 through MW-4) (*Subsurface Investigation Report, dated August 9, 2010 – LTE*). Analytical results from the soil and groundwater sampling activities indicated COC concentrations were present in soil (BH-1, immediately adjacent to the release and near the groundwater interface) above the applicable New Mexico EMNRD OCD closure criteria, and in groundwater (monitoring wells MW-1 through MW-4) above the New Mexico WQCC GQSs.

During April 2011, nine (9) soil borings/monitoring wells (SB-9, SB-10, MW-11 through MW-14, SB-15, MW-16, and MW-17) were advanced by Southwest Geoscience (SWG) in and around the K-51 release area to further evaluate the extent of dissolved phase COCs in groundwater. Additionally, 15 injection points were installed to facilitate the proposed in-situ chemical oxidation (ISCO) of the COCs utilizing a hydrogen peroxide solution. ISCO activities were performed during May 2011 (*Supplemental Site Investigation and Corrective Action Report, dated October 5, 2011 - SWG*).

Based on the distribution of COCs in groundwater, it appears that a former drip valve, tank, or pit may have been an additional historic source of petroleum hydrocarbon impact to groundwater (New Mexico EMNRD OCD reference 3RP-206, *El Paso Natural Gas, Final Pit Closure*) in the vicinity of monitoring well MW-14.

During March 2012, three (3) additional soil borings/monitoring wells (MW-18, MW-19 and MW-20) were advanced near and downgradient of the historic release area to further evaluate the extent of COCs in groundwater (*Supplemental Site Investigation & Corrective Action Work Plan, dated April 23, 2012 – SWG*). Soil boring/monitoring well MW-18 was advanced to the west of the presumed location of the historic release, and soil borings/monitoring wells MW-19 and MW-20 were advanced to the north and northwest of the presumed location of the historic release.

Quarterly and semi-annual groundwater monitoring occurred from 2012 through 2014, and 2015 through 2018, respectively.

During February 2019, Enterprise reassigned management of the project to Ensolum, LLC (Ensolum).

During March of 2019, Ensolum submitted a Stage 1 Abatement Plan for this Site to the New Mexico EMNRD OCD. The New Mexico EMNRD OCD has not responded to or approved the plan, and Enterprise has resumed Semi-annual groundwater monitoring of the Site.

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to oil and gas releases, the New Mexico EMNRD OCD references New Mexico Administrative Code (NMAC) 19.15.29 *Releases,* which establishes investigation and abatement action requirements for sites that are subject to reporting and/or corrective action. Additionally, the New Mexico EMNRD OCD utilizes the New Mexico WQCC GQS (NMAC 20.6.2 *Groundwater and Surface Water Protection*) to evaluate groundwater conditions.[1]

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

1.2 Project Objective

The objectives of the groundwater monitoring events were to further evaluate the concentrations of COCs in groundwater over time and monitor the generally declining COC concentrations at the Site.

2.0 GROUNDWATER MONITORING

2.1 Groundwater Sampling Program

Groundwater sampling events were conducted during September 2019 and January/February 2020 by Ensolum. Ensolum's groundwater sampling program consisted of the collection of one (1) groundwater sample from each of the 12 viable monitor wells at the Site. Monitoring well MW-18 is silted in, blocked by roots, or collapsed, and was not sampled during these sampling events.

[1] NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD District 3 Office has indicated that the updated GQSs will not be enforced until sometime in 2020. Therefore, this document reflects the previous GQSs, which were being enforced when the sampling events were performed.

Ensolum's groundwater sampling program consisted of the following:

- Prior to sample collection, Ensolum gauged the depth to fluids in each monitoring well using an interface probe capable of detecting non-aqueous phase liquids (NAPL).
- Each monitoring well was sampled utilizing micro-purge low-flow sampling techniques. Following the completion of the micro-purge process, one (1) groundwater sample was collected from each viable monitoring well.
- Low-flow or low-stress sampling refers to sampling methods that are intended to minimize the stress that is imparted to the formation pore water in the vicinity of the well screen. Water level drawdown provides the best indication of the stress that is imparted by a given flow rate for a given hydrological situation. Pumping rates of 0.1 to 0.5 liters per minute (L/min) are typically maintained during the low-flow/low-stress sampling activities, using dedicated or decontaminated sampling equipment.
- The groundwater samples are collected from each monitoring well once produced groundwater is consistent in color, clarity, pH, temperature, and conductivity. Measurements are typically observed every three to five minutes while purging. Purging is considered complete once key parameters (especially pH and conductivity) have stabilized for at least three (3) successive readings.
- Groundwater samples were collected in laboratory-supplied containers (pre-preserved with mercuric chloride ($HgCl_2$)), labeled and sealed using the laboratory supplied labels and custody seals, and stored on ice in a cooler. The groundwater 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 Methods

The groundwater samples collected from the monitoring wells during these two (2) sampling events were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing Environmental Protection Agency (EPA) method SW-846 #8021.

A summary of the per-event analytes, sample matrix, sample frequency and EPA-approved methods are presented on the following table.

Analytes	Sample Matrix	No. of Samples (per event)	EPA Method
BTEX	Groundwater	12	SW-846 8021

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

2.3 Groundwater Flow Direction

Each monitoring well has been geospatially surveyed to determine the top-of-casing (TOC) elevation. Prior to sample collection, Ensolum gauged the depth to fluids in each monitoring well. The groundwater flow direction (gradient) at the Site is generally toward the west-northwest. The observed gradient during the September 2019 and January/February 2020 monitoring events averaged approximately 0.008 feet per foot (ft/ft) across the Site.

Groundwater elevation data collected during the September 2019 and January/February 2020 gauging events are presented (as well as historical gauging data) in **Table 2** (**Appendix B**). Groundwater gradient maps for the September 2019 and January/February 2020 gauging events are included as **Figure 4A** and **4B** (**Appendix A**).

2.4 Data Evaluation

Ensolum compared the BTEX laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the groundwater samples collected from monitoring wells during the September 2019 and January/February 2020 groundwater sampling events to the New Mexico WQCC GQSs.[1] The results of the analyses are summarized in **Table 1** of **Appendix B**. Groundwater Quality Standard Exceedance Zone maps are provided as **Figures 5A** and **5B** of **Appendix A**.

September 2019

The September 2019 analytical result for monitoring well MW-19 indicates a benzene concentration of 340 micrograms per liter (µg/L), which exceeds the WQCC GQS of 10 µg/L.[1] The analytical result for monitoring well MW-1 indicates a benzene concentration of 1.8 µg/L, which is below the WQCC GQS of 10 µg/L. The analytical results for the remaining monitoring wells do not indicate benzene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 10 µg/L.[1]

The September 2019 analytical results for the monitoring wells do not indicate toluene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 750 µg/L.[1]

The September 2019 analytical result for monitoring well MW-19 indicates an ethylbenzene concentration of 88 µg/L, which is below the WQCC GQS of 750 µg/L.[1] The analytical results for the remaining monitoring wells do not indicate ethylbenzene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 750 µg/L.[1]

The September 2019 analytical result for monitoring well MW-19 indicates a total xylenes concentration of 380 µg/L, which is below the WQCC GQS of 620 µg/L.[1] The analytical results for the remaining monitoring wells do not indicate total xylenes concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 620 µg/L.[1]

No data qualifier flags are associated with the September 2019 analytical results.

January/February 2020

The January/February 2020 analytical result for monitoring well MW-19 indicates a benzene concentration of 100 µg/L, which exceeds the WQCC GQS of 10 µg/L.[1] The analytical results for the remaining monitoring wells do not indicate benzene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 10 µg/L.[1]

The January/February 2020 analytical results for the monitoring wells do not indicate toluene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 750 µg/L.[1]

The January/February 2020 analytical result for monitoring well MW-19 indicates an ethylbenzene concentration of 51 µg/L, which is below the WQCC GQS of 750 µg/L.[1] The analytical results for the remaining monitoring wells do not indicate ethylbenzene concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 750 µg/L.[1]

[1] NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD District 3 Office has indicated that the updated GQSs will not be enforced until sometime in 2020. Therefore, this document reflects the previous GQSs, which were being enforced when the sampling events were performed.

The January/February 2020 analytical result for monitoring well MW-19 indicates a total xylenes concentration of 28 µg/L, which is below the WQCC GQS of 620 µg/L.[1] The analytical results for the remaining monitoring wells do not indicate total xylenes concentrations above the laboratory PQLs/RLs, which are below the WQCC GQS of 620 µg/L.[3]

No data qualifier flags are associated with the January/February 2020 analytical results.

3.0 FINDINGS

Based on the evaluation of the analytical results from these two (2) groundwater sampling events, Ensolum presents the following findings:

- The groundwater flow direction at the Site is generally towards the west-northwest, with an approximate gradient of 0.008 ft/ft across the Site.
- The analytical results for monitoring well MW-19 during the September 2019 and January/February 2020 sampling events indicate benzene concentrations of 340 µg/L and 100 µg/L, respectively, which exceed the WQCC GQS of 10 µg/L.[1] The analytical results for the remaining monitoring wells during these events do not indicate COC concentrations above the WQCC GQSs.[1]
- Apart from monitoring well MW-19, results from the sampling events at the Site generally demonstrate declining COC concentrations in groundwater.

4.0 RECOMMENDATIONS

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

- Report the groundwater monitoring results to the New Mexico EMNRD OCD.
- Continue semi-annual groundwater monitoring at the Site to monitor natural attenuation of COCs in groundwater, limiting the sampling frequency of monitoring wells MW-3, MW-11, MW-12, and MW-13 to annually, as approved by the New Mexico EMNRD OCD in an email dated June 6, 2020.
- Once approved by the New Mexico EMNRD OCD, implement additional Site-specific aquifer testing, install a shallow recovery well upgradient of monitoring well MW-19, and repair or replace monitoring well MW-18, as described in the Stage 1 Abatement Plan.
- After the Stage 1 Abatement Plan has been fully implemented, prepare a Stage 2 Abatement Plan.

5.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

5.1 Standard of Care

Ensolum'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. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the

[1] NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD District 3 Office has indicated that the updated GQSs will not be enforced until sometime in 2020. Therefore, this document reflects the previous GQSs, which were being enforced when the sampling events were performed.

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, as detailed in our proposal.

