

# RP # 3R-446

## AGWMR

### 2020

1. Follow recommendations stated within 2020 Groundwater Monitoring Report.
  - a. 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
  - b. conduct additional site-specific aquifer characterization
  - c. complete installation of 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)
  - d. repair or replace monitoring well MW-18 as described in the Stage 1 Abatement Plan (Ensolum, revised May 22, 2019)
  - e. prepare and submit a Stage 2 Abatement Plan after the Stage 1 Abatement Plan is deemed administratively complete

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

Printed Name: Scott Drewry Title: P.G.

Signature:  Date: 8/21/2021

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



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

ENTERPRISE PRODUCTS OPERATING LLC

August 10, 2021

Submitted online via OCD E-Permitting:

<https://wwwapps.emnrd.state.nm.us/OCD/OCDPermitting/default.aspx>

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

**Submittal: 2020 Groundwater Monitoring Report** (Ensolum, March 19, 2021)

RE: 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 March 19, 2021. 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 in May 2020 and November 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 hydrocarbons (PSH) have only been present across the entire site twice, during Q2 & Q3 of 2012 in MW-19. MW-19 was drilled on March 19, 2012. The product found during Q2 & Q3 only measured to a thickness of 0.07 foot & 0.02 foot respectively. PSH was 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 migrated 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.

Enterprise appreciates the 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](mailto:gemiller@eprod.com).

Sincerely,

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

Rodney M. Sartor, REM  
Sr. Director, Environmental

cc: BLM, Farmington, NM – Mr. Ryan Joyner <6251 College Blvd., Suite A, Farmington, NM 87402>  
Landowner – Mr. Russell Luna < PO Box 753, Bloomfield, NM 87413-0753>  
ec: Ensolum, Houston, TX – Mr. Marc E. Gentry <[MGentry@ensolum.com](mailto:MGentry@ensolum.com)>



## 2020 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  
Incident ID No. nAUTOfAB000318**

March 19, 2021  
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:

A handwritten signature in blue ink, reading "Raneet Deechilly".

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Raneet Deechilly  
Environmental Scientist

A handwritten signature in blue ink, reading "Landon Daniell".

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Landon Daniell  
Staff Geologist

A handwritten signature in blue ink, reading "Kyle Summers".

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Kyle Summers  
Senior Project Manager



## 2020 GROUNDWATER MONITORING REPORT EXECUTIVE SUMMARY

This report documents the 2020 groundwater monitoring activities at the Lateral K-51 Pipeline Release (2010) site, referred to hereinafter as the "Site".

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 release area.

Quarterly and semi-annual groundwater monitoring occurred from 2012 through 2014, and 2015 through 2019, respectively.

During February 2019, Enterprise assigned 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 or approved the plan at this time and Enterprise has resumed semi-annual groundwater monitoring of the Site.

Groundwater sampling events were conducted by Ensolum during May 2020 and November 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 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 0.009 feet per foot (ft/ft) across the Site.
- Benzene was reported at concentrations exceeding the New Mexico WQCC GQS of 10 micrograms per liter (µg/L) in groundwater samples collected from monitoring well MW-19 during the May 2020 and November 2020 sampling events. The groundwater samples collected from the remaining monitoring wells during the two 2020 sampling events do not exhibit COC concentrations above the applicable WQCC GQSs (see footnote in report).



- Monitoring well MW-19 has exhibited relatively stable benzene exceedances since 2012.

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 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, or proceeding "at-risk", 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.

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## 2020 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 2020 groundwater monitoring activities at the Lateral K-51 Pipeline Release (2010) site, referred to hereinafter as the "Site".

#### 1.1 Site Description & Background

<b>Operator:</b>	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
<b>Site Name:</b>	Lateral K-51 Pipeline Release (2010)
<b>Incident ID</b>	nAUTOfAB000318
<b>Location:</b>	36.4465° North, 107.4461° West Sections 34 and 35, Township 26 North, Range 6 West Rio Arriba County, New Mexico
<b>Property:</b>	United States (US) Bureau of Land Management (BLM) and Private Land
<b>Regulatory:</b>	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 were 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 soil samples collected immediately adjacent to the release and near the groundwater interface (BH-1) indicated COC concentrations above the applicable New Mexico EMNRD OCD closure criteria. Analysis of groundwater samples collected from monitoring wells MW-1 through MW-4 indicated COC concentrations 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*).



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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 assigned management of the project to Ensolum, LLC (Ensolum).

Semi-annual groundwater monitoring was conducted by Ensolum in 2019.

During March of 2019, Enterprise 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.<sup>1</sup>

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 objective of the groundwater monitoring events was to further evaluate the concentrations of COCs in groundwater over time and monitor the COC concentrations at the Site.

## 2.0 GROUNDWATER MONITORING

### 2.1 Groundwater Sampling Program

Groundwater sampling events were conducted during May 2020 and November 2020 by Ensolum. The 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 apparently silted in, blocked by roots, or collapsed, and was not sampled during either sampling event.

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<sup>1</sup> NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD has not responded to Enterprise's inquiries regarding which closure standards will apply to sites that predate the 2018 rule change. Therefore, this document reflects the GQSs that were applicable at the time of initial remediation.



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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 viable two (2) inch diameter 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.
- During low-flow sampling, 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) consecutive readings.
- Groundwater samples were collected in laboratory-supplied containers (pre-preserved with mercuric chloride ( $\text{HgCl}_2$ )), 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 the two (2) sampling events were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) utilizing US Environmental Protection Agency (EPA) SW-846 Method #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 at the Site is generally toward the west-northwest. The calculated gradient during the May 2020 and November 2020 monitoring events averaged approximately 0.009 feet per foot (ft/ft) across the Site.

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Groundwater elevation data collected during the May 2020 and November 2020 gauging events are presented (as well as historical gauging data) in **Table 2 (Appendix B)**. Groundwater gradient maps for the May 2020 and November 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 during the May 2020 and November 2020 groundwater sampling events to the New Mexico WQCC GQSs.<sup>1</sup> 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**.

### May 2020

The May 2020 analytical result for monitoring well MW-19 indicates a benzene concentration of 97 micrograms per liter ( $\mu\text{g/L}$ ), which exceeds the WQCC GQS of 10  $\mu\text{g/L}$ .<sup>1</sup> 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  $\mu\text{g/L}$ .<sup>1</sup>

The May 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  $\mu\text{g/L}$ .<sup>1</sup>

The May 2020 analytical result for monitoring well MW-19 indicates an ethylbenzene concentration of 54  $\mu\text{g/L}$ , which is below the WQCC GQS of 750  $\mu\text{g/L}$ .<sup>1</sup> 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  $\mu\text{g/L}$ .<sup>1</sup>

The May 2020 analytical result for monitoring well MW-19 indicates a total xylenes concentration of 15  $\mu\text{g/L}$ , which is below the WQCC GQS of 620  $\mu\text{g/L}$ .<sup>1</sup> 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  $\mu\text{g/L}$ .<sup>1</sup>

No data qualifier flags are associated with the May 2020 analytical results.

### November 2020

The November 2020 analytical result for monitoring well MW-19 indicates a benzene concentration of 240  $\mu\text{g/L}$ , which exceeds the WQCC GQS of 10  $\mu\text{g/L}$ .<sup>1</sup> 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  $\mu\text{g/L}$ .<sup>1</sup>

The November 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  $\mu\text{g/L}$ .<sup>1</sup>

The November 2020 analytical result for monitoring well MW-19 indicates an ethylbenzene concentration of 80  $\mu\text{g/L}$ , which is below the WQCC GQS of 750  $\mu\text{g/L}$ .<sup>1</sup> 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  $\mu\text{g/L}$ .<sup>1</sup>

The November 2020 analytical result for monitoring well MW-19 indicates a total xylenes concentration of

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<sup>1</sup> NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD has not responded to Enterprise's inquiries regarding which closure standards will apply to sites that predate the 2018 rule change. Therefore, this document reflects the GQSs that were applicable at the time of initial remediation.

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50 µg/L, which is below the WQCC GQS of 620 µg/L.<sup>1</sup> 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.<sup>1</sup>

No data qualifier flags are associated with the November 2020 analytical results.

