APACHE CORPORATION

PRE-HEARING EXHIBITS

PART 3

EXHIBITS:

A-6, B, B-1, B-2, B-3, B-4, C, C-1, C-2

Collins, Karen, EMNRD

From: Billings, Bradford, EMNRD
Sent: Tuesday, September 1, 2020 3:10 PM
To: 'Mark Larson'
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

---

From: Mark Larson <Mark@laenvironmental.com>
Sent: Tuesday, September 1, 2020 10:48 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.
Thank you,
Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

APACHE EXHIBIT A-6

BARRETT W. **BOLE, P.G.**
Midland, TX · (432) 664-3065
jbbole@sbcglobal.net

Licensed Texas Geoscientist with over 30 years of various experience including oil and gas environmental and regulatory roles, commercial real estate due diligence, soil and groundwater remediation and spill response. As a Manager at Terracon, helped open and grow Midland office from a staff of three to over 25 employees, added geotechnical and materials testing divisions, and expanded into the Lubbock, TX market with the opening of a new office. Additionally proficient in the understanding of Health and Safety operations.

EXPERIENCE

JANUARY 1995 – JUNE 1995
JUNIOR GEOLOGIST, ECUADORIAN MINERALS CORP, SCOTTSDALE, AZ.
Assisted in the processing of mineral data associated with gold exploration and mining.

SEPTEMBER 1995 – FEBRUARY 1998
ENVIRONMENTAL TECH/COORDINATOR, VALERO CORPORATION, HOUSTON, TX
Primary role was investigation of LPST facilities at over 100 Diamond Shamrock gasoline stations in the greater Houston Texas Region. Gained knowledge of fueling systems.

FEBRUARY 1998 – NOVEMBER 2003
ENVIRONMENTAL COORDINATOR - PROJECT MANAGER, ENSR, TGE RESOURCES, AND ESA1
Refinery investigations and remediation, industrial and commercial environmental remediation (ENSR). Commercial due diligence including Phase I ESAs (nationally) and soil/groundwater investigations and remediation (TGE Resources). Remote project manager with Phase I ESA activities throughout the United States (ESA1).

NOVEMBER 2003 – SEPTEMBER 2012
SENIOR PROJECT MANAGER - OFFICE MANAGER, TERRACON, HOUSTON AND MIDLAND, TX
Promoted from Sr. Project Manager to Office Manager. Relocated from Houston to Midland in 2004. Work included Phase I ESAs, and soil and groundwater remediation as well as telecommunication NEPA projects throughout West Texas. Also managed geotechnical and construction materials departments as well as environmental in the role of Office Manager.

SEPTEMBER 2012 – PRESENT
ENVIRONMENTAL SPECIALIST, ENVIRONMENTAL SUPERVISOR, APACHE CORPORATION, MIDLAND, TX
Various duties supporting EH&S efforts in the Permian Basin. Responsible for the management of SPCC Plans, soil and groundwater remediation, due diligence on divestitures, facility audits, Tier 2 reporting, pipelines, and other duties, as needed. Managed up to three employees as well with associated duties.

EDUCATION

2003/2007
BS/MS - GEOLOGY, SUL ROSS STATE UNIVERSITY, ALPINE, TX

LICENSES/SKILLS ACCOMPLISHMENTS

- **Professional Geologist (State of Texas License Number 753)**
- **Eagle Scout (1988)**
- **USA Swimming Official (Stroke and Turn, Starter, Deck Referee) - expired**

APACHE EXHIBIT B

From: Bratcher, Michael, EMNRD
To: "Baker, Larry"; Bole, Barrett; mark@laenvironmental.com
Cc: Billings, Bradford, EMNRD; Nobui, Jennifer, EMNRD
Subject: FW: [EXTERNAL] FW: Further Delineation at EBDU 37
Date: Monday, October 3, 2022 3:46:00 PM
Attachments: Pages from Remediation Plan, 1RP-5636, Apache Corp, EBDU #37, October 29, 2019.pdf
Apache EBDU 37 monitor wells addition.pdf

Bruce,

Attached is the proposed approximate locations of the two additional ground water monitoring wells OCD has requested to be installed at this site. The proposed point east of TMW4 should be placed slightly more to the east, which would place it just off of this map. Please field screen soils for chloride levels during drilling ops at a minimum of 5' increments, with each 10' increment obtained for lab analysis of chloride levels. The boring locations proposed by Apache for additional delineation in the spill path, are approved. OCD requests at a minimum, a formal update on activities, not later than December 2, 2022. Current monitoring well activities are to be continued on the existing schedule.