5.2 Limitations

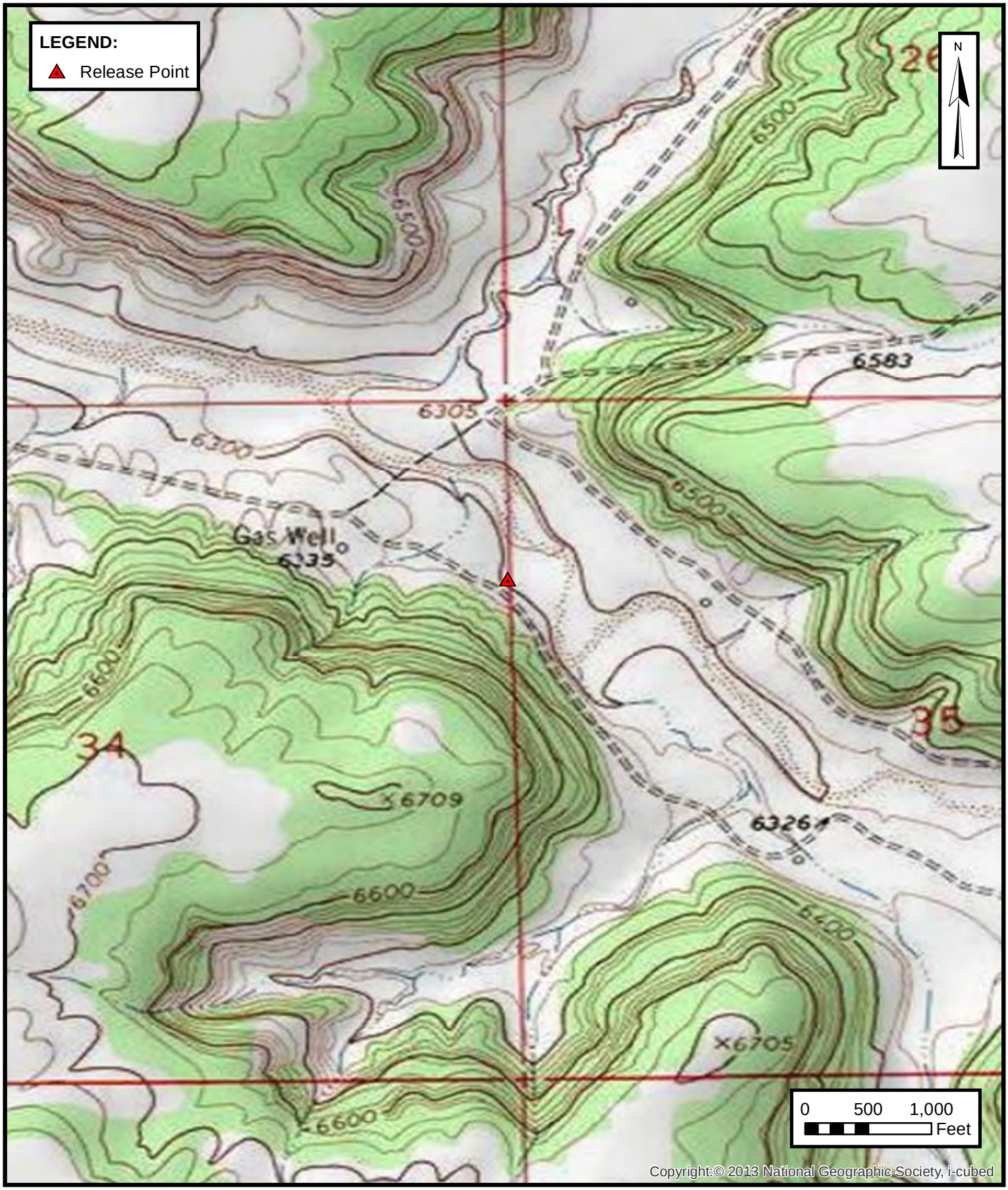
Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence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

5.3 Reliance

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 express written authorization of Enterprise and Ensolum. 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 report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.

APPENDIX A

Figures



ENSOLUM

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TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

FIGURE
1

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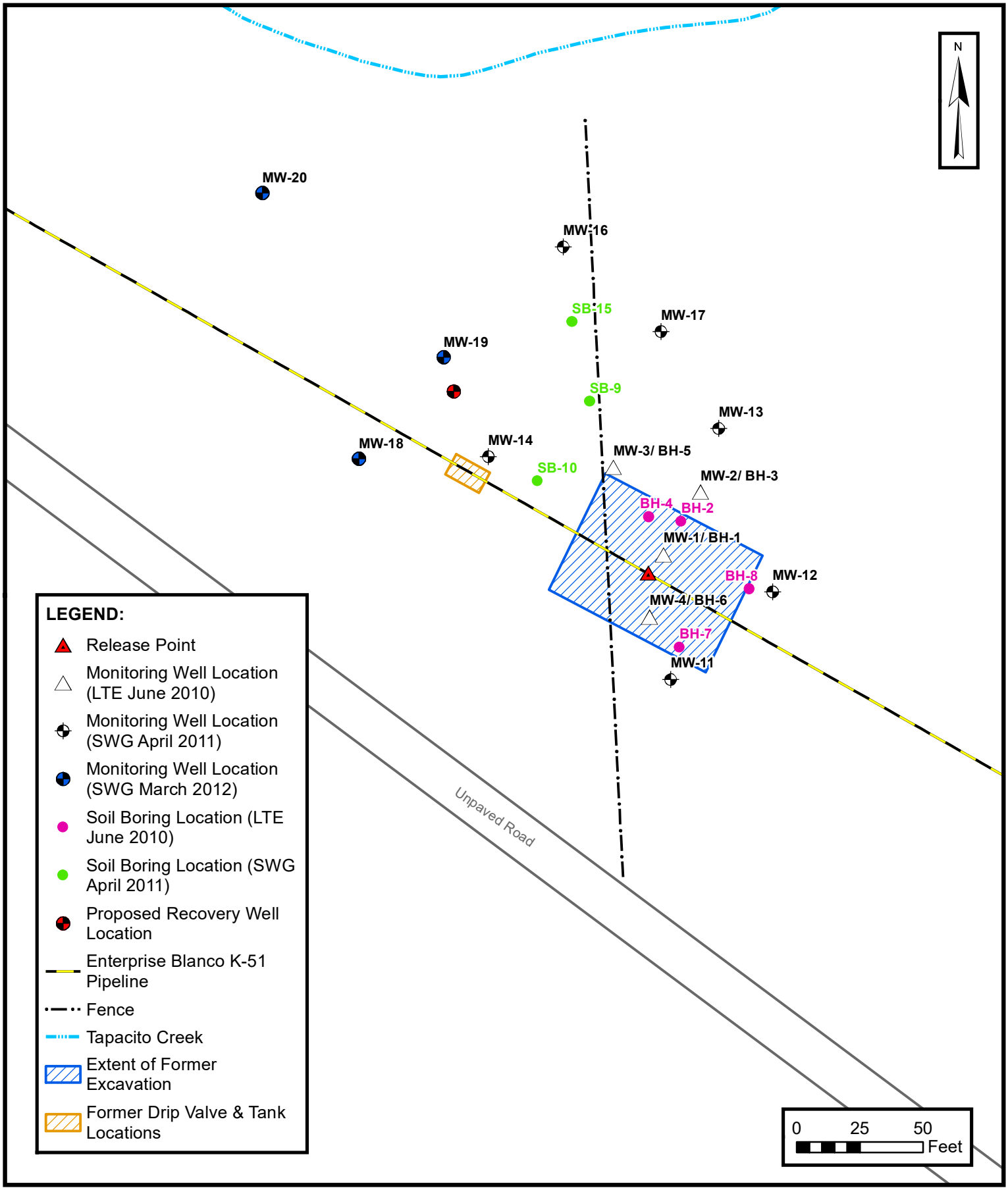
SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W

Ensolum Project No.: 05A1226010

FIGURE
2



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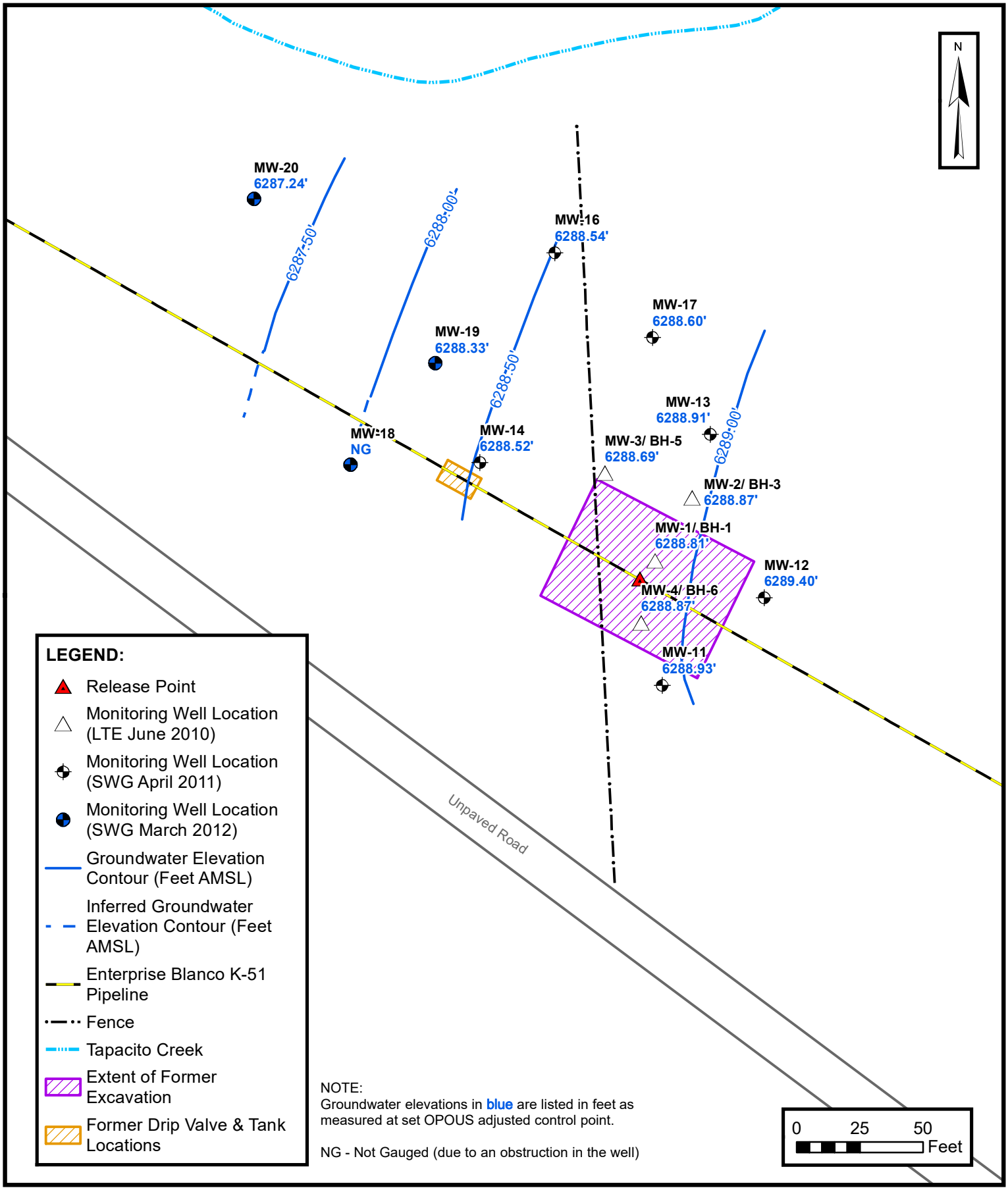
SITE MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