### 3.0 FINDINGS

Based on the evaluation of the analytical results from the May 2020 and November 2020 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 0.009 ft/ft across the Site.
- Benzene was reported at concentrations exceeding the New Mexico WQCC GQS of 10 µg/L in groundwater samples collected from monitoring well MW-19 during the May 2020 and November 2020 sampling events. The groundwater samples collected from the remaining monitoring wells during the two 2020 sampling events do not exhibit COC concentrations above the applicable WQCC GQSs.<sup>1</sup>
- Monitoring well MW-19 has exhibited relatively stable benzene exceedances since 2012.

### 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 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, or proceeding "at-risk", 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.

### 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 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.

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<sup>1</sup> NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD has not responded to Enterprise's inquiries regarding which closure standards will apply to sites that predate the 2018 rule change. Therefore, this document reflects the GQSs that were applicable at the time of initial remediation.

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## 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

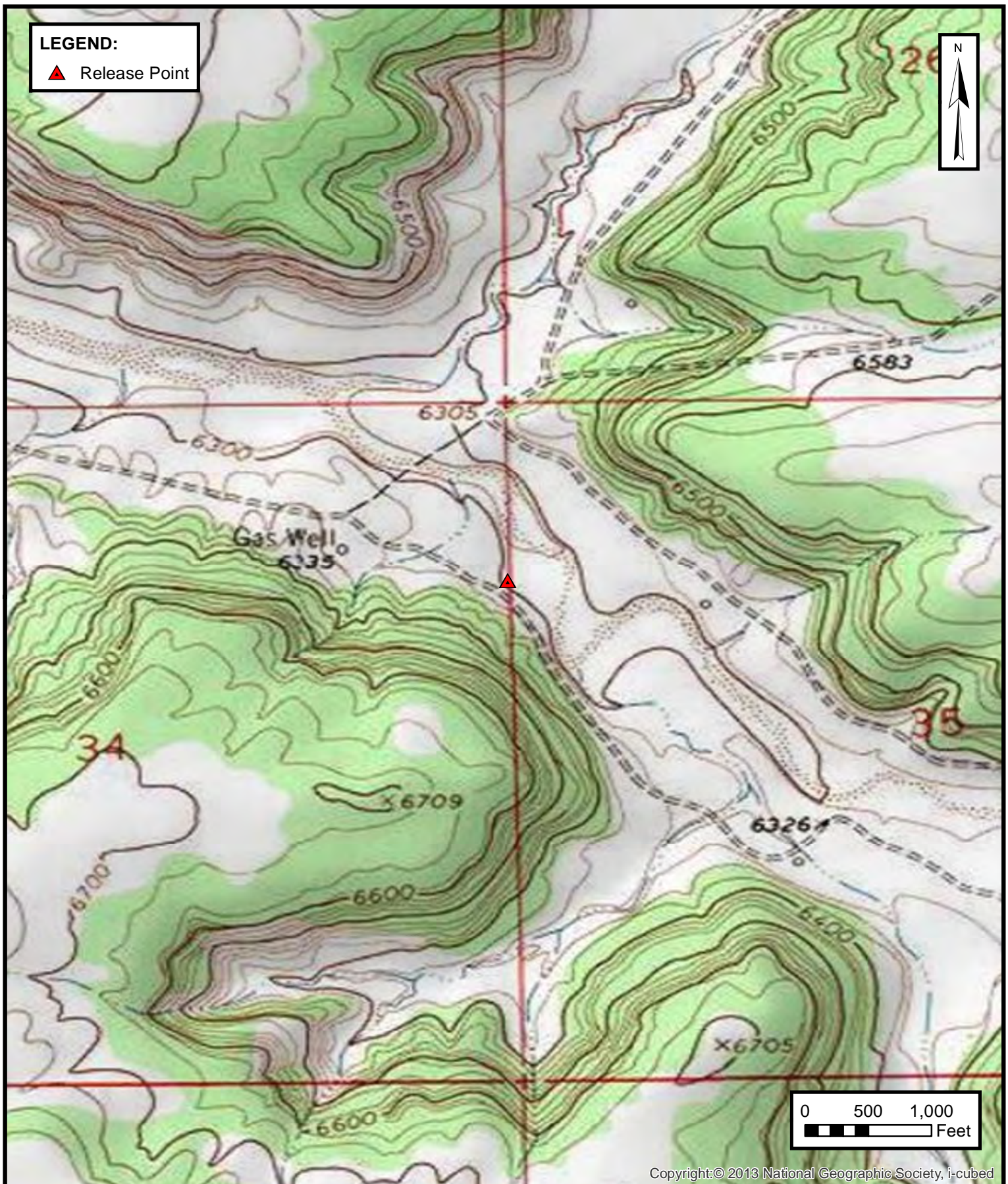
This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and Ensolum. Any unauthorized distribution 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