Please advise if you have questions or wish to discuss.

Thank you,

Mike Bratcher ● Incident Supervisor
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave | Artesia, NM 88210
(575) 626-0857 | mike.bratcher@emnrd.nm.gov *NOTE NEW EMAIL ADDRESS*
http://www.emnrd.state.nm.us/OCD/

From: Baker, Larry <Larry.Baker@apachecorp.com>
Sent: Friday, September 16, 2022 11:39 AM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Subject: [EXTERNAL] FW: Further Delineation at EBDU 37

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Mr. Bratcher,

Attached is the proposal and request for advisement for well placement. Thanks and have a good day.

APACHE EXHIBIT B-1

BRUCE BAKER
ENVIRONMENTAL TECHNICIAN SR STAFF
direct 432-818-1654 | *Cell* 432-215-2284
APACHE CORPORATION
303 Veterans Airpark Lane
Midland, TX 79705
ApacheCorp.com | LinkedIn | Facebook | Twitter | StockTwits | YouTube

---

From: Baker, Larry
Sent: Monday, August 8, 2022 2:46 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Bole, Barrett <Barrett.Bole@apachecorp.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Further Delineation at EBDU 37

Gentleman,

As per our conversation Apache Corporation will conduct further delineation with depth at SP4, SP5, SP7, and SP8. Additional vertical delineation will be conducted at SP 14, SP 15 and SP 16. Attached is the sample map identifying the sample point areas. In regards to the installing two additional wells could OCD please advise us on the placement. Please let me know if you have any questions or wish to discuss. Thanks and have a good day.

BRUCE BAKER
ENVIRONMENTAL TECHNICIAN SR STAFF
direct 432-818-1654 | *Cell* 432-215-2284
APACHE CORPORATION
303 Veterans Airpark Lane
Midland, TX 79705
ApacheCorp.com | LinkedIn | Facebook | Twitter | StockTwits | YouTube