FIGURE
3



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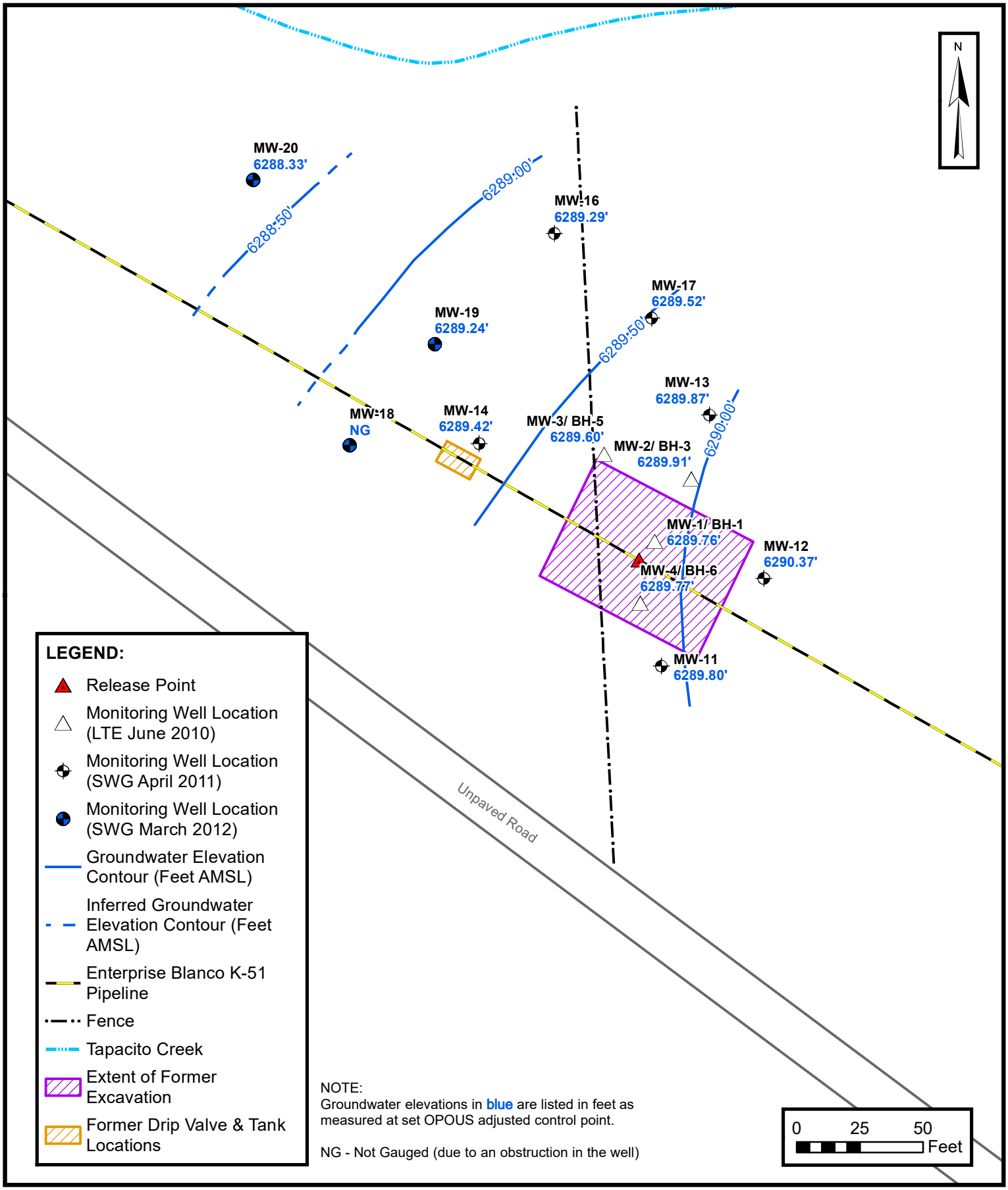
GROUNDWATER GRADIENT MAP (September 2019)

ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

FIGURE 4A



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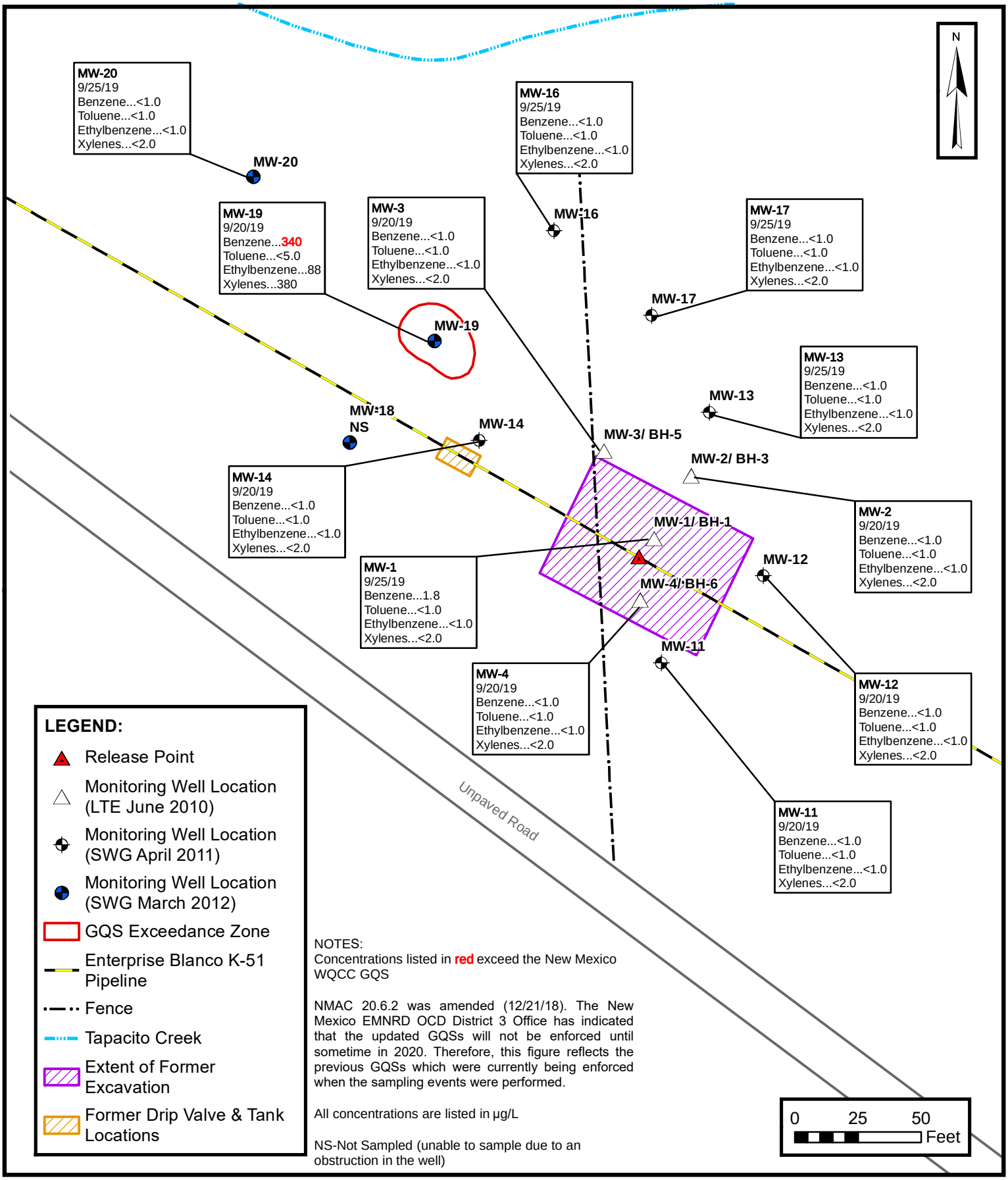
GROUNDWATER GRADIENT MAP (January/February 2020)

ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

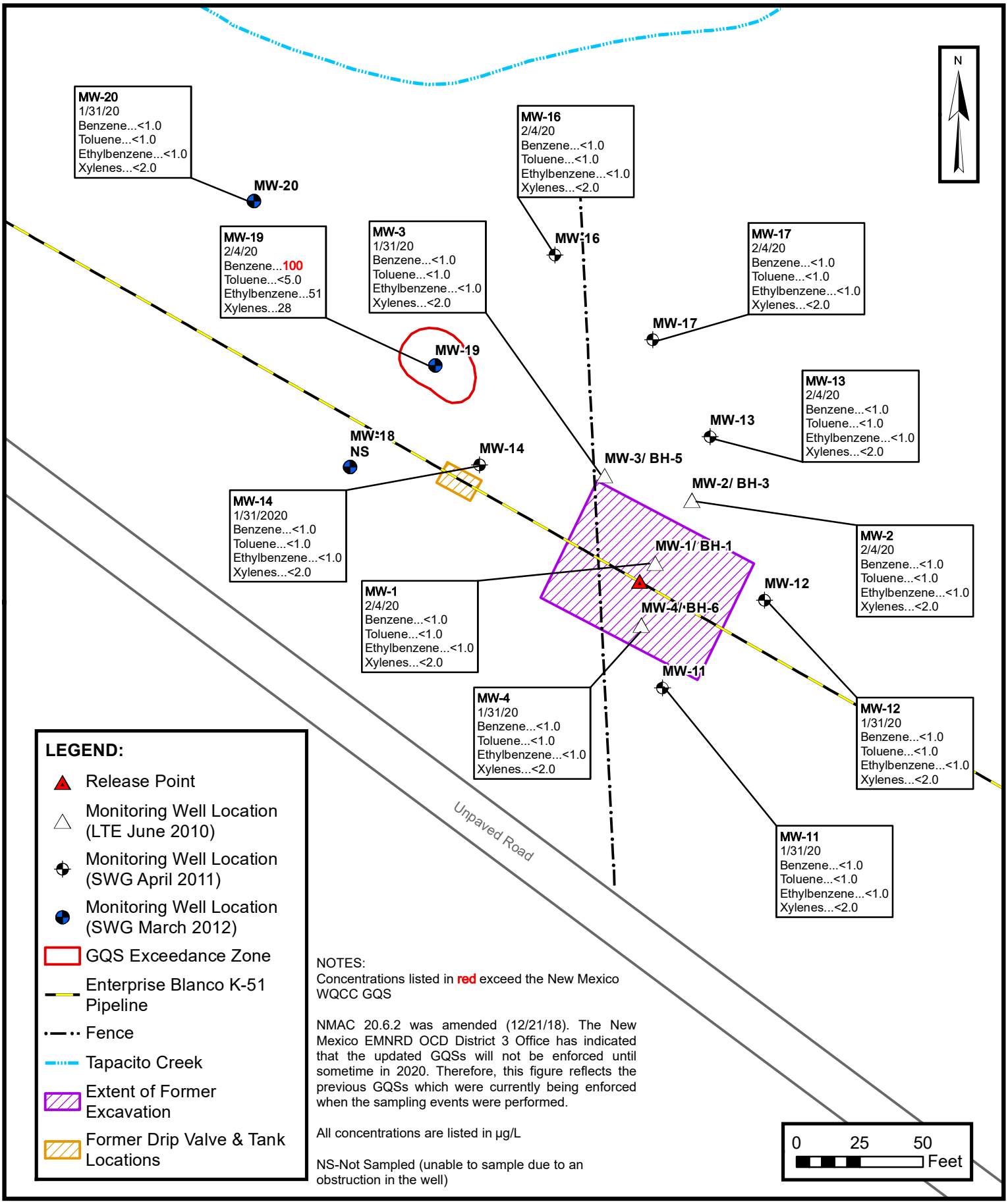
FIGURE 4B



ENSOLUM
Environmental & Hydrogeologic Consultants

GROUNDWATER QUALITY STANDARD EXCEEDANCE ZONE MAP
(September 2019)
ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

FIGURE
5A



ENSOLUM
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GROUNDWATER GQS EXCEEDANCE MAP
(January/February 2020)
ENTERPRISE FIELD SERVICES, LLC
LATERAL K-51 PIPELINE RELEASE
SW ¼ S34 and 35 T26N R6W, Rio Arriba County, New Mexico
36.4465° N, 107.4461° W
Ensolum Project No.: 05A1226010

FIGURE
5B

APPENDIX B

Tables

ENSOLUM

TABLE 1
K-51 Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
SMA Sample - Open Excavation							
Excavation	4.21.10	**7,000**	**13,000**	540	**5,200**	NA	NA
Monitoring Wells Installed by LTE							
MW-1	6.21.10	**8,400**	**1,300**	560	**4,200**	NA	NA
	9.24.10	**2,300**	28	200	520	8.4	<1.0
	4.21.11	**430**	<20	120	60	2.1	<1.0
	6.21.11	**820**	370	33	140	5.1	130
	9.22.11	**690**	**1,200**	120	**1,200**	8.9	30
	12.13.11	**260**	250	54	**650**	3.4	<1.0
	3.20.12	**280**	230	94	550	3.5	<1.0
	6.19.12	**300**	<5.0	81	96	1.7	<1.0
	9.20.12*	**45**	3.4	15	23	0.45	<1.0
	12.17.12	**34**	<1.0	11	16	0.19	<1.0
	3.25.13	**41**	<1.0	19	32	0.27	<1.0
	6.27.13	**24**	<1.0	<1.0	36	0.22	<1.0
	10.22.13	**39**	<1.0	24	13	0.23	<1.0
	12.16.13	**10**	<1.0	14	11	0.18	<1.0
	4.18.14	**23**	<1.0	28	86	0.38	1.1
	11.6.14	**32**	<1.0	27	61	NA	NA
	5.29.15	**11**	<1.0	21	55	NA	NA
	12.1.15	5.3	<1.0	4.0	6.2	NA	NA
	5.26.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	**17**	<1.0	1.6	2.4	NA	NA
	5.30.17	4.1	<1.0	<1.0	<1.5	NA	NA
	12.07.17	2.8	<1.0	2.0	<1.5	NA	NA
	5.30.18	3.0	<1.0	<1.0	2.2	NA	NA
	11.02.18	1.2	<1.0	<1.0	<1.5	NA	NA
	9.25.19	1.8	<1.0	<1.0	<2.0	NA	NA
	2.4.20	<1.0	<1.0	<1.0	<2.0	NA	NA
MW-2	6.21.10	**200**	53	14	96	NA	NA
	9.24.10	2.3	<1.0	<1.0	<2.0	<0.050	<1.0
	4.21.11	3.3	<1.0	<1.0	<2.0	0.065	<1.0
	6.21.11	2.2	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.28.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	12.1.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	2.4.20	<1.0	<1.0	<1.0	<2.0	NA	NA

ENSOLUM

TABLE 1
K-51 Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
MW-3	6.21.10	**640**	57	72	**1,000**	NA	NA
	9.24.10	**150**	<1.0	16	28	0.48	<1.0
	4.21.11	**52**	<1.0	17	10	0.25	<1.0
	6.21.11	**62**	14	13	160	0.67	<1.0
	9.22.11	3	<1.0	8.7	<2.0	0.066	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	1.3	<1.0	1.9	<2.0	<0.050	<1.0
	6.19.12	3.1	<1.0	1.4	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.28.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	12.1.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.30.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.07.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA
MW-4	6.21.10	**3,600**	**10,000**	600	**6,600**	NA	NA
	9.24.10	**870**	**870**	260	**1,600**	12	1
	4.21.11	**670**	<20	520	**790**	6.3	<1.0
	6.21.11	**17**	22	36	77	0.64	1.1
	9.22.11	**62**	140	220	**820**	3.8	1.2
	12.13.11	**84**	<20	430	490	2.6	<1.0
	3.20.12	**36**	<20	**1,100**	**1,400**	6.5	<1.0
	6.19.12	**37**	<5.0	250	350	2.2	<1.0
	9.19.12	9.4	1.4	74	97	0.84	<1.0
	12.17.12	<1.0	<1.0	6.2	9.7	0.12	<1.0
	3.25.13	3.2	<1.0	51	55	1.0	<1.0
	6.27.13	3.9	<1.0	61	60	1.3	<1.0
	10.22.13	<1.0	<1.0	12	3.8	0.13	<1.0
	12.13.13	<1.0	<1.0	16	6.2	0.4	<1.0
	4.17.14	<1.0	<1.0	76	14	0.78	<1.0
	11.6.14	<1.0	<1.0	11	2.9	NA	NA
	5.29.15	<1.0	<1.0	24	6.1	NA	NA
	12.1.15	<1.0	<1.0	2.5	2.1	NA	NA
	5.25.16	<1.0	<1.0	7.4	<2.0	NA	NA
	11.08.16	2.4	<1.0	4.8	2.1	NA	NA
	5.26.17	<1.0	<1.0	3.9	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA

ENSOLUM

TABLE 1

K-51 Pipeline Release

GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
Monitoring Wells Installed by Apex TITAN (formerly Southwest Geoscience)							
MW-11	4.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.29.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.30.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA
MW-12	4.21.11	1.9	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	4.6	<1.0	<1.0	<2.0	0.063	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	1.7	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.29.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.30.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA

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TABLE 1
K-51 Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
MW-13	4.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12	NS	NS	NS	NS	NS	NS
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.12.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.28.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.30.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.08.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.30.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.25.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	2.4.20	<1.0	<1.0	<1.0	<2.0	NA	NA
MW-14	4.21.11	**2,800**	<100	280	**720**	8.7	<1.0
	6.21.11	**470**	<10	37	210	1.9	<1.0
	9.22.11	**540**	<10	100	36	1.7	<1.0
	12.13.11	**220**	<10	110	<20	1.0	<1.0
	3.20.12	**660**	<5.0	240	15	2.9	<1.0
	6.19.12	**660**	<5.0	300	100	3.4	<1.0
	9.20.12*	7.3	<1.0	<1.0	<2.0	0.1	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	1.6	<2.0	<0.050	<1.0
	6.27.13	**34**	4.4	30	130	0.56	1.4
	10.22.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.16.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.18.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.28.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.30.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.07.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.06.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.31.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.20.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA

ENSOLUM

TABLE 1

K-51 Pipeline Release

GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
MW-16	4.21.11	4.4	<2.0	<2.0	<4.0	<0.10	<1.0
	6.21.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	0.065	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	0.12	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	3.1	<1.0	2.1	14	0.19	<1.0
	3.25.13	<1.0	<1.0	<1.0	<1.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.12.13	1	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	1.4	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	1.2	<1.0	<1.0	<2.0	NA	NA
	5.29.15	3.0	<1.0	<1.0	<2.0	NA	NA
	12.1.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	2.2	<1.0	<1.0	<2.0	NA	NA
	11.07.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.30.17	2.1	<1.0	<1.0	<1.5	NA	NA
	12.07.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.31.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.02.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.25.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	2.4.20	<1.0	<1.0	<1.0	<2.0	NA	NA
MW-17	4.21.11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	6.21.11	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	9.22.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.13.11	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.21.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.12.13	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.17.14	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.28.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	12.1.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.25.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.07.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.07.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.31.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.01.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.25.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	2.4.20	<1.0	<1.0	<1.0	<2.0	NA	NA