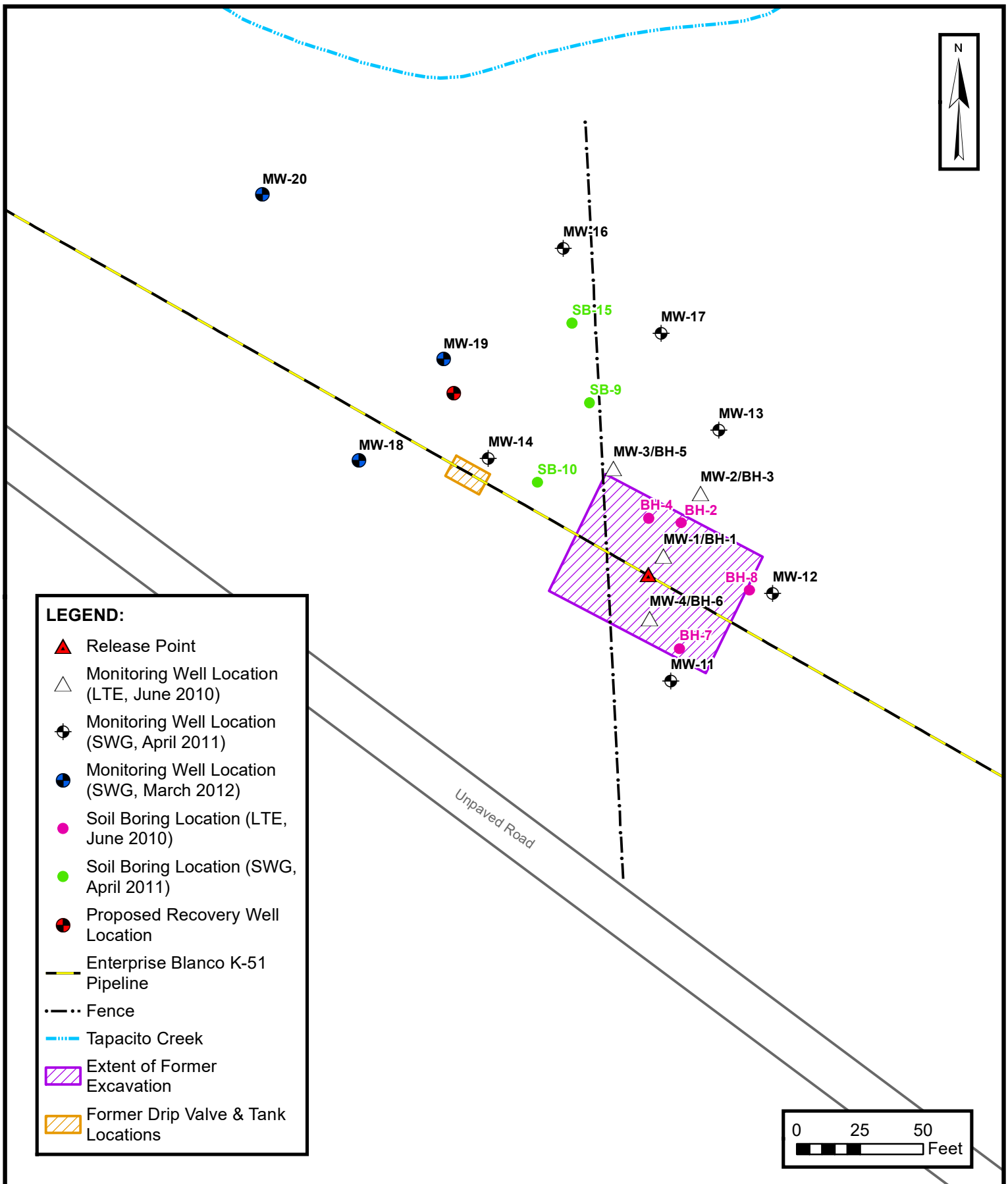


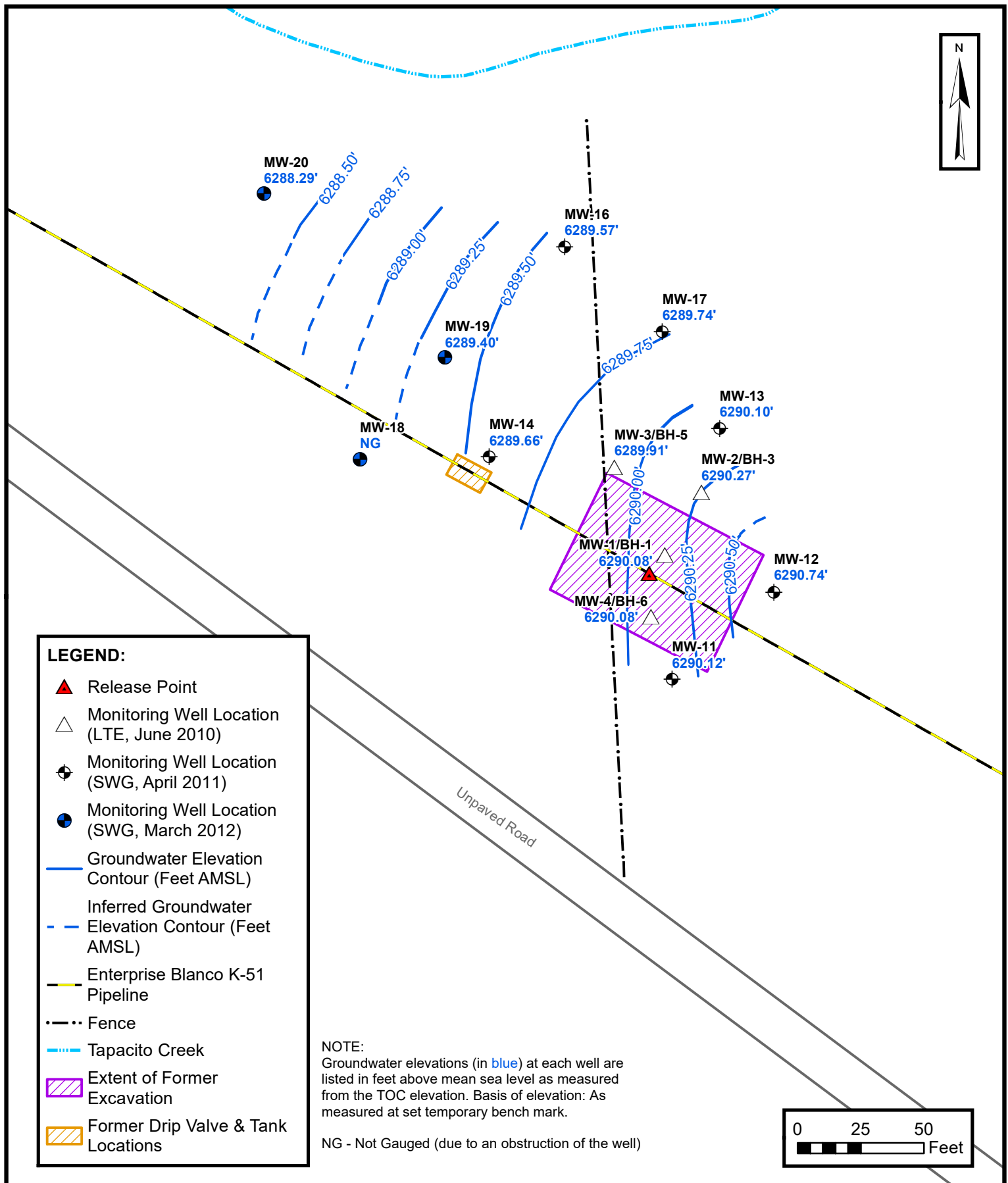


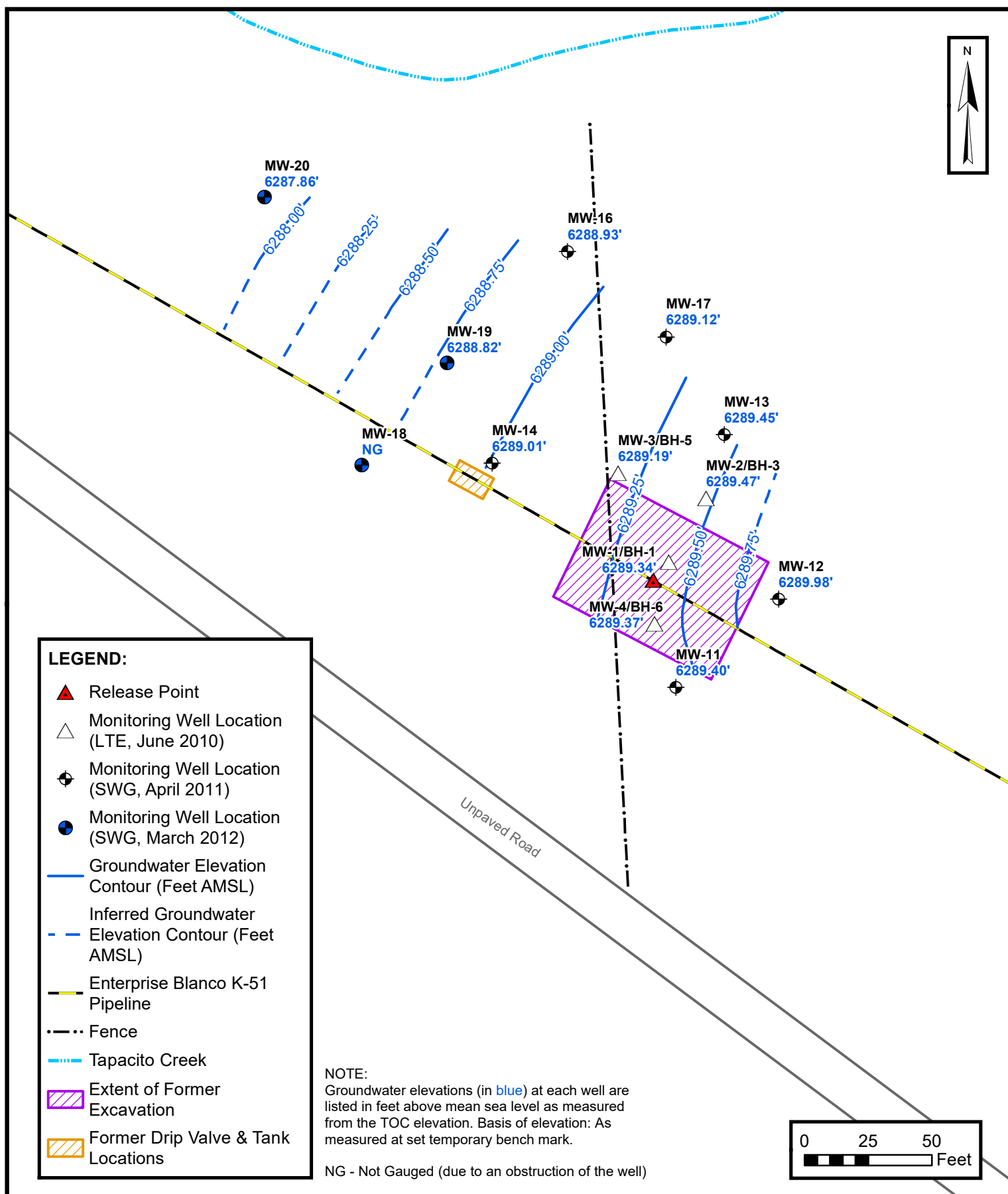


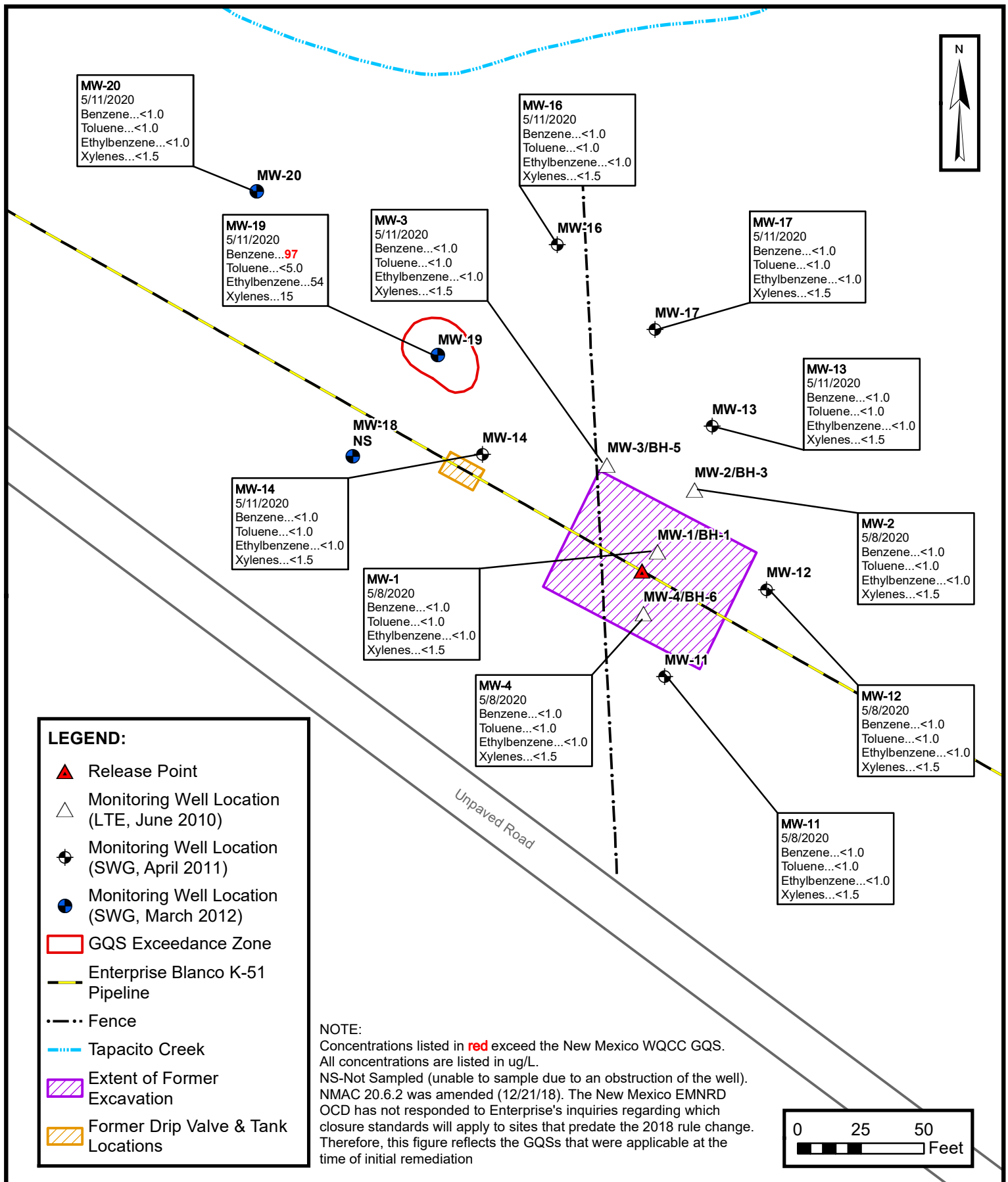








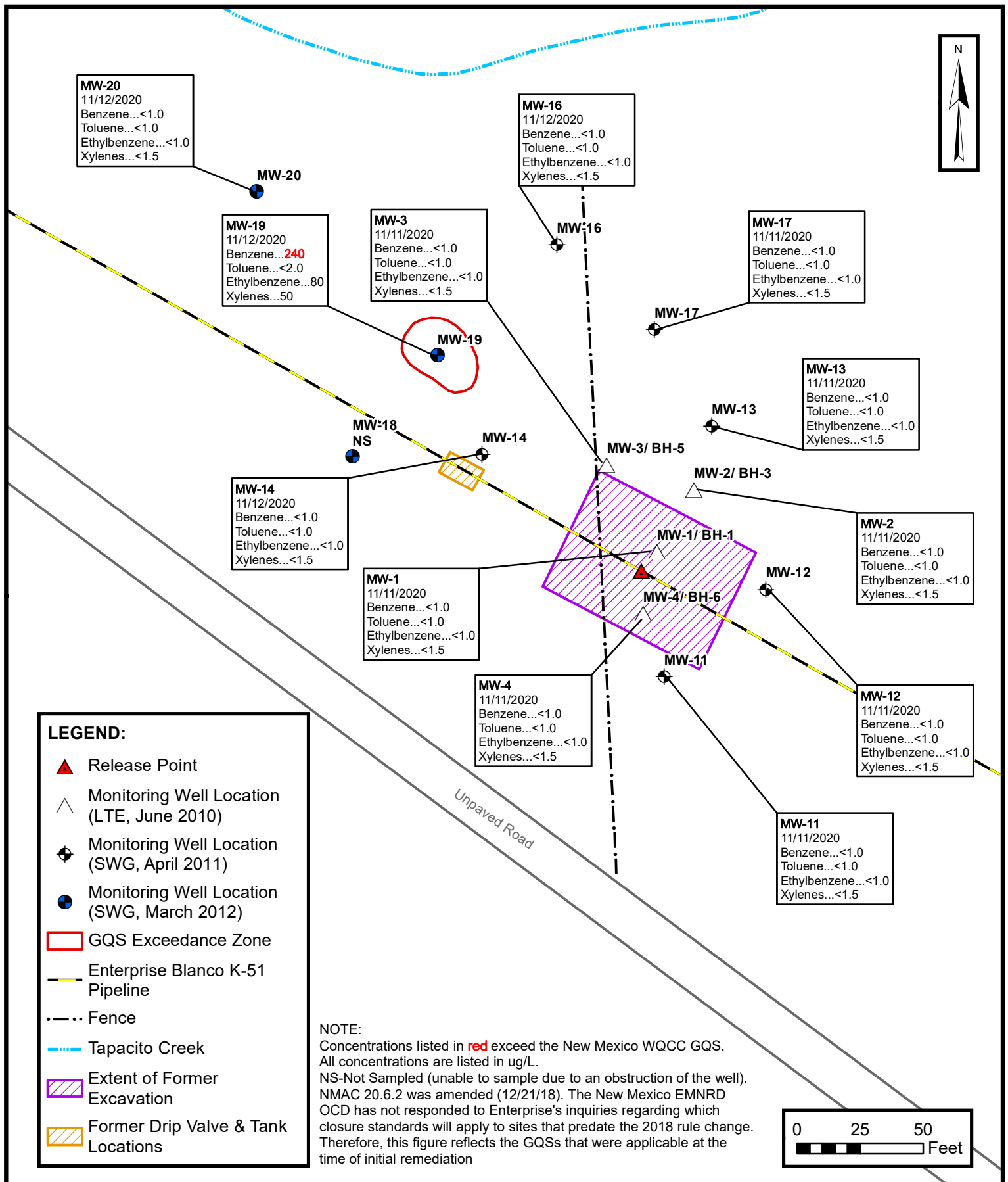




# GROUNDWATER QUALITY STANDARD (GQS) EXCEEDANCE ZONE MAP (May 2020)

ENTERPRISE FIELD SERVICES, LLC  
LATERAL K-51 PIPELINE RELEASE (2010)  
S34 and 35 T26N R6W, Rio Arriba County, New Mexico  
36.4465° N, 107.4461° W  
Ensolum Project No.: 05A1226010