Page 6 of 733

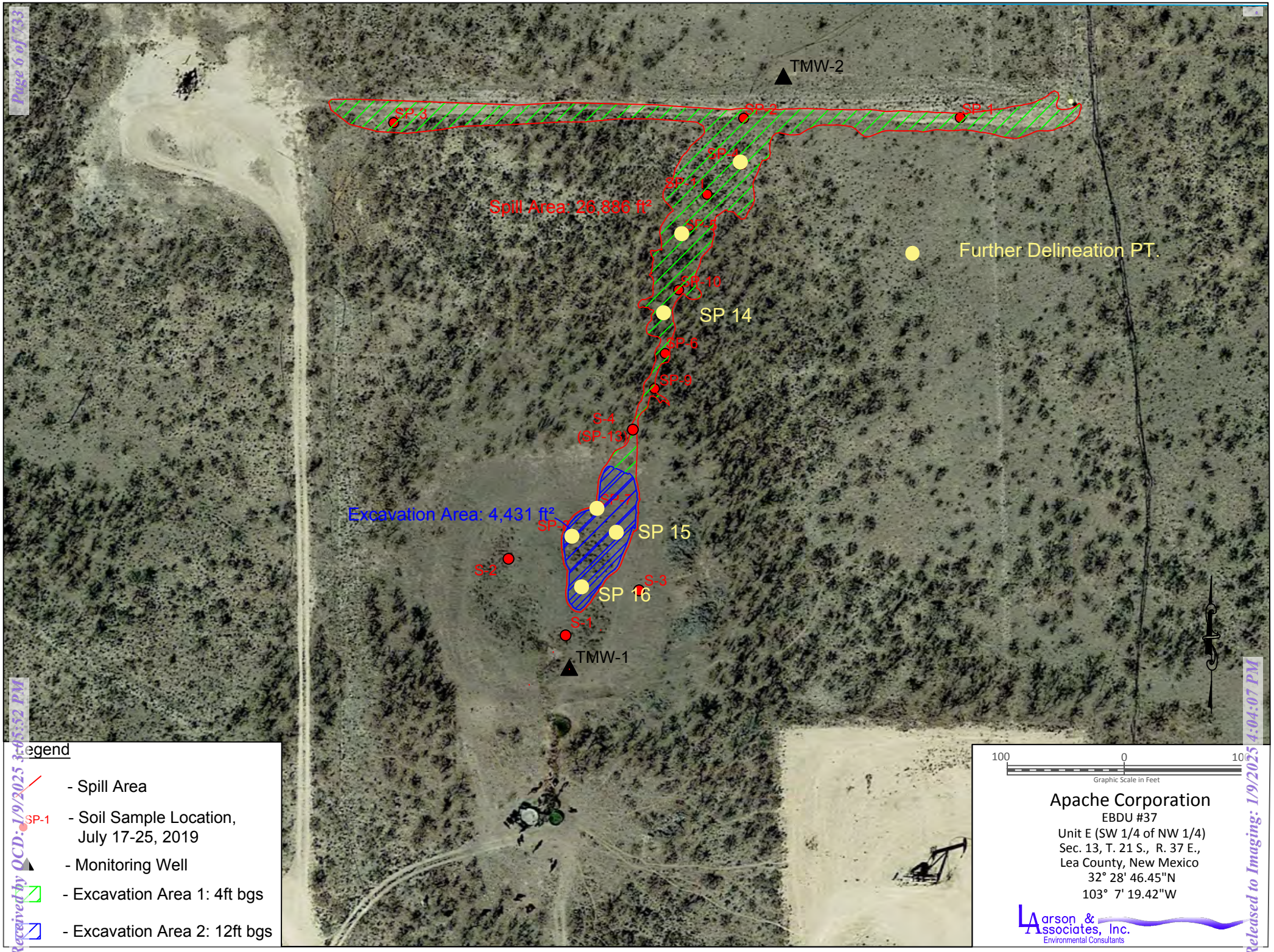


Figure 3 - Aerial Map Showing Excavation Areas

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Page 7 of 733

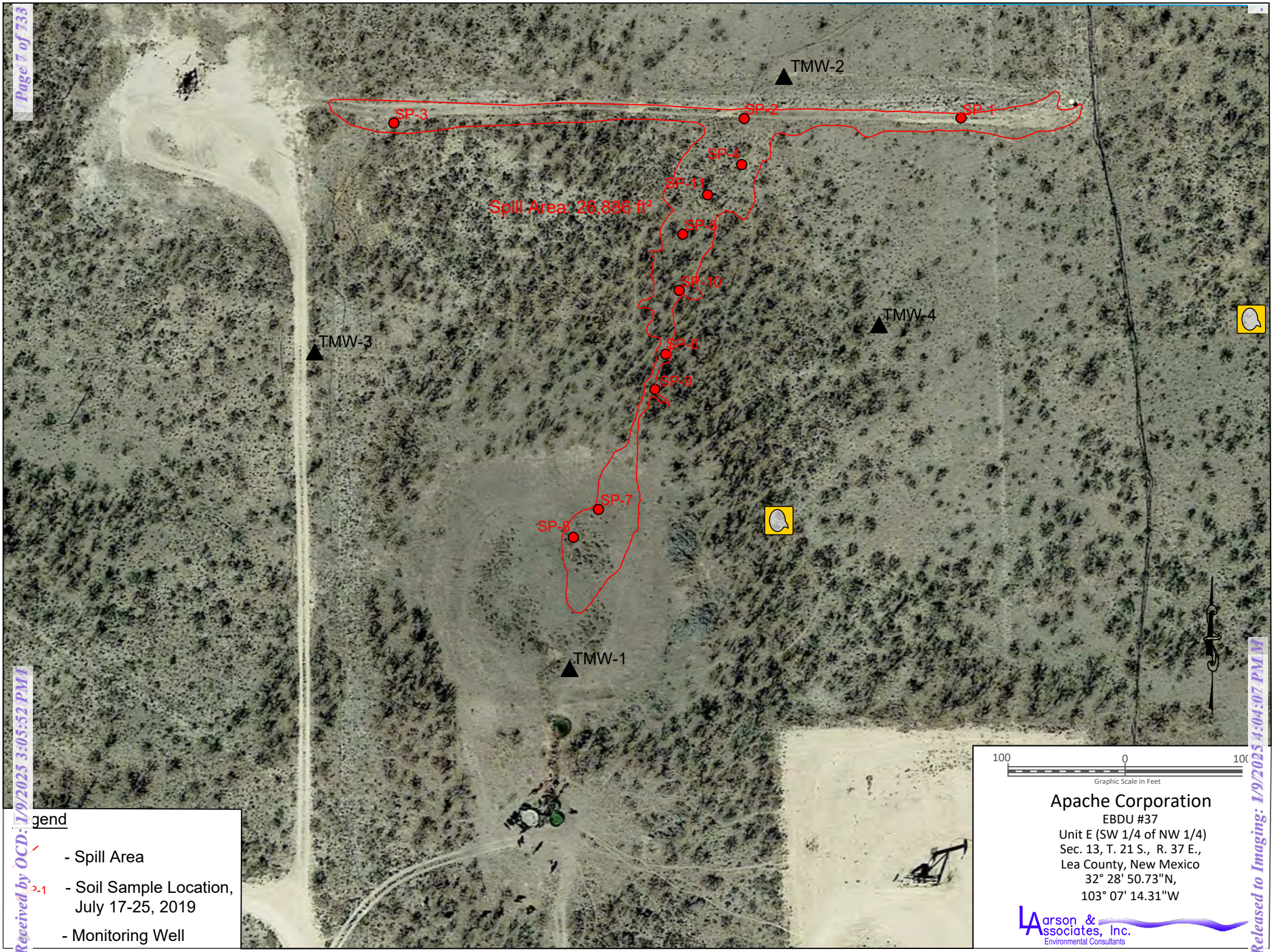


Figure 3 - Site Map Showing Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

March 27,

2024

Tracking Number: nDHR1922141227
2023 Fourth Quarter Groundwater Monitoring Report
East Blinebry Drinkard Unit (EBDU) #37
Lea County, New Mexico

Prepared for:

Apache

Apache Corporation
303 Veterans Airpark Ln
Midland, Texas 79705

Prepared by:

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld Street, Suite 202
Midland, Texas 79701
(432) 687-0901

Mark J. Larson
Certified Professional Geologist #10490

Daniel St. Germain
Staff Geologist

APACHE EXHIBIT B-2

This Page Intentionally Left Blank

Table of Contents

1.0 Executive Summary 1
2.0 Introduction 2
2.1 Background 2
2.2 Monitoring Well Installations 3
3.0 Groundwater Depth and Potentiometric Surface Elevation 3
4.0 Groundwater Samples and Analysis 3
4.1 Organic Analysis 4
4.2 Inorganic Analysis 4
5.0 Conclusions 5

Tables

Table 1 Monitor Well Construction and Gauging Summary
Table 2 Groundwater Sample Analytical Data Summary

Figures

Figure 1 Topographic Map
Figure 2 Aerial Map
Figure 3 Groundwater Potentiometric Map, December 20 and 21, 2023
Figure 4 Chloride Concentration in Groundwater Map, December 20 and 21, 2023
Figure 5 TDS Concentration in Groundwater Map, December 20 and 21, 2023

Appendices

Appendix A NMOCD Communications
Appendix B Initial C-141
Appendix C Boring Logs
Appendix D Laboratory Report
Appendix E Chloride Control Chart
Appendix F TDS Control Chart

1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this report on behalf of Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (NMOCD) District I in Hobbs and Santa Fe, New Mexico. This report presents the fourth quarter (October - December) 2023 groundwater monitoring results from twenty-four (24) monitoring wells (TMW-1 through TMW-24) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°.