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TABLE 1
K-51 Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		10[A]	750[A]	750[A]	620[A]	NE	NE
MW-18	3.20.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.19.12	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12	<2.0	<2.0	<2.0	<4.0	<0.10	<1.0
	3.25.13	NS	NS	NS	NS	NS	NS
	6.27.13	NS	NS	NS	NS	NS	NS
	10.21.13	NS	NS	NS	NS	NS	NS
	12.12.13	NS	NS	NS	NS	NS	NS
	4.17.14	NS	NS	NS	NS	NS	NS
	11.6.14	NS	NS	NS	NS	NS	NS
	5.29.15	NS	NS	NS	NS	NS	NS
	11.30.15	NS	NS	NS	NS	NS	NS
	5.25.16	NS	NS	NS	NS	NS	NS
	11.07.16	NS	NS	NS	NS	NS	NS
	5.26.17	NS	NS	NS	NS	NS	NS
	12.07.17	NS	NS	NS	NS	NS	NS
	5.30.18	NS	NS	NS	NS	NS	NS
	11.01.18	NS	NS	NS	NS	NS	NS
	9.20.19	NS	NS	NS	NS	NS	NS
	1.31.20	NS	NS	NS	NS	NS	NS
MW-19	3.20.12	**250**	56	310	**3,900**	16	5.3
	6.19.12	**NAPL**	**NAPL**	**NAPL**	**NAPL**	NA	NA
	9.19.12	**NAPL**	**NAPL**	**NAPL**	**NAPL**	NA	NA
	12.17.12	**180**	<5.0	5.4	23	2.2	2.6
	3.25.13	**160**	<5.0	17	<10	1.5	1.4
	6.27.13	**390**	<1.0	79	66	2.7	5.9
	10.22.13	**140**	<1.0	<1.0	<2.0	0.51	2.1
	12.16.13	**160**	<1.0	37	12	1.4	4.2
	4.18.14	**230**	<1.0	41	53	2.2	10
	11.6.14	**260**	<1.0	75	42	NA	NA
	5.29.15	**190**	<1.0	7.2	81	NA	NA
	12.1.15	**210**	<1.0	75	23	NA	NA
	5.26.16	**260**	<1.0	86	340	NA	NA
	11.08.16	**270**	<1.0	80	190	NA	NA
	5.30.17	**270**	<1.0	88	**640**	NA	NA
	12.07.17	**180**	<1.0	70	150	NA	NA
	5.31.18	**250**	<10	83	260	NA	NA
	11.02.18	**230**	<5.0	62	280	NA	NA
	9.25.19	**340**	<5.0	88	380	NA	NA
	2.4.20	**100**	<5.0	51	28	NA	NA

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TABLE 1
K-51 Pipeline Release
GROUNDWATER ANALYTICAL SUMMARY

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commmission Groundwater Quality Standards		**10[A]**	**750[A]**	**750[A]**	**620[A]**	**NE**	**NE**
MW-20	3.20.12	**35**	<1.0	1.1	3.3	0.14	<1.0
	6.19.12	3.4	<1.0	<1.0	<2.0	<0.050	<1.0
	9.20.12*	4.7	<1.0	<1.0	<2.0	<0.050	<1.0
	12.17.12*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	3.25.13*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	6.27.13*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	10.22.13*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	12.16.13*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	4.18.14*	<1.0	<1.0	<1.0	<2.0	<0.050	<1.0
	11.6.14*	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.29.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	12.1.15	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.26.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	11.07.16	<1.0	<1.0	<1.0	<2.0	NA	NA
	5.30.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	12.07.17	<1.0	<1.0	<1.0	<1.5	NA	NA
	5.31.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.02.18	<1.0	<1.0	<1.0	<1.5	NA	NA
	9.25.19	<1.0	<1.0	<1.0	<2.0	NA	NA
	1.31.20	<1.0	<1.0	<1.0	<2.0	NA	NA

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

[A] = NM EMNRD OCD District 3 has advised that the new 20.6.2 NMAC standards (12/21/18) will not be enforced by NM EMNRD OCD until sometime in 2020

* = Monitoring well purged/sampled utilizing disposable bailer during this event

µg/L= micrograms per liter

mg/L= milligrams per liter

NA = Not Analyzed

NS = Not Sampled

NE = Not Established

NAPL = Non-aqueous phase liquid

TPH = Total Petroleum Hydrocarbon

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

ENSOLUM

TABLE 2
K-51 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	4.21.11	ND	11.80	ND	6300.89	6289.09
	6.21.11	ND	12.16	ND		6288.73
	9.22.11	ND	12.92	ND		6287.97
	12.13.11	ND	12.45	ND		6288.44
	3.20.12	ND	12.13	ND		6288.76
	6.19.12	ND	12.76	ND		6288.13
	9.19.12	ND	13.10	ND		6287.79
	12.17.12	ND	12.33	ND		6288.56
	3.15.13	ND	11.88	ND		6289.01
	6.27.13	ND	12.61	ND		6288.28
	10.22.13	ND	11.71	ND		6289.18
	12.12.13	ND	11.35	ND		6289.54
	4.18.14	ND	11.04	ND		6289.85
	11.6.14	ND	11.56	ND		6289.33
	5.28.15	ND	10.86	ND		6290.03
	11.30.15	ND	10.90	ND		6289.99
	5.25.16	ND	10.52	ND		6290.37
	11.07.16	ND	11.42	ND		6289.47
	5.26.17	ND	10.41	ND		6290.48
	12.06.17	ND	10.53	ND		6290.36
	5.30.18	ND	10.67	ND		6290.22
	11.01.18	ND	11.59	ND		6289.30
	9.20.19	ND	12.08	ND		6288.81
	1.31.20	ND	11.13	ND		6289.76
MW-2	4.21.11	ND	10.55	ND	6299.82	6289.27
	6.21.11	ND	11.87	ND		6287.95
	9.22.11	ND	11.86	ND		6287.96
	12.13.11	ND	11.38	ND		6288.44
	3.20.12	ND	10.95	ND		6288.87
	6.19.12	ND	11.64	ND		6288.18
	9.19.12	ND	12.10	ND		6287.72
	12.17.12	ND	11.23	ND		6288.59
	3.15.13	ND	10.65	ND		6289.17
	6.27.13	ND	11.44	ND		6288.38
	10.21.13	ND	10.44	ND		6289.38
	12.12.13	ND	10.09	ND		6289.73
	4.17.14	ND	9.73	ND		6290.09
	11.6.14	ND	10.33	ND		6289.49
	5.28.15	ND	9.61	ND		6290.21
	11.30.15	ND	9.67	ND		6290.15
	5.25.16	ND	9.34	ND		6290.48
	11.07.16	ND	10.24	ND		6289.58
	5.26.17	ND	9.23	ND		6290.59
	12.06.17	ND	9.33	ND		6290.49
	5.30.18	ND	9.46	ND		6290.36
	11.01.18	ND	10.43	ND		6289.39
	9.20.19	ND	10.95	ND		6288.87
	1.31.20	ND	9.91	ND		6289.91

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TABLE 2
K-51 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-3	4.21.11	ND	11.30	ND	6300.22	6288.92
	6.21.11	ND	11.64	ND		6288.58
	9.22.11	ND	12.45	ND		6287.77
	12.13.11	ND	11.89	ND		6288.33
	3.20.12	ND	11.60	ND		6288.62
	6.19.12	ND	12.22	ND		6288.00
	9.19.12	ND	12.53	ND		6287.69
	12.17.12	ND	11.75	ND		6288.47
	3.15.13	ND	11.37	ND		6288.85
	6.27.13	ND	12.06	ND		6288.16
	10.21.13	ND	11.12	ND		6289.10
	12.12.13	ND	10.84	ND		6289.38
	4.17.14	ND	10.55	ND		6289.67
	11.6.14	ND	11.02	ND		6289.20
	5.28.15	ND	10.37	ND		6289.85
	11.30.15	ND	10.40	ND		6289.82
	5.25.16	ND	10.10	ND		6290.12
	11.07.16	ND	10.90	ND		6289.32
	5.26.17	ND	10.00	ND		6290.22
	12.06.17	ND	10.05	ND		6290.17
	5.30.18	ND	10.14	ND		6290.08
	11.01.18	ND	11.07	ND		6289.15
	9.20.19	ND	11.53	ND		6288.69
	1.31.20	ND	10.62	ND		6289.60
MW-4	4.21.11	ND	11.90	ND	6300.91	6289.01
	6.21.11	ND	12.18	ND		6288.73
	9.22.11	ND	12.90	ND		6288.01
	12.13.11	ND	12.41	ND		6288.50
	3.20.12	ND	12.45	ND		6288.46
	6.19.12	ND	12.72	ND		6288.19
	9.19.12	ND	13.09	ND		6287.82
	12.17.12	ND	12.33	ND		6288.58
	3.15.13	ND	11.85	ND		6289.06
	6.27.13	ND	12.60	ND		6288.31
	10.22.13	ND	11.74	ND		6289.17
	12.12.13	ND	11.37	ND		6289.54
	4.17.14	ND	11.05	ND		6289.86
	11.6.14	ND	11.58	ND		6289.33
	5.28.15	ND	10.91	ND		6290.00
	11.30.15	ND	10.94	ND		6289.97
	5.25.16	ND	10.59	ND		6290.32
	11.07.16	ND	11.43	ND		6289.48
	5.26.17	ND	10.47	ND		6290.44
	12.06.17	ND	10.60	ND		6290.31
	5.30.18	ND	10.69	ND		6290.22
	11.01.18	ND	11.58	ND		6289.33
	9.20.19	ND	12.04	ND		6288.87
	1.31.20	ND	11.14	ND		6289.77

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TABLE 2
K-51 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-11	4.21.11	ND	11.98	ND	6301.19	6289.21
	6.21.11	ND	12.40	ND		6288.79
	9.22.11	ND	13.07	ND		6288.12
	12.13.11	ND	12.55	ND		6288.64
	3.20.12	ND	12.26	ND		6288.93
	6.19.12	ND	12.93	ND		6288.26
	9.19.12	ND	13.27	ND		6287.92
	12.17.12	ND	12.51	ND		6288.68
	3.15.13	ND	12.05	ND		6289.14
	6.27.13	ND	12.82	ND		6288.37
	10.21.13	ND	11.94	ND		6289.25
	12.12.13	ND	11.61	ND		6289.58
	4.17.14	ND	11.25	ND		6289.94
	11.6.14	ND	11.80	ND		6289.39
	5.28.15	ND	11.12	ND		6290.07
	11.30.15	ND	11.18	ND		6290.01
	5.25.16	ND	10.79	ND		6290.40
	11.07.16	ND	11.66	ND		6289.53
	5.26.17	ND	10.66	ND		6290.53
	12.06.17	ND	10.82	ND		6290.37
	5.30.18	ND	10.88	ND		6290.31
	11.01.18	ND	11.82	ND		6289.37
	9.20.19	ND	12.26	ND		6288.93
	1.31.20	ND	11.39	ND		6289.80
MW-12	4.21.11	ND	8.96	ND	6299.08	6290.12
	6.21.11	ND	9.42	ND		6289.66
	9.22.11	ND	10.82	ND		6288.26
	12.13.11	ND	10.13	ND		6288.95
	3.20.12	ND	9.41	ND		6289.67
	6.19.12	ND	10.09	ND		6288.99
	9.19.12	ND	11.03	ND		6288.05
	12.17.12	ND	10.21	ND		6288.87
	3.15.13	ND	9.26	ND		6289.82
	6.27.13	ND	9.99	ND		6289.09
	10.21.13	ND	9.09	ND		6289.99
	12.12.13	ND	8.78	ND		6290.30
	4.17.14	ND	8.44	ND		6290.64
	11.6.14	ND	9.05	ND		6290.03
	5.28.15	ND	8.34	ND		6290.74
	11.30.15	ND	8.44	ND		6290.64
	5.25.16	ND	8.11	ND		6290.97
	11.07.16	ND	8.87	ND		6290.21
	5.26.17	ND	8.01	ND		6291.07
	12.06.17	ND	8.12	ND		6290.96
	5.30.18	ND	8.27	ND		6290.81
	11.01.18	ND	9.17	ND		6289.91
	9.20.19	ND	9.68	ND		6289.40
	1.31.20	ND	8.71	ND		6290.37