FIGURE  
**5A**



### GROUNDWATER QUALITY STANDARD (GQS) EXCEEDANCE ZONE MAP (November 2020)

ENTERPRISE FIELD SERVICES, LLC  
 LATERAL K-51 PIPELINE RELEASE (2010)  
 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

<b>TABLE 1</b> <b>Lateral K-51 Pipeline Release (2010)</b> <b>GROUNDWATER ANALYTICAL SUMMARY</b>							
Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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
	5.8.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	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
	5.8.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA



<b>TABLE 1</b> <b>Lateral K-51 Pipeline Release (2010)</b> <b>GROUNDWATER ANALYTICAL SUMMARY</b>							
Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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
MW-4	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
	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	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
	5.8.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA

<b>TABLE 1</b> <b>Lateral K-51 Pipeline Release (2010)</b> <b>GROUNDWATER ANALYTICAL SUMMARY</b>							
Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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
MW-12	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
	5.8.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	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
	5.8.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA

<b>TABLE 1</b> <b>Lateral K-51 Pipeline Release (2010)</b> <b>GROUNDWATER ANALYTICAL SUMMARY</b>							
Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	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
	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.12.20	<1.0	<1.0	<1.0	<1.5	NA	NA

**TABLE 1**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ANALYTICAL SUMMARY**

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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
MW-17	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
	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.12.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	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
	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA

<b>TABLE 1</b> <b>Lateral K-51 Pipeline Release (2010)</b> <b>GROUNDWATER ANALYTICAL SUMMARY</b>							
Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	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
	5.8.20	NS	NS	NS	NS	NS	NS
	11.11.20	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
	5.11.20	97	<5.0	54	15	NA	NA
	11.12.20	240	<2.0	80	50	NA	NA

**TABLE 1**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ANALYTICAL SUMMARY**

Sample I.D.	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	TPH GRO (mg/L)	TPH DRO (mg/L)
New Mexico Water Quality Control Commission Groundwater Quality Standards		10 <sup>A</sup>	750 <sup>A</sup>	750 <sup>A</sup>	620 <sup>A</sup>	NE	NE
MW-20	3.20.12	<b>35</b>	<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
	5.11.20	<1.0	<1.0	<1.0	<1.5	NA	NA
	11.12.20	<1.0	<1.0	<1.0	<1.5	NA	NA

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

A = NMAC 20.6.2 was amended (12/21/18). The New Mexico EMNRD OCD has not responded to Enterprise's inquiries regarding which closure standards will apply to sites that predate the 2018 rule change. Therefore, this table reflects the groundwater quality standards that were applicable at the time of initial remediation.

\* = 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

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-1	4.21.11	ND	11.80	ND	17.71	7.71-17.71	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
	5.8.20	ND	10.81	ND				6290.08
	11.11.20	ND	11.55	ND				6289.34
MW-2	4.21.11	ND	10.55	ND	18.45	8.45-18.45	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
	5.8.20	ND	9.55	ND				6290.27
	11.11.20	ND	10.35	ND				6289.47



**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-3	4.21.11	ND	11.30	ND	18.39	8.39-18.39	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
	5.11.20	ND	10.31	ND				6289.91
	11.11.20	ND	11.03	ND				6289.19
MW-4	4.21.11	ND	11.90	ND	19.47	9.47-19.47	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
	5.8.20	ND	10.83	ND				6290.08
	11.11.20	ND	11.54	ND				6289.37

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-11	4.21.11	ND	11.98	ND	19.07	9.07-19.07	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
	5.8.20	ND	11.07	ND				6290.12
	11.11.20	ND	11.79	ND				6289.40
MW-12	4.21.11	ND	8.96	ND	18.03	8.03-18.03	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
	5.8.20	ND	8.34	ND				6290.74
	11.11.20	ND	9.10	ND				6289.98

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-13	4.21.11	ND	9.07	ND	17.90	7.90-17.90	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
	5.11.20	ND	8.17	ND				6290.10
	11.11.20	ND	8.82	ND				6289.45
MW-14	4.21.11	ND	12.54	ND	18.88	8.88-18.88	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
	5.11.20	ND	11.54	ND				6289.66
	11.11.20	ND	12.19	ND				6289.01

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-16	4.21.11	ND	12.06	ND	18.01	8.01-18.01	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
	5.11.20	ND	10.32	ND				6289.57
	11.11.20	ND	10.96	ND				6288.93
MW-17	4.21.11	ND	9.90	ND	18.16	8.16-18.16	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
	5.11.20	ND	8.83	ND				6289.74
	11.11.20	ND	9.45	ND				6289.12

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-18	3.20.12	ND	16.60	ND	NA	NA	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
	5.8.20	Blockage	Blockage	Blockage				Blockage
	11.11.20	Blockage	Blockage	Blockage				Blockage
MW-19	3.20.12	ND	15.69	ND	23.22	13.22-23.22	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
	5.11.20	ND	14.40	ND				6289.40
	11.11.20	ND	14.98	ND				6288.82

**TABLE 2**  
**Lateral K-51 Pipeline Release (2010)**  
**GROUNDWATER ELEVATIONS**

Well I.D.	Date	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	Product Thickness	Total Depth of Well (feet BTOC)	Screen Interval (feet BTOC)	TOC Elevation (feet AMSL)	Groundwater Elevation* (feet AMSL)
MW-20	3.20.12	ND	25.82	ND	30.51	20.51-30.51	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
	5.11.20	ND	24.30	ND				6288.29
	11.11.20	ND	24.73	ND				6287.86

BTOC - below top of casing

AMSL - above mean sea level (North American Vertical Datum 1988)

TOC - top of casing

\* - corrected for presence of phase-separated hydrocarbon using a site-specific density correction factor of 0.63. Groundwater elevations at each well are listed in feet above mean sea level as measured from the TOC elevation.

Basis of elevation: As measured at set temporary bench mark.

\*\* - No visual verification. May not be hydrocarbon.

NA - Not Available

ND - Not Detected



## APPENDIX C

### Laboratory Data Sheets & Chain-of-Custody Documentation





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

May 13, 2020

Kyle Summers

Ensolum

606 S Rio Grande Ste A

Aztec, NM 87410

TEL: (903) 821-5603

FAX

RE: Lateral K-51 2010

OrderNo.: 2005398

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 5 sample(s) on 5/9/2020 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](http://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,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2005398

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-1

Project: Lateral K-51 2010

Collection Date: 5/8/2020

Lab ID: 2005398-001

Matrix: AQUEOUS

Received Date: 5/9/2020 6:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/12/2020 9:55:40 PM	R68840
Toluene	ND	1.0		µg/L	1	5/12/2020 9:55:40 PM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/12/2020 9:55:40 PM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/12/2020 9:55:40 PM	R68840
Surr: 1,2-Dichloroethane-d4	87.8	70-130		%Rec	1	5/12/2020 9:55:40 PM	R68840
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/12/2020 9:55:40 PM	R68840
Surr: Toluene-d8	96.8	70-130		%Rec	1	5/12/2020 9:55:40 PM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005398

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-12

Project: Lateral K-51 2010

Collection Date: 5/8/2020

Lab ID: 2005398-002

Matrix: AQUEOUS

Received Date: 5/9/2020 6:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/12/2020 11:21:53 PM	R68840
Toluene	ND	1.0		µg/L	1	5/12/2020 11:21:53 PM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/12/2020 11:21:53 PM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/12/2020 11:21:53 PM	R68840
Surr: 1,2-Dichloroethane-d4	86.1	70-130		%Rec	1	5/12/2020 11:21:53 PM	R68840
Surr: Dibromofluoromethane	99.6	70-130		%Rec	1	5/12/2020 11:21:53 PM	R68840
Surr: Toluene-d8	100	70-130		%Rec	1	5/12/2020 11:21:53 PM	R68840