The following groundwater monitoring activities occurred on December 20 and 21, 2023:

- Gauged depth to groundwater in twenty-four (24) monitoring wells (TMW-1 through TMW-24).
- Purged and collected groundwater samples from twenty-four (24) monitoring wells (TMW-1 through TMW-24).
- Collected groundwater samples from a windmill located south of the Site.
- Analyzed groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), chloride, and total dissolved solids (TDS).

The following observations are documented in this report:

- THE groundwater flow direction was from northeast to southwest at a gradient of about 0.0018 ft/ft, consistent to the flow direction and gradient observed during previous groundwater monitoring events.
- BTEX compounds were below the analytical method reporting limits (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards in all groundwater samples.
- Chloride was reported above the WQCC domestic water quality standard of 250 mg/L in groundwater samples from wells TMW-2 (264 mg/L), TMW-4 (598 mg/L), TWM-5 (2,320 mg/L), TWM-6 (1,570 mg/L), TWM-7 (1,770 mg/L), TMW-8 (709 mg/L), TMW-11 (350 mg/L), TMW-12 (463 mg/L), TMW-13 (1,730 mg/L), TMW-14 (2,500 mg/L), TMW-15 (2,120 mg/L), TMW-17 (5,850 mg/L), TMW-18 (2,050 mg/L), TMW-19 (927 mg/L), TMW-20 (287 mg/L), TMW-21 (262 mg/L), TMW-22 (270 mg/L), TMW-23 (895 mg/L), TMW-24 (271 mg/L), and the windmill (409 mg/L).
- TDS was reported above the WQCC domestic water quality standard of 1,000 mg/L in groundwater samples from wells TMW-2 (1,100 mg/L), TMW-4 (1,750 mg/L), TWM-5 (4,250 mg/L), TWM-6 (3,070 mg/L), TWM-7 (3,720 mg/L), TMW-8 (1,840 mg/L), TMW-11 (1,190 mg/L), TMW-12 (1,520 mg/L), TMW-13 (3,680 mg/L), TMW-14 (5,140 mg/L), TMW-15 (3,870 mg/L), TMW-17 (10,300 mg/L), TMW-18 (6,430 mg/L), TMW-19 (1,860 mg/L), TMW-23 (1,980 mg/L), TMW-24 (1,050 mg/L), and the windmill (1,010 mg/L).

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-24 and the windmill during 2024 with laboratory analysis of groundwater samples for BTEX, chloride, and TDS. Notice will be provided to NMOCD in Hobbs and Santa Fe, New Mexico, at least 7 working days prior to each groundwater monitoring event. NMOCD will be notified immediately upon receipt laboratory analysis with significant increase of analyte concentrations.

Released to Imaging: 1/9/2025 4:04:07 PM

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI), on behalf of Apache Corporation (Apache), has prepared this report for submittal to the New Mexico Oil Conservation Division (NMOCD) District I in Hobbs and Santa Fe, New Mexico. This report presents groundwater monitoring results for the 2023 fourth quarter (October through December) from monitoring wells (TMW-1 through TMW-24) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. Notification of the groundwater sampling event was submitted to the NMOCD on December 11, 2023. The geodetic position is North 32.479569° and West -103.122061°. Figure 1 presents a topographic map. Figure 2 presents an aerial map. Appendix A presents NMOCD communications.

2.1 Background

On July 4, 2019, a spill originated from a flowline near a pipeline junction located about 720 feet east from EBDU Well #37. Produced fluids (oil and water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown. The spill is designated as a major release due to the unknown volume of the release. The spill covered an area measuring about 31,320 square feet or about 0.72 acres. The initial C-141 was submitted on July 26, 2019, and was assigned remediation permit number 1RP-5636. Appendix B presents the initial C-141.