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TABLE 2
K-51 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-13	4.21.11	ND	9.07	ND	6298.27	6289.20
	6.21.11	ND	9.51	ND		6288.76
	9.22.11	ND	10.15	ND		6288.12
	12.13.11	ND	9.59	ND		6288.68
	3.20.12	ND	9.35	ND		6288.92
	6.19.12	ND	10.09	ND		6288.18
	9.19.12	ND	10.29	ND		6287.98
	12.17.12	ND	9.47	ND		6288.80
	3.15.13	ND	9.11	ND		6289.16
	6.27.13	ND	9.94	ND		6288.33
	10.21.13	ND	8.91	ND		6289.36
	12.12.13	ND	8.57	ND		6289.70
	4.17.14	ND	8.39	ND		6289.88
	11.6.14	ND	8.83	ND		6289.44
	5.28.15	ND	8.32	ND		6289.95
	11.30.15	ND	8.21	ND		6290.06
	5.25.16	ND	8.01	ND		6290.26
	11.07.16	ND	8.67	ND		6289.60
	5.26.17	ND	7.83	ND		6290.44
	12.06.17	ND	7.90	ND		6290.37
	5.30.18	ND	8.08	ND		6290.19
	11.01.18	ND	8.84	ND		6289.43
	9.20.19	ND	9.36	ND		6288.91
	1.31.20	ND	8.40	ND		6289.87
MW-14	4.21.11	ND	12.54	ND	6301.20	6288.66
	6.21.11	ND	12.88	ND		6288.32
	9.22.11	ND	13.53	ND		6287.67
	12.13.11	ND	13.11	ND		6288.09
	3.20.12	ND	12.80	ND		6288.40
	6.19.12	ND	13.42	ND		6287.78
	9.19.12	ND	13.70	ND		6287.50
	12.17.12	ND	12.93	ND		6288.27
	3.15.13	ND	12.55	ND		6288.65
	6.27.13	ND	13.26	ND		6287.94
	10.22.13	ND	12.39	ND		6288.81
	12.12.13	ND	12.06	ND		6289.14
	4.18.14	ND	11.79	ND		6289.41
	11.6.14	ND	12.23	ND		6288.97
	5.28.15	ND	11.67	ND		6289.53
	11.30.15	ND	11.62	ND		6289.58
	5.25.16	ND	11.35	ND		6289.85
	11.07.16	ND	12.09	ND		6289.11
	5.26.17	ND	11.24	ND		6289.96
	12.06.17	ND	11.27	ND		6289.93
	5.30.18	ND	11.36	ND		6289.84
	11.01.18	ND	12.23	ND		6288.97
	9.20.19	ND	12.68	ND		6288.52
	1.31.20	ND	11.78	ND		6289.42

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TABLE 2
K-51 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-16	4.21.11	ND	12.06	ND	6299.89	6287.83
	6.21.11	ND	12.26	ND		6287.63
	9.22.11	ND	12.57	ND		6287.32
	12.13.11	ND	12.28	ND		6287.61
	3.20.12	ND	12.24	ND		6287.65
	6.19.12	ND	12.71	ND		6287.18
	9.19.12	ND	12.80	ND		6287.09
	12.17.12	ND	11.90	ND		6287.99
	3.15.13	ND	11.80	ND		6288.09
	6.27.13	ND	12.37	ND		6287.52
	10.21.13	ND	11.32	ND		6288.57
	12.12.13	ND	10.92	ND		6288.97
	4.17.14	ND	10.76	ND		6289.13
	11.6.14	ND	10.99	ND		6288.90
	5.28.15	ND	10.56	ND		6289.33
	11.30.15	ND	10.39	ND		6289.50
	5.25.16	ND	10.10	ND		6289.79
	11.07.16	ND	10.86	ND		6289.03
	5.26.17	ND	10.02	ND		6289.87
	12.06.17	ND	10.01	ND		6289.88
	5.30.18	ND	10.11	ND		6289.78
	11.01.18	ND	11.02	ND		6288.87
	9.20.19	ND	11.35	ND		6288.54
	1.31.20	ND	10.60	ND		6289.29
MW-17	4.21.11	ND	9.90	ND	6298.57	6288.67
	6.21.11	ND	9.56	ND		6289.01
	9.22.11	ND	10.83	ND		6287.74
	12.13.11	ND	10.31	ND		6288.26
	3.20.12	ND	10.12	ND		6288.45
	6.19.12	ND	10.81	ND		6287.76
	9.19.12	ND	10.95	ND		6287.62
	12.17.12	ND	10.13	ND		6288.44
	3.15.13	ND	9.85	ND		6288.72
	6.27.13	ND	10.62	ND		6287.95
	10.21.13	ND	9.61	ND		6288.96
	12.12.13	ND	9.28	ND		6289.29
	4.17.14	ND	9.13	ND		6289.44
	11.6.14	ND	9.47	ND		6289.10
	5.28.15	ND	9.00	ND		6289.57
	11.30.15	ND	8.87	ND		6289.70
	5.25.16	ND	8.65	ND		6289.92
	11.07.16	ND	9.32	ND		6289.25
	5.26.17	ND	8.56	ND		6290.01
	12.06.17	ND	8.52	ND		6290.05
	5.30.18	ND	8.68	ND		6289.89
	11.01.18	ND	9.48	ND		6289.09
	9.20.19	ND	9.97	ND		6288.60
	1.31.20	ND	9.05	ND		6289.52

ENSOLUM

TABLE 2
K-51 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-18	3.20.12	ND	16.60	ND	6304.77	6288.17
	6.19.12	ND	17.42	ND		6287.35
	9.19.12	ND	17.45	ND		6287.32
	12.17.12	ND	16.73	ND		6288.04
	3.15.13	Blockage	Blockage	Blockage		Blockage
	6.27.13	Blockage	Blockage	Blockage		Blockage
	10.22.13	Blockage	Blockage	Blockage		Blockage
	12.12.13	Blockage	Blockage	Blockage		Blockage
	4.17.14	Blockage	Blockage	Blockage		Blockage
	11.6.14	Blockage	Blockage	Blockage		Blockage
	5.28.15	Blockage	Blockage	Blockage		Blockage
	11.30.15	Blockage	Blockage	Blockage		Blockage
	5.25.16	Blockage	Blockage	Blockage		Blockage
	11.07.16	Blockage	Blockage	Blockage		Blockage
	5.26.17	ND	15.12	ND		6289.65
	12.06.17	ND	15.31	ND		6289.46
	5.30.18	Blockage	Blockage	Blockage		Blockage
	11.01.18	Blockage	Blockage	Blockage		Blockage
	9.20.19	Blockage	Blockage	Blockage		Blockage
	1.31.20	Blockage	Blockage	Blockage		Blockage
MW-19	3.20.12	ND	15.69	ND	6303.80	6288.11
	6.19.12	16.25	16.32	0.07**		6287.52
	9.19.12	16.47	16.49	0.02**		6287.32
	12.17.12	ND	15.91	ND		6287.89
	3.15.13	ND	15.38	ND		6288.42
	6.27.13	ND	16.19	ND		6287.61
	10.22.13	ND	15.13	ND		6288.67
	12.12.13	ND	14.78	ND		6289.02
	4.18.14	ND	14.68	ND		6289.12
	11.6.14	ND	14.99	ND		6288.81
	5.28.15	ND	14.60	ND		6289.20
	11.30.15	ND	14.38	ND		6289.42
	5.25.16	ND	14.28	ND		6289.52
	11.07.16	ND	14.83	ND		6288.97
	5.26.17	ND	14.20	ND		6289.60
	12.06.17	ND	14.08	ND		6289.72
	5.30.18	ND	14.27	ND		6289.53
	11.01.18	ND	15.00	ND		6288.80
	9.20.19	ND	15.47	ND		6288.33
	1.31.20	ND	14.56	ND		6289.24

ENSOLUM

TABLE 2
K-51 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-20	3.20.12	ND	25.82	ND	6312.59	6286.77
	6.19.12	ND	26.30	ND		6286.29
	9.19.12	ND	26.31	ND		6286.28
	12.17.12	ND	25.42	ND		6287.17
	3.15.13	ND	25.38	ND		6287.21
	6.27.13	ND	26.11	ND		6286.48
	10.22.13	ND	24.98	ND		6287.61
	12.12.13	ND	24.57	ND		6288.02
	4.17.14	ND	24.66	ND		6287.93
	11.6.14	ND	24.81	ND		6287.78
	5.28.15	ND	24.80	ND		6287.79
	11.30.15	ND	24.15	ND		6288.44
	5.25.16	ND	24.28	ND		6288.31
	11.07.16	ND	24.48	ND		6288.11
	5.26.17	ND	24.37	ND		6288.22
	12.06.17	ND	23.95	ND		6288.64
	5.30.18	ND	24.29	ND		6288.30
	11.01.18	ND	24.69	ND		6287.90
	9.20.19	ND	25.35	ND		6287.24
	1.31.20	ND	24.26	ND		6288.33

BTOC - below top of casing
AMSL - above mean sea level (North American Vertical Datum 1988)
TOC - top of casing
* - corrected for presence of phase-sepated hydrocarbon using a site-specific density correction factor of 0.63
** - No visual verification. May not be hydrocarbon.
ND - Not Detected

ENSOLUM

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

September 27, 2019

Kyle Summers

Ensolum
606 S Rio Grande Ste A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral K-51 2010 OrderNo.: 1909B71

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 6 sample(s) on 9/21/2019 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Lab Order: 1909B71
Project: Lateral K-51 2010

Lab ID: 1909B71-001 **Collection Date:** 9/20/2019 9:45:00 AM
Client Sample ID: MW-14 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 2:58:58 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 2:58:58 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 2:58:58 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 2:58:58 PM	B63237
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	9/26/2019 2:58:58 PM	B63237