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

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## Analytical Report

Lab Order 2005398

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-4

Project: Lateral K-51 2010

Collection Date: 5/8/2020

Lab ID: 2005398-003

Matrix: AQUEOUS

Received Date: 5/9/2020 6:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 1:17:07 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 1:17:07 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 1:17:07 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 1:17:07 AM	R68840
Surr: 1,2-Dichloroethane-d4	86.7	70-130		%Rec	1	5/13/2020 1:17:07 AM	R68840
Surr: Dibromofluoromethane	96.9	70-130		%Rec	1	5/13/2020 1:17:07 AM	R68840
Surr: Toluene-d8	102	70-130		%Rec	1	5/13/2020 1:17:07 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005398

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-11

Project: Lateral K-51 2010

Collection Date: 5/8/2020

Lab ID: 2005398-004

Matrix: AQUEOUS

Received Date: 5/9/2020 6:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 1:45:47 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 1:45:47 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 1:45:47 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 1:45:47 AM	R68840
Surr: 1,2-Dichloroethane-d4	88.1	70-130		%Rec	1	5/13/2020 1:45:47 AM	R68840
Surr: Dibromofluoromethane	100	70-130		%Rec	1	5/13/2020 1:45:47 AM	R68840
Surr: Toluene-d8	101	70-130		%Rec	1	5/13/2020 1:45:47 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005398

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-2

Project: Lateral K-51 2010

Collection Date: 5/8/2020

Lab ID: 2005398-005

Matrix: AQUEOUS

Received Date: 5/9/2020 6:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 2:14:40 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 2:14:40 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 2:14:40 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 2:14:40 AM	R68840
Surr: 1,2-Dichloroethane-d4	85.7	70-130		%Rec	1	5/13/2020 2:14:40 AM	R68840
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/13/2020 2:14:40 AM	R68840
Surr: Toluene-d8	100	70-130		%Rec	1	5/13/2020 2:14:40 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2005398

13-May-20

**Client:** Ensolum  
**Project:** Lateral K-51 2010

Sample ID: <b>mb1</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382809</b> Units: <b>µg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.6		10.00		86.2	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382810</b> Units: <b>µg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	8.6		10.00		85.8	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.4	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

Sample ID: <b>2005398-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>MW-1</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382964</b> Units: <b>µg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.7	70	130			
Toluene	20	1.0	20.00	0	97.9	70	130			
Surr: 1,2-Dichloroethane-d4	8.8		10.00		87.7	70	130			
Surr: 4-Bromofluorobenzene	9.4		10.00		94.0	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	70	130			

Sample ID: <b>2005398-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>MW-1</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382965</b> Units: <b>µg/L</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.4	70	130	4.48	20	
Toluene	19	1.0	20.00	0	95.4	70	130	2.57	20	

**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 Quantitative 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#: 2005398

13-May-20

**Client:** Ensolum  
**Project:** Lateral K-51 2010

Sample ID: <b>2005398-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>MW-1</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382965</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	8.7		10.00		86.6	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.4		10.00		93.7	70	130	0	0	
Surr: Dibromofluoromethane	9.6		10.00		95.6	70	130	0	0	
Surr: Toluene-d8	9.6		10.00		96.0	70	130	0	0	

### Qualifiers:

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

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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: 2005398

RcptNo: 1

Received By: Isaiah Ortiz

5/9/2020 6:45:00 AM

I-Ox

Completed By: Isaiah Ortiz

5/9/2020 7:10:40 AM

I-Ox

Reviewed By: LB

5/11/20

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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: SPA 5.11.20

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

Chain-of-Custody Record				Turn-Around Time:			
Client: <u>Ensolung LLC</u>				<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush			
Mailing Address: <u>606 S. RedGrande, Suite 4</u>				Project Name: <u>Lateral K-51 (2010)</u>			
<u>Artec, NM 87410</u>				Project #: <u>05A1226010</u>			
Phone #: <u>5</u>				Project Manager: <u>K. Summers</u>			
email or Fax#: <u>KSummers@ensolung.com</u>				Sampler: <u>L. Daniell</u>			
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)				On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Accreditation: <input type="checkbox"/> Az Compliance				# of Coolers: <u>1</u>			
<input type="checkbox"/> NELAC <input type="checkbox"/> Other				Cooler Temp (including CF): <u>11-0ke</u> <u>11°C</u> (°C)			
<input type="checkbox"/> EDD (Type)				HEAL No. <u>7005398</u>			
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	
<u>5/8/20</u>		<u>W</u>	<u>MW-1</u>	<u>3x40mL VOA</u>	<u>HgCl<sub>2</sub></u>	<u>- 001</u>	
<u>5/8/20</u>		<u>W</u>	<u>MW-12</u>	<u>3x40mL VOA</u>	<u>HgCl<sub>2</sub></u>	<u>- 007</u>	
<u>5/8/20</u>		<u>W</u>	<u>MW-4</u>	<u>3x40mL VOA</u>	<u>HgCl<sub>2</sub></u>	<u>- 003</u>	
<u>5/8/20</u>		<u>W</u>	<u>MW-11</u>	<u>3x40mL VOA</u>	<u>HgCl<sub>2</sub></u>	<u>- 004</u>	
<u>5/8/20</u>		<u>W</u>	<u>MW-2</u>	<u>3x40mL VOA</u>	<u>HgCl<sub>2</sub></u>	<u>- 005</u>	
Relinquished by: <u>[Signature]</u>				Received by: <u>Christa Walt</u>			
Date: <u>5/8/20</u> Time: <u>1645</u>				Date: <u>5/8/20</u> Time: <u>1645</u>			
Relinquished by: <u>[Signature]</u>				Received by: <u>[Signature]</u>			
Date: <u>5/8/20</u> Time: <u>1748</u>				Date: <u>5/8/20</u> Time: <u>1645</u>			

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 13, 2020

Kyle Summers

Ensolum

606 S Rio Grande Ste A

Aztec, NM 87410

TEL: (903) 821-5603

FAX

RE: Lateral K-51 2010

OrderNo.: 2005437

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/12/2020 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](http://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,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-13

Project: Lateral K-51 2010

Collection Date: 5/11/2020 9:20:00 AM

Lab ID: 2005437-001

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 2:43:31 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 2:43:31 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 2:43:31 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 2:43:31 AM	R68840
Surr: 1,2-Dichloroethane-d4	87.2	70-130		%Rec	1	5/13/2020 2:43:31 AM	R68840
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/13/2020 2:43:31 AM	R68840
Surr: Toluene-d8	98.9	70-130		%Rec	1	5/13/2020 2:43:31 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-17

Project: Lateral K-51 2010

Collection Date: 5/11/2020 9:55:00 AM

Lab ID: 2005437-002

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 3:12:20 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 3:12:20 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 3:12:20 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 3:12:20 AM	R68840
Surr: 1,2-Dichloroethane-d4	87.9	70-130		%Rec	1	5/13/2020 3:12:20 AM	R68840
Surr: Dibromofluoromethane	103	70-130		%Rec	1	5/13/2020 3:12:20 AM	R68840
Surr: Toluene-d8	98.9	70-130		%Rec	1	5/13/2020 3:12:20 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-3

Project: Lateral K-51 2010

Collection Date: 5/11/2020 10:30:00 AM

Lab ID: 2005437-003

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 3:41:09 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 3:41:09 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 3:41:09 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 3:41:09 AM	R68840
Surr: 1,2-Dichloroethane-d4	84.1	70-130		%Rec	1	5/13/2020 3:41:09 AM	R68840
Surr: Dibromofluoromethane	99.6	70-130		%Rec	1	5/13/2020 3:41:09 AM	R68840
Surr: Toluene-d8	98.8	70-130		%Rec	1	5/13/2020 3:41:09 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-16

Project: Lateral K-51 2010

Collection Date: 5/11/2020 11:10:00 AM

Lab ID: 2005437-004

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 4:09:55 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 4:09:55 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 4:09:55 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 4:09:55 AM	R68840
Surr: 1,2-Dichloroethane-d4	86.6	70-130		%Rec	1	5/13/2020 4:09:55 AM	R68840
Surr: Dibromofluoromethane	103	70-130		%Rec	1	5/13/2020 4:09:55 AM	R68840
Surr: Toluene-d8	101	70-130		%Rec	1	5/13/2020 4:09:55 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-14