On October 29, 2019, Apache submitted to the NMOCD a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico, October 29, 2019". On December 23, 2019, NMOCD approved an addendum to the remediation plan based on a telephone call on December 20, 2019, with the following conditions:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered.
- Apache will install two (2) additional monitoring wells at locations designated by NMOCD about 200 feet east from the low-lying area (TMW-5) and about 275 feet east from TWM-4. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs.
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient.
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019.
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20-mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil.
- Seed Area 1 and Area 2 following remediation according to landowner requirement.
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Appendix A presents the NMOCD communications.

2.2 Monitoring Well Installations

On September 29, 2019, Scarborough Drilling Inc. (SDI), under LAI supervision, installed four (4) monitoring wells (TMW-1, TMW-2, TMW-3, and TMW-4) under permits issued by the State of New Mexico Office of the State Engineer (NMOSE). Monitoring wells TMW-3 and TMW-4 were repositioned to avoid removing thick vegetation and/or crossing underground pipelines. NMOCD approved the relocation of the monitoring wells on September 22, 2020. Monitoring well TMW-3 was repositioned about 100 feet west from its original location. Monitoring well TMW-4 was repositioned about 30 feet east from its original location. Two (2) monitoring wells (TMW-5 and TMW-6) were installed on November 28, 2022. Monitoring wells TMW-7 through TMW-10 were installed between June 12 and 14, 2023 in accordance with a plan approved by NMOCD. Between November 28, 2023, and December 12, 2023, monitoring wells TWM-11 through TMW-24 were installed by SDI, under the guidance of LAI personnel, based on an NMOCD approved plan. Appendix A presents NMOCD communications.

Monitoring wells TMW-1 through TMW-24 were drilled to depths between approximately 59.82 (TMW-3) and 85.88 feet bgs (TMW-24). The monitoring wells were completed with two (2) inch threaded schedule 40 PVC casing and approximately twenty (20) feet of 0.01-inch factory slotted screen. The screens were positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the well screens to about two (2) feet above the screens. The remaining annulus above the screens was filled to about 1-foot bgs with bentonite chips and hydrated with potable water. The wells are secured with locking steel covers. The monitor wells (TMW-1 through TMW-24) were surveyed by West Company, a State of New Mexico Licensed Professional Land Surveyor (LPS Number 23263) for geodetic position and elevation, including surface elevation and top of casing (TOC) elevation. Figure 2 presents the monitoring well locations. Appendix C presents the boring logs and monitoring wells completion records.

3.0 GROUNDWATER DEPTH AND POTENTIOMETRIC SURFACE ELEVATION

On December 20 and 21, 2023, depth to groundwater was gauged in monitoring wells TMW-1 through TMW-24 between 50.27 feet below top of casing (TOC) or 46.91 feet below ground surface (BGS) in monitoring well TMW-1 and, 68.86 feet TOC or 65.97 feet BGS in well TMW-22. The groundwater potentiometric surface elevation ranged from 3,365.57 feet above mean sea level (MSL) at TMW-12 (upgradient) to 3,362.33 feet above MSL at TMW-24 (downgradient). Groundwater flow was from northeast to southwest a gradient of 0.0018 ft/ft. No significant changes in groundwater elevation, groundwater flow direction, or gradient were observed during this monitoring period. Table 1 presents monitor well construction and gauging summary. Figure 3 presents the potentiometric map for December 20 and 21, 2023.

4.0 GROUNDWATER SAMPLES AND ANALYSIS

On December 20 and 21, 2023, LAI personnel collected groundwater samples from monitoring wells TMW-1 through TMW-24, and the windmill. Samples from the monitoring wells TMW-1 through TWM-3 and TMW-9 through TMW-12 were collected using the low stress or low flow method, according to EPA

protocol (EQASOP-GW4, Revision 4, September 19, 2017). The low stress or low flow method uses an environmental pump positioned near the middle of the water column where the well is pumped at a low rate until environmental parameters stabilize. Groundwater samples were collected from the discharge of the dedicated disposable Tygon® tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution potable water and laboratory grade detergent (Alconox®) and rinsed with distilled water. Samples collected from TWM-4 through TWM-8 and TWM-13 through TMW-24 were collected from dedicated disposable bailers that were discarded after bailing three (3) casing volumes of groundwater from the wells and collecting groundwater samples. Samples from the windmill were collected from the end of the discharge pipe about 6-feet from the well.