Lab ID: 1909B71-002 **Collection Date:** 9/20/2019 10:30:00 AM
Client Sample ID: MW-11 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 3:21:51 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 3:21:51 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 3:21:51 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 3:21:51 PM	B63237
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	9/26/2019 3:21:51 PM	B63237

Lab ID: 1909B71-003 **Collection Date:** 9/20/2019 11:20:00 AM
Client Sample ID: MW-4 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 3:44:42 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 3:44:42 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 3:44:42 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 3:44:42 PM	B63237
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	9/26/2019 3:44:42 PM	B63237

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum **Lab Order:** 1909B71
Project: Lateral K-51 2010

Lab ID: 1909B71-004 **Collection Date:** 9/20/2019 11:55:00 AM
Client Sample ID: MW-12 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 4:07:35 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 4:07:35 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 4:07:35 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 4:07:35 PM	B63237
Surr: 4-Bromofluorobenzene	97.7	80-120		%Rec	1	9/26/2019 4:07:35 PM	B63237

Lab ID: 1909B71-005 **Collection Date:** 9/20/2019 12:30:00 PM
Client Sample ID: MW-2 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 5:38:56 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 5:38:56 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 5:38:56 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 5:38:56 PM	B63237
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	9/26/2019 5:38:56 PM	B63237

Lab ID: 1909B71-006 **Collection Date:** 9/20/2019 1:20:00 PM
Client Sample ID: MW-3 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/26/2019 6:01:49 PM	B63237
Toluene	ND	1.0		µg/L	1	9/26/2019 6:01:49 PM	B63237
Ethylbenzene	ND	1.0		µg/L	1	9/26/2019 6:01:49 PM	B63237
Xylenes, Total	ND	2.0		µg/L	1	9/26/2019 6:01:49 PM	B63237
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	9/26/2019 6:01:49 PM	B63237

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909B71**

27-Sep-19

Client: Ensolum

Project: Lateral K-51 2010

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B63237**	RunNo: **63237**
Prep Date:	Analysis Date: **9/26/2019**	SeqNo: **2158109** 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	19		20.00		97.1	80	120			

Sample ID: **100NG BTEX LCSB**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B63237**	RunNo: **63237**
Prep Date:	Analysis Date: **9/26/2019**	SeqNo: **2158110** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.6	80	120			
Toluene	20	1.0	20.00	0	98.4	80	120			
Ethylbenzene	20	1.0	20.00	0	98.9	80	120			
Xylenes, Total	59	2.0	60.00	0	98.3	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1909B71** RcptNo: **1**

Received By: **Yazmine Garduno** **9/21/2019 8:50:00 AM** Yazmine Garduno

Completed By: **Yazmine Garduno** **9/21/2019 12:29:33 PM** Yazmine Garduno

Reviewed By: YG 9/23/19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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: DAD 9/23/19

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good				

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Ensolum, LLC

Mailing Address: 6060 S. Rio Grande Suite A Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance ☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: Lateral K-51 (2010)

Project #: 05A1226010

Project Manager: KSummers

Sampler: RDeechilly

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.1+0.1 = 4.2

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904B71	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
9/20/19	945	W	MW-14	3x40mL VOA	$HgCl_2$	-001	X									
9/20/19	1030	W	MW-11	3x40mL VOA	$HgCl_2$	-002	X									
9/20/19	1120	W	MW-4	3x40mL VOA	$HgCl_2$	-003	X									
9/20/19	1155	W	MW-12	3x40mL VOA	$HgCl_2$	-004	X									
9/20/19	1230	W	MW-2	3x40mL VOA	$HgCl_2$	-005	X									
9/20/19	1320	W	MW-3	3x40mL VOA	$HgCl_2$	-006	X									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9/20/19	1521		Christen Walker		9/20/19	1521
9/20/19	1837	Christen Walker		courier	9/21/19	8:50

Remarks: Bill to Ensolum

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 03, 2019

Kyle Summers

Ensolum
606 S Rio Grande Ste A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral K-51 2010 OrderNo.: 1909E73

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 9/26/2019 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-20
Project: Lateral K-51 2010
Collection Date: 9/25/2019 8:50:00 AM
Lab ID: 1909E73-001
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/30/2019 11:42:48 AM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 11:42:48 AM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 11:42:48 AM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 11:42:48 AM	B63313
Surr: 4-Bromofluorobenzene	95.9	80-120		%Rec	1	9/30/2019 11:42:48 AM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-16
Project: Lateral K-51 2010
Collection Date: 9/25/2019 9:40:00 AM
Lab ID: 1909E73-002
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/30/2019 12:05:59 PM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 12:05:59 PM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 12:05:59 PM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 12:05:59 PM	B63313
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	9/30/2019 12:05:59 PM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-17
Project: Lateral K-51 2010
Collection Date: 9/25/2019 10:20:00 AM
Lab ID: 1909E73-003
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/30/2019 1:37:49 PM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 1:37:49 PM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 1:37:49 PM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 1:37:49 PM	B63313
Surr: 4-Bromofluorobenzene	97.2	80-120		%Rec	1	9/30/2019 1:37:49 PM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-13
Project: Lateral K-51 2010
Collection Date: 9/25/2019 11:00:00 AM
Lab ID: 1909E73-004
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/30/2019 2:00:44 PM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 2:00:44 PM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 2:00:44 PM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 2:00:44 PM	B63313
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	9/30/2019 2:00:44 PM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-1
Project: Lateral K-51 2010
Collection Date: 9/25/2019 11:40:00 AM
Lab ID: 1909E73-005
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	1.8	1.0		µg/L	1	9/30/2019 2:23:41 PM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 2:23:41 PM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 2:23:41 PM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 2:23:41 PM	B63313
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	9/30/2019 2:23:41 PM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-19
Project: Lateral K-51 2010
Collection Date: 9/25/2019 12:30:00 PM
Lab ID: 1909E73-006
Matrix: AQUEOUS
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	340	5.0		µg/L	5	10/1/2019 12:15:27 PM	B63336
Toluene	ND	5.0		µg/L	5	10/1/2019 12:15:27 PM	B63336
Ethylbenzene	88	5.0		µg/L	5	10/1/2019 12:15:27 PM	B63336
Xylenes, Total	380	10		µg/L	5	10/1/2019 12:15:27 PM	B63336
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	5	10/1/2019 12:15:27 PM	B63336

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: Trip Blank
Project: Lateral K-51 2010
Collection Date:
Lab ID: 1909E73-007
Matrix: TRIP BLANK
Received Date: 9/26/2019 8:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	9/30/2019 6:12:51 PM	B63313
Toluene	ND	1.0		µg/L	1	9/30/2019 6:12:51 PM	B63313
Ethylbenzene	ND	1.0		µg/L	1	9/30/2019 6:12:51 PM	B63313
Xylenes, Total	ND	2.0		µg/L	1	9/30/2019 6:12:51 PM	B63313
Surr: 4-Bromofluorobenzene	97.6	80-120		%Rec	1	9/30/2019 6:12:51 PM	B63313

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909E73**

03-Oct-19

Client: Ensolum

Project: Lateral K-51 2010

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B63313**	RunNo: **63313**
Prep Date:	Analysis Date: **9/30/2019**	SeqNo: **2160656** 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	19		20.00		96.3	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B63313**	RunNo: **63313**
Prep Date:	Analysis Date: **9/30/2019**	SeqNo: **2160657** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.5	80	120			
Toluene	19	1.0	20.00	0	97.5	80	120			
Ethylbenzene	20	1.0	20.00	0	97.9	80	120			
Xylenes, Total	58	2.0	60.00	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		101	80	120			

Sample ID: **1909E73-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-20**	Batch ID: **B63313**	RunNo: **63313**
Prep Date:	Analysis Date: **9/30/2019**	SeqNo: **2160684** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	80	120			
Toluene	20	1.0	20.00	0	99.4	75.5	120			
Ethylbenzene	20	1.0	20.00	0	99.0	80	120			
Xylenes, Total	59	2.0	60.00	0	98.4	77.3	119			
Surr: 4-Bromofluorobenzene	21		20.00		103	80	120			

Sample ID: **1909E73-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-20**	Batch ID: **B63313**	RunNo: **63313**
Prep Date:	Analysis Date: **9/30/2019**	SeqNo: **2160691** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	91.6	80	120	5.81	20	
Toluene	19	1.0	20.00	0	93.0	75.5	120	6.69	20	
Ethylbenzene	19	1.0	20.00	0	93.2	80	120	6.01	20	
Xylenes, Total	55	2.0	60.00	0	92.1	77.3	119	6.66	20	
Surr: 4-Bromofluorobenzene	20		20.00		102	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909E73**

03-Oct-19

Client: Ensolum

Project: Lateral K-51 2010

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B63336**	RunNo: **63336**
Prep Date:	Analysis Date: **10/1/2019**	SeqNo: **2162464** 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	20		20.00		98.8	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B63336**	RunNo: **63336**
Prep Date:	Analysis Date: **10/1/2019**	SeqNo: **2162465** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.0	80	120			
Toluene	20	1.0	20.00	0	98.8	80	120			
Ethylbenzene	20	1.0	20.00	0	98.9	80	120			
Xylenes, Total	59	2.0	60.00	0	97.7	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **1909E73** RcptNo: **1**

Received By: **Desiree Dominguez** **9/26/2019 8:15:00 AM** DD

Completed By: **Yazmine Garduno** **9/26/2019 8:57:14 AM** Yazmine Garduno

Reviewed By: LB 9/27/19

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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: DAD 9/27/19

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Lateral K-51 (2016)

Project #: 05A1226010

Project Manager: KSummers

Sampler: RDeutchill

On Ice: ☑ Yes ☐ No

# of Coolers: 3) 1.1+0.3=1.4°C

Cooler Temp (including CF): 0.4+0.3=0.7°C, 0.8+0.3=1.1°C

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1909E73	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
9/25/19	850	W	MW-20	3x40mL VOA	$HgCl_2$	-001	X									
9/25/19	940	W	MW-16	3x40mL VOA	$HgCl_2$	-002	X									
9/25/19	1020	W	MW-17	3x40mL VOA	$HgCl_2$	-003	X									
9/25/19	1100	W	MW-13	3x40mL VOA	$HgCl_2$	-004	X									
9/25/19	1140	W	MW-1	3x40mL VOA	$HgCl_2$	-005	X									
9/25/19	1230	W	MW-19	3x40mL VOA	$HgCl_2$	-006	X									
			Trip Blank	DAD 9/27/19		-007										

NPS

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/25/19	1554				9/25/19	1554
9/25/19	1840			Courier	9/26/19	8:15

Remarks: Bill to Ensolum

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 07, 2020

Kyle Summers

Ensolum
606 S Rio Grande Ste A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral K-51 2010 OrderNo.: 2002050