Project: Lateral K-51 2010

Collection Date: 5/11/2020 11:45:00 AM

Lab ID: 2005437-005

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 4:38:23 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 4:38:23 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 4:38:23 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 4:38:23 AM	R68840
Surr: 1,2-Dichloroethane-d4	90.2	70-130		%Rec	1	5/13/2020 4:38:23 AM	R68840
Surr: Dibromofluoromethane	101	70-130		%Rec	1	5/13/2020 4:38:23 AM	R68840
Surr: Toluene-d8	100	70-130		%Rec	1	5/13/2020 4:38:23 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-20

Project: Lateral K-51 2010

Collection Date: 5/11/2020 12:20:00 PM

Lab ID: 2005437-006

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	1.0		µg/L	1	5/13/2020 5:06:59 AM	R68840
Toluene	ND	1.0		µg/L	1	5/13/2020 5:06:59 AM	R68840
Ethylbenzene	ND	1.0		µg/L	1	5/13/2020 5:06:59 AM	R68840
Xylenes, Total	ND	1.5		µg/L	1	5/13/2020 5:06:59 AM	R68840
Surr: 1,2-Dichloroethane-d4	85.9	70-130		%Rec	1	5/13/2020 5:06:59 AM	R68840
Surr: Dibromofluoromethane	99.7	70-130		%Rec	1	5/13/2020 5:06:59 AM	R68840
Surr: Toluene-d8	101	70-130		%Rec	1	5/13/2020 5:06:59 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2005437

Date Reported: 5/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-19

Project: Lateral K-51 2010

Collection Date: 5/11/2020 12:55:00 PM

Lab ID: 2005437-007

Matrix: AQUEOUS

Received Date: 5/12/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	97	5.0		µg/L	5	5/13/2020 5:35:34 AM	R68840
Toluene	ND	5.0		µg/L	5	5/13/2020 5:35:34 AM	R68840
Ethylbenzene	54	5.0		µg/L	5	5/13/2020 5:35:34 AM	R68840
Xylenes, Total	15	7.5		µg/L	5	5/13/2020 5:35:34 AM	R68840
Surr: 1,2-Dichloroethane-d4	87.2	70-130		%Rec	5	5/13/2020 5:35:34 AM	R68840
Surr: Dibromofluoromethane	99.0	70-130		%Rec	5	5/13/2020 5:35:34 AM	R68840
Surr: Toluene-d8	100	70-130		%Rec	5	5/13/2020 5:35:34 AM	R68840

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2005437

13-May-20

**Client:** Ensolum  
**Project:** Lateral K-51 2010

Sample ID: <b>mb1</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382809</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.6		10.00		86.2	70	130			
Surr: 4-Bromofluorobenzene	9.1		10.00		91.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R68840</b>	RunNo: <b>68840</b>								
Prep Date:	Analysis Date: <b>5/12/2020</b>	SeqNo: <b>2382810</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	100	70	130			
Toluene	21	1.0	20.00	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	8.6		10.00		85.8	70	130			
Surr: 4-Bromofluorobenzene	9.2		10.00		92.4	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	9.8		10.00		97.6	70	130			

**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 Quantitative 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  
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: **2005437**

RcptNo: 1

Received By: **Desiree Dominguez** 5/12/2020 8:10:00 AMCompleted By: **Desiree Dominguez** 5/12/2020 8:25:58 AMReviewed By: **JR 5/12/20**

*DD*  
*DD*

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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: **EM 5/12/20**

### 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: \_\_\_\_\_

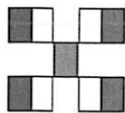
16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record									
Client: <u>Ensolium, LLC</u>		<div style="display: flex; justify-content: space-between;"> <span>Turn-Around Time:</span> <span> <input checked="" type="checkbox"/> Standard    <input type="checkbox"/> Rush         </span> </div>							
Mailing Address: <u>606 S. Rio Grande Street</u>		Project Name: <u>Lateral K-S1 (2010)</u>							
<u>Aztec, NM 87410</u>		Project #: <u>05A1226010</u>							
Phone #: _____		Project Manager: <u>K. Summers</u>							
email or Fax#: <u>Ksummers@ensolium.com</u>		Sampler: <u>C. Daniels</u> On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No							
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		# of Coolers: <u>1</u> Cooler Temp (including CF): <u>1.7 - 0.0 = 1.7 (°C)</u>							
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other _____		HEAL No. <u>2005437</u> # of Coolers: <u>1</u>							
<input checked="" type="checkbox"/> EDD (Type) _____ <input type="checkbox"/> Level 4 (Full Validation)		HEAL No. <u>2005437</u> # of Coolers: <u>1</u>							
Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.			
5/11/20	9:20	W	MW-13	3x4DmL VOA	HgCl <sub>2</sub>	-001			
5/11/20	9:55	W	MW-17	3x4DmL VOA	HgCl <sub>2</sub>	-002			
5/11/20	10:30	W	MW-3	3x4DmL VOA	HgCl <sub>2</sub>	-003			
5/11/20	11:10	W	MW-16	3x4DmL VOA	HgCl <sub>2</sub>	-004			
5/11/20	11:45	W	MW-14	3x4DmL VOA	HgCl <sub>2</sub>	-005			
5/11/20	12:20	W	MW-20	3x4DmL VOA	HgCl <sub>2</sub>	-006			
5/11/20	12:55	W	MW-19	3x4DmL VOA	HgCl <sub>2</sub>	-007			
Date:	Time:	Relinquished by:		Via:		Date	Time	F	
5/11/20	17:55			JMT Lab		5/11/2020	17:55		
Date:	Time:	Relinquished by:		Via:		Date	Time	F	
5/11/2020	18:29			courier		5/12/20	8:10		

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

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

Remarks:

# Bill to Ensolu





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

November 24, 2020

Kyle Summers

Ensolum

606 S Rio Grande Ste A

Aztec, NM 87410

TEL: (903) 821-5603

FAX:

RE: Lateral K 51 2010

OrderNo.: 2011713

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 12 sample(s) on 11/13/2020 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](http://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,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-4

Project: Lateral K 51 2010

Collection Date: 11/11/2020 9:55:00 AM

Lab ID: 2011713-001

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 5:52:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 5:52:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 5:52:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 5:52:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	11/21/2020 5:52:00 PM	R73531
Surr: Dibromofluoromethane	101	70-130		%Rec	1	11/21/2020 5:52:00 PM	R73531
Surr: Toluene-d8	92.8	70-130		%Rec	1	11/21/2020 5:52:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 1 of 14

## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-11

Project: Lateral K 51 2010

Collection Date: 11/11/2020 10:30:00 AM

Lab ID: 2011713-002

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 7:04:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 7:04:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 7:04:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 7:04:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	11/21/2020 7:04:00 PM	R73531
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/21/2020 7:04:00 PM	R73531
Surr: Toluene-d8	96.4	70-130		%Rec	1	11/21/2020 7:04:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-12

Project: Lateral K 51 2010

Collection Date: 11/11/2020 11:05:00 AM

Lab ID: 2011713-003

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 7:28:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 7:28:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 7:28:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 7:28:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	11/21/2020 7:28:00 PM	R73531
Surr: Dibromofluoromethane	104	70-130		%Rec	1	11/21/2020 7:28:00 PM	R73531
Surr: Toluene-d8	96.5	70-130		%Rec	1	11/21/2020 7:28:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-1

Project: Lateral K 51 2010

Collection Date: 11/11/2020 11:40:00 AM

Lab ID: 2011713-004

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 7:51:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 7:51:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 7:51:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 7:51:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	11/21/2020 7:51:00 PM	R73531
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/21/2020 7:51:00 PM	R73531
Surr: Toluene-d8	95.5	70-130		%Rec	1	11/21/2020 7:51:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-2