The samples were transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain-of-custody to Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Midland, Texas. Duplicate samples were collected from TMW-2 and TMW-17 for laboratory quality assurance and quality control (QA/QC). Xenco analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method 8260D, chloride by EPA Method 300, and total dissolved solids (TDS) by Method SM 2540C. Table 2 presents the laboratory analytical summary. Appendix D presents the laboratory report.

4.1 Organic Analysis

Xenco reported BTEX concentrations below the laboratory analytical reporting limits (RLs) and New Mexico WQCC human health standards in groundwater samples from TMW-1 through TMW-24 and the windmill. The results are consistent with previous groundwater monitoring events.

4.2 Inorganic Analysis

Chloride concentrations were above the WQCC domestic water quality standard of 250 mg/L in groundwater samples from monitoring wells TMW-2 (264 mg/L), TMW-4 (598 mg/L), TWM-5 (2,320 mg/L), TWM-6 (1,570 mg/L), TWM-7 (1,770 mg/L), TMW-8 (709 mg/L), TMW-11 (350 mg/L), TMW-12 (463 mg/L), TMW-13 (1,730 mg/L), TMW-14 (2,500 mg/L), TMW-15 (2,120 mg/L), TMW-17 (5,850 mg/L), TMW-18 (2,050 mg/L), TMW-19 (927 mg/L), TMW-20 (287 mg/L), TMW-21 (262 mg/L), TMW-22 (270 mg/L), TMW-23 (895 mg/L), TMW-24 (271 mg/L) and the windmill (409 mg/L). Chloride concentrations were below the WQCC domestic water quality standard in groundwater samples collected from monitoring wells TMW-1 (156 mg/L), TMW-3 (242 mg/L), TMW-9 (37.3 mg/L), TMW-10 (114 mg/L), TMW-16 (85.5 mg/L). The highest chloride value 5,850 mg/L was reported from monitoring well TMW-TMW-17 located southeast and cross-gradient from the release.

The QA/QC sample Dup-1, collected from TMW-17, on December 20, 2023, reported a chloride concentration of 5,830 mg/L, a 0.3 percent change of the initial chloride value of 5,850 mg/L. QA/QC sample Dup-2, collected from TMW-2 on December 21, 2023, had chloride concentration of 265 mg/L, or 0.4 percent difference above the initial chloride value of 264 mg/L. No data quality exceptions were noted in Xenco case narratives. Figure 4 presents the chloride isopleth map for December 20 and 21, 2023. Appendix E presents the chloride control chart.

Released to Imaging: 1/9/2025 4:04:07 PM

TDS concentrations were above the WQCC domestic water quality standard of 1,000 mg/L in groundwater samples collected from wells TMW-2 (1,100 mg/L), TMW-3 (1,020 mg/L), TMW-4 (1,750 mg/L), TMW-5 (4,250 mg/L), TMW-6 (3,070 mg/L), TMW-7 (3,720 mg/L), TMW-8 (1,840 mg/L), TMW-11 (1,190 mg/L), TMW-12 (1,520 mg/L), TMW-13 (3,680 mg/L), TMW-14 (5,140 mg/L), TMW-15 (3,870 mg/L), TMW-17 (10,300 mg/L), TMW-18 (6,430 mg/L), TMW-19 (1,860 mg/L), TMW-23 (1,980 mg/L), TMW-24 (1,050 mg/L), and the windmill (1,010 mg/L). TDS concentrations were below the WQCC domestic water quality standard in groundwater samples collected from monitoring wells TMW-1 (662 mg/L), TMW-9 (404 mg/L), TMW-10 (666 mg/L), TMW-16 (495 mg/L), TMW-20 (927 mg/L), TMW-21 (885 mg/L), and TMW-22 (939 mg/L). Similar to chloride, the highest TDS value 10,360 mg/L was reported from monitoring well TMW-17 located southeast and cross-gradient from the release.