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 6 sample(s) on 2/4/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-20
Project: Lateral K-51 2010
Collection Date: 1/31/2020 9:20:00 AM
Lab ID: 2002050-001
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 1:33:19 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 1:33:19 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 1:33:19 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 1:33:19 AM	B66356
Surr: 4-Bromofluorobenzene	93.8	80-120		%Rec	1	2/7/2020 1:33:19 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-14
Project: Lateral K-51 2010
Collection Date: 1/31/2020 10:15:00 AM
Lab ID: 2002050-002
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 1:56:41 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 1:56:41 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 1:56:41 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 1:56:41 AM	B66356
Surr: 4-Bromofluorobenzene	91.2	80-120		%Rec	1	2/7/2020 1:56:41 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-3
Project: Lateral K-51 2010
Collection Date: 1/31/2020 10:50:00 AM
Lab ID: 2002050-003
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 2:20:06 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 2:20:06 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 2:20:06 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 2:20:06 AM	B66356
Surr: 4-Bromofluorobenzene	92.4	80-120		%Rec	1	2/7/2020 2:20:06 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-4
Project: Lateral K-51 2010
Collection Date: 1/31/2020 11:30:00 AM
Lab ID: 2002050-004
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 2:43:31 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 2:43:31 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 2:43:31 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 2:43:31 AM	B66356
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	2/7/2020 2:43:31 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-11
Project: Lateral K-51 2010
Collection Date: 1/31/2020 12:10:00 PM
Lab ID: 2002050-005
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 3:06:55 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 3:06:55 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 3:06:55 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 3:06:55 AM	B66356
Surr: 4-Bromofluorobenzene	92.9	80-120		%Rec	1	2/7/2020 3:06:55 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum
Client Sample ID: MW-12
Project: Lateral K-51 2010
Collection Date: 1/31/2020 12:50:00 PM
Lab ID: 2002050-006
Matrix: AQUEOUS
Received Date: 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 3:30:15 AM	B66356
Toluene	ND	1.0		µg/L	1	2/7/2020 3:30:15 AM	B66356
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 3:30:15 AM	B66356
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 3:30:15 AM	B66356
Surr: 4-Bromofluorobenzene	91.4	80-120		%Rec	1	2/7/2020 3:30:15 AM	B66356

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 Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002050**

07-Feb-20

Client: Ensolum

Project: Lateral K-51 2010

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B66356**	RunNo: **66356**
Prep Date:	Analysis Date: **2/6/2020**	SeqNo: **2280556** 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	19		20.00		95.6	80	120			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B66356**	RunNo: **66356**
Prep Date:	Analysis Date: **2/6/2020**	SeqNo: **2280557** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.6	80	120			
Toluene	19	1.0	20.00	0	96.9	80	120			
Ethylbenzene	19	1.0	20.00	0	97.1	80	120			
Xylenes, Total	59	2.0	60.00	0	98.3	80	119			
Surr: 4-Bromofluorobenzene	19		20.00		93.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **2002050** RcptNo: **1**

Received By: **Desiree Dominguez** **2/4/2020 7:58:00 AM** DD

Completed By: **Isaiah Ortiz** **2/4/2020 8:05:30 AM** I.O

Reviewed By: LB 2/4/2020

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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: JR 2/4/20

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Lateral K-51 (2010)

Project #: 05A1226010

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 2.5-0.3=2.2 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002050	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
1/31/20	920	W	MW-20	3x40mL VOA	$HgCl_2$	-001	X									
1/31/20	1015	W	MW-14	3x40mL VOA	$HgCl_2$	-002	X									
1/31/20	1050	W	MW-3	3x40mL VOA	$HgCl_2$	-003	X									
1/31/20	1130	W	MW-4	3x40mL VOA	$HgCl_2$	-004	X									
1/31/20	1210	W	MW-11	3x40mL VOA	$HgCl_2$	-005	X									
1/31/20	1250	W	MW-12	3x40mL VOA	$HgCl_2$	-006	X									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
2/3/20	1740		Christa Waeles		2/3/20	1740
2/3/20	1810	Christa Waeles		courier	2/4/20	7:58

Remarks: Bill to Ensolum

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 10, 2020

Kyle Summers

Ensolum
606 S Rio Grande Ste A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral K-51 (2010) OrderNo.: 2002124

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 6 sample(s) on 2/5/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum **Lab Order:** 2002124
Project: Lateral K-51 (2010)

Lab ID: 2002124-001 **Collection Date:** 2/4/2020 10:30:00 AM
Client Sample ID: MW-1 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 7:39:44 PM	B66388
Toluene	ND	1.0		µg/L	1	2/7/2020 7:39:44 PM	B66388
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 7:39:44 PM	B66388
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 7:39:44 PM	B66388
Surr: 4-Bromofluorobenzene	95.6	80-120		%Rec	1	2/7/2020 7:39:44 PM	B66388

Lab ID: 2002124-002 **Collection Date:** 2/4/2020 11:10:00 AM
Client Sample ID: MW-2 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 8:50:17 PM	B66388
Toluene	ND	1.0		µg/L	1	2/7/2020 8:50:17 PM	B66388
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 8:50:17 PM	B66388
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 8:50:17 PM	B66388
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	2/7/2020 8:50:17 PM	B66388

Lab ID: 2002124-003 **Collection Date:** 2/4/2020 11:50:00 AM
Client Sample ID: MW-13 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 9:13:40 PM	B66388
Toluene	ND	1.0		µg/L	1	2/7/2020 9:13:40 PM	B66388
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 9:13:40 PM	B66388
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 9:13:40 PM	B66388
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	2/7/2020 9:13:40 PM	B66388

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum **Lab Order:** 2002124
Project: Lateral K-51 (2010)

Lab ID: 2002124-004 **Collection Date:** 2/4/2020 12:25:00 PM
Client Sample ID: MW-17 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 9:37:11 PM	B66388
Toluene	ND	1.0		µg/L	1	2/7/2020 9:37:11 PM	B66388
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 9:37:11 PM	B66388
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 9:37:11 PM	B66388
Surr: 4-Bromofluorobenzene	90.9	80-120		%Rec	1	2/7/2020 9:37:11 PM	B66388

Lab ID: 2002124-005 **Collection Date:** 2/4/2020 1:25:00 PM
Client Sample ID: MW-16 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	2/7/2020 10:00:34 PM	B66388
Toluene	ND	1.0		µg/L	1	2/7/2020 10:00:34 PM	B66388
Ethylbenzene	ND	1.0		µg/L	1	2/7/2020 10:00:34 PM	B66388
Xylenes, Total	ND	2.0		µg/L	1	2/7/2020 10:00:34 PM	B66388
Surr: 4-Bromofluorobenzene	90.9	80-120		%Rec	1	2/7/2020 10:00:34 PM	B66388

Lab ID: 2002124-006 **Collection Date:** 2/4/2020 2:05:00 PM
Client Sample ID: MW-19 **Matrix:** AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	100	5.0		µg/L	5	2/7/2020 10:24:06 PM	B66388
Toluene	ND	5.0		µg/L	5	2/7/2020 10:24:06 PM	B66388
Ethylbenzene	51	5.0		µg/L	5	2/7/2020 10:24:06 PM	B66388
Xylenes, Total	28	10		µg/L	5	2/7/2020 10:24:06 PM	B66388
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	5	2/7/2020 10:24:06 PM	B66388

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002124**

10-Feb-20

Client: Ensolum

Project: Lateral K-51 (2010)

Sample ID: **100ng btex lcs** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSW** Batch ID: **B66388** RunNo: **66388**

Prep Date: Analysis Date: **2/7/2020** SeqNo: **2282534** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.0	80	120			
Toluene	19	1.0	20.00	0	97.5	80	120			
Ethylbenzene	20	1.0	20.00	0	98.0	80	120			
Xylenes, Total	59	2.0	60.00	0	99.1	80	119			
Surr: 4-Bromofluorobenzene	19		20.00		95.3	80	120			

Sample ID: **2002124-001ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **MW-1** Batch ID: **B66388** RunNo: **66388**

Prep Date: Analysis Date: **2/7/2020** SeqNo: **2282537** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0.7720	97.5	80	120			
Toluene	20	1.0	20.00	0.4240	99.4	80	120			
Ethylbenzene	20	1.0	20.00	0.4440	99.7	80	120			
Xylenes, Total	62	2.0	60.00	1.946	99.9	68.3	130			
Surr: 4-Bromofluorobenzene	21		20.00		103	80	120			

Sample ID: **2002124-001amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **MW-1** Batch ID: **B66388** RunNo: **66388**

Prep Date: Analysis Date: **2/7/2020** SeqNo: **2282538** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0.7720	90.6	80	120	7.02	20	
Toluene	19	1.0	20.00	0.4240	92.7	80	120	6.80	20	
Ethylbenzene	19	1.0	20.00	0.4440	94.3	80	120	5.47	20	
Xylenes, Total	59	2.0	60.00	1.946	94.9	68.3	130	4.92	20	
Surr: 4-Bromofluorobenzene	20		20.00		99.8	80	120	0	0	

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBW** Batch ID: **B66388** RunNo: **66388**

Prep Date: Analysis Date: **2/7/2020** SeqNo: **2282545** 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	19		20.00		93.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **2002124** RcptNo: 1

Received By: **Desiree Dominguez** **2/5/2020 8:15:00 AM** DD

Completed By: **Isaiah Ortiz** **2/5/2020 8:51:29 AM** I-OX

Reviewed By: DAD 2/5/20

Chain of Custody

1. Is Chain of Custody sufficiently complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☑	No ☐	NA ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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: YG 2/5/20

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.4	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Lateral K-51 (2010)

Project #: 05A1226010

Project Manager: KSummers

Sampler: TDechilly

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.5 - 0.1 = 0.4°C

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002124	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
2/4/20	1030	W	MW-1	3x40mL VOA	$HgCl_2$	-001	X									
2/4/20	1110	W	MW-2	3x40mL VOA	$HgCl_2$	-002	X									
2/4/20	1150	W	MW-13	3x40mL VOA	$HgCl_2$	-003	X									
2/4/20	1225	W	MW-17	3x40mL VOA	$HgCl_2$	-004	X									
2/4/20	1325	W	MW-16	3x40mL VOA	$HgCl_2$	-005	X									
2/4/20	1405	W	MW-19	3x40mL VOA	$HgCl_2$	-006	X									

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
2/4/20	1618				2/4/20	1618
2/4/20	1807			courier	2/5/20	8:15

Remarks: Bill to Ensolum

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