Project: Lateral K 51 2010

Collection Date: 11/11/2020 12:15:00 PM

Lab ID: 2011713-005

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 8:15:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 8:15:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 8:15:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 8:15:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	11/21/2020 8:15:00 PM	R73531
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/21/2020 8:15:00 PM	R73531
Surr: Toluene-d8	95.8	70-130		%Rec	1	11/21/2020 8:15:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-3

Project: Lateral K 51 2010

Collection Date: 11/11/2020 12:50:00 PM

Lab ID: 2011713-006

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 8:39:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 8:39:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 8:39:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 8:39:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	11/21/2020 8:39:00 PM	R73531
Surr: Dibromofluoromethane	104	70-130		%Rec	1	11/21/2020 8:39:00 PM	R73531
Surr: Toluene-d8	95.0	70-130		%Rec	1	11/21/2020 8:39:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-13

Project: Lateral K 51 2010

Collection Date: 11/11/2020 1:15:00 PM

Lab ID: 2011713-007

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 9:03:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 9:03:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 9:03:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 9:03:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	11/21/2020 9:03:00 PM	R73531
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/21/2020 9:03:00 PM	R73531
Surr: Toluene-d8	95.3	70-130		%Rec	1	11/21/2020 9:03:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-17

Project: Lateral K 51 2010

Collection Date: 11/11/2020 1:45:00 PM

Lab ID: 2011713-008

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 9:27:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 9:27:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 9:27:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 9:27:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	11/21/2020 9:27:00 PM	R73531
Surr: Dibromofluoromethane	103	70-130		%Rec	1	11/21/2020 9:27:00 PM	R73531
Surr: Toluene-d8	95.4	70-130		%Rec	1	11/21/2020 9:27:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Page 8 of 14



## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-16

Project: Lateral K 51 2010

Collection Date: 11/12/2020 8:50:00 AM

Lab ID: 2011713-009

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 9:51:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 9:51:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 9:51:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 9:51:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	11/21/2020 9:51:00 PM	R73531
Surr: Dibromofluoromethane	104	70-130		%Rec	1	11/21/2020 9:51:00 PM	R73531
Surr: Toluene-d8	96.0	70-130		%Rec	1	11/21/2020 9:51:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-14

Project: Lateral K 51 2010

Collection Date: 11/12/2020 9:35:00 AM

Lab ID: 2011713-010

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 10:15:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 10:15:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 10:15:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 10:15:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	11/21/2020 10:15:00 PM	R73531
Surr: Dibromofluoromethane	102	70-130		%Rec	1	11/21/2020 10:15:00 PM	R73531
Surr: Toluene-d8	95.5	70-130		%Rec	1	11/21/2020 10:15:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-20

Project: Lateral K 51 2010

Collection Date: 11/12/2020 10:10:00 AM

Lab ID: 2011713-011

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	ND	1.0		µg/L	1	11/21/2020 10:39:00 PM	R73531
Toluene	ND	1.0		µg/L	1	11/21/2020 10:39:00 PM	R73531
Ethylbenzene	ND	1.0		µg/L	1	11/21/2020 10:39:00 PM	R73531
Xylenes, Total	ND	1.5		µg/L	1	11/21/2020 10:39:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	11/21/2020 10:39:00 PM	R73531
Surr: Dibromofluoromethane	105	70-130		%Rec	1	11/21/2020 10:39:00 PM	R73531
Surr: Toluene-d8	95.6	70-130		%Rec	1	11/21/2020 10:39:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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## Analytical Report

Lab Order 2011713

Date Reported: 11/24/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Ensolum

Client Sample ID: MW-19

Project: Lateral K 51 2010

Collection Date: 11/12/2020 10:50:00 AM

Lab ID: 2011713-012

Matrix: AQUEOUS

Received Date: 11/13/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8260: VOLATILES SHORT LIST</b>							Analyst: <b>CCM</b>
Benzene	240	10		µg/L	20	11/22/2020 1:28:00 PM	R73539
Toluene	ND	2.0		µg/L	2	11/21/2020 11:03:00 PM	R73531
Ethylbenzene	80	2.0		µg/L	2	11/21/2020 11:03:00 PM	R73531
Xylenes, Total	50	3.0		µg/L	2	11/21/2020 11:03:00 PM	R73531
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	2	11/21/2020 11:03:00 PM	R73531
Surr: Dibromofluoromethane	101	70-130		%Rec	2	11/21/2020 11:03:00 PM	R73531
Surr: Toluene-d8	101	70-130		%Rec	2	11/21/2020 11:03:00 PM	R73531

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011713

24-Nov-20

**Client:** Ensolum  
**Project:** Lateral K 51 2010

Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>LCSW</b>	Batch ID: <b>R73531</b>		RunNo: <b>73531</b>							
Prep Date:	Analysis Date: <b>11/21/2020</b>		SeqNo: <b>2590331</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	97.8	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.2	70	130			
Surr: Dibromofluoromethane	10		10.00		103	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>PBW</b>	Batch ID: <b>R73531</b>		RunNo: <b>73531</b>							
Prep Date:	Analysis Date: <b>11/21/2020</b>		SeqNo: <b>2590332</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		104	70	130			
Surr: Toluene-d8	9.7		10.00		97.4	70	130			

Sample ID: <b>2011713-001ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>MW-4</b>	Batch ID: <b>R73531</b>		RunNo: <b>73531</b>							
Prep Date:	Analysis Date: <b>11/21/2020</b>		SeqNo: <b>2590334</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	70	130			
Toluene	18	1.0	20.00	0	88.7	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: <b>2011713-001amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8260: Volatiles Short List</b>							
Client ID: <b>MW-4</b>	Batch ID: <b>R73531</b>		RunNo: <b>73531</b>							
Prep Date:	Analysis Date: <b>11/21/2020</b>		SeqNo: <b>2590335</b>		Units: <b>µg/L</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.9	70	130	1.98	20	
Toluene	18	1.0	20.00	0	91.9	70	130	3.58	20	

**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 Quantitative 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#: 2011713

24-Nov-20

**Client:** Ensolum  
**Project:** Lateral K 51 2010

Sample ID: <b>2011713-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>MW-4</b>	Batch ID: <b>R73531</b>	RunNo: <b>73531</b>								
Prep Date:	Analysis Date: <b>11/21/2020</b>	SeqNo: <b>2590335</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		103	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.7		10.00		97.0	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		102	70	130	0	0	
Surr: Toluene-d8	9.6		10.00		96.2	70	130	0	0	

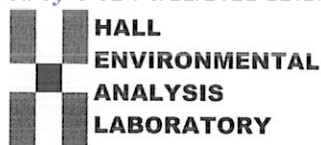
Sample ID: <b>100ng lcs</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>LCSW</b>	Batch ID: <b>R73539</b>	RunNo: <b>73539</b>								
Prep Date:	Analysis Date: <b>11/22/2020</b>	SeqNo: <b>2590354</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.6		10.00		95.8	70	130			

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260: Volatiles Short List</b>								
Client ID: <b>PBW</b>	Batch ID: <b>R73539</b>	RunNo: <b>73539</b>								
Prep Date:	Analysis Date: <b>11/22/2020</b>	SeqNo: <b>2590355</b>	Units: <b>µg/L</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		105	70	130			
Surr: Toluene-d8	9.5		10.00		94.9	70	130			

**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 Quantitative 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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: ENSOLUM

Work Order Number: 2011713

RcptNo: 1

Received By: Desiree Dominguez 11/13/2020 8:00:00 AM

Completed By: Erin Melendrez 11/13/2020 8:56:01 AM

Reviewed By: SGL 11/13/20

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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 11/13/20

### 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	1.7	Good				





**District I**

1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**

811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**

1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**

1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS

Action 41355

**CONDITIONS**

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID:
	241602
	Action Number: 41355
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

**CONDITIONS**

Created By	Condition	Condition Date
nvelez	1. Follow recommendations stated within 2020 Groundwater Monitoring Report. a. 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 b. conduct additional site-specific aquifer characterization c. complete installation of 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) d. repair or replace monitoring well MW-18 as described in the Stage 1 Abatement Plan (Ensolum, revised May 22, 2019) e. prepare and submit a Stage 2 Abatement Plan after the Stage 1 Abatement Plan is deemed administratively complete	12/29/2021