The QA/QC sample Dup-1, collected from TMW-17 on December 20, 2023, reported a TDS concentration of 10,300 mg/L, or a 0 percent change of the initial TDS value of 10,300 mg/L. QA/QC sample Dup-2, collected from TMW-2 on December 21, 2023, reported TDS at 1,010 mg/L, or 8.2 percent below the initial TDS value of 1,100 mg/L. No data quality exceptions were noted in Xenco case narratives. Figure 5 presents the TDS isopleth map for December 20 and 21, 2023. Appendix F presents the TDS control chart.

5.0 CONCLUSIONS

The following observations are made in this report:

- Groundwater flow was from northeast to southwest at a gradient of about 0.0018 ft/ft., similar to previous groundwater monitoring events.
- BTEX compounds were below the analytical method reporting limits (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples collected on December 20 and 21, 2023.
- Chloride was reported above the WQCC domestic water quality standard of 250 mg/L in groundwater samples from wells TMW-2 (264 mg/L), TMW-4 (598 mg/L), TWM-5 (2,320 mg/L), TWM-6 (1,570 mg/L), TWM-7 (1,770 mg/L), TMW-8 (709 mg/L), TMW-11 (350 mg/L), TMW-12 (463 mg/L), TMW-13 (1,730 mg/L), TMW-14 (2,500 mg/L), TMW-15 (2,120 mg/L), TMW-17 (5,850 mg/L), TMW-18 (2,050 mg/L), TMW-19 (927 mg/L), TMW-20 (287 mg/L), TMW-21 (262 mg/L), TMW-22 (270 mg/L), TMW-23 (895 mg/L), TMW-24 (271 mg/L), and the windmill (409 mg/L).
- TDS was reported above WQCC domestic water standard of 1,000 mg/L in monitoring wells TMW-2 (1,100 mg/L), TMW-3 (1,020 mg/L), TMW-4 (1,750 mg/L), TMW-5 (4,250 mg/L), TMW-6 (3,070 mg/L), TMW-7 (3,720 mg/L), TMW-8 (1,840 mg/L), TMW-11 (1,190 mg/L), TMW-12 (1,520 mg/L), TMW-13 (3,680 mg/L), TMW-14 (5,140 mg/L), TMW-15 (3,870 mg/L), TMW-17 (10,300 mg/L), TMW-18 (6,430 mg/L), TMW-19 (1,860 mg/L), TMW-23 (1,980 mg/L), TMW-24 (1,050 mg/L), and the windmill (1,010 mg/L).

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-10 and the windmill during 2024 with laboratory analysis of groundwater samples for BTEX, chloride and TDS. Notice will be provided to NMOCD in Hobbs and Santa Fe, New Mexico at least seven (7) working days prior to each groundwater monitoring event. The NMOCD will be notified immediately upon receipt of laboratory analysis with significant increase of analyte concentrations.

Released to Imaging: 1/9/2025 4:04:07 PM

Tables

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-1	9/19/2019	74.36	71.00	2	3,411.21	42.32 - 61.97	3.36	3,414.57	09/23/2019	46.18	42.82	28.18	3,368.39
									12/26/2019	48.90	45.54	26.27	3,365.67
									09/30/2020	49.31	45.95	25.05	3,365.26
									12/07/2020	49.42	46.06	24.94	3,365.15
									03/11/2021	49.41	46.05	24.95	3,365.16
									06/10/2021	49.67	46.31	24.69	3,364.90
									10/11/2021	50.90	47.54	23.46	3,363.67
									12/22/2021	49.95	46.59	24.41	3,364.62
									03/01/2022	49.92	46.56	24.44	3,364.65
									05/23/2022	50.25	46.89	24.11	3,364.32
									08/16/2022	50.64	47.28	23.72	3,363.93
									12/15/2022	50.18	46.82	24.18	3,364.39
									03/14/2023	50.16	46.80	24.20	3,364.41
									06/22/2023	47.09	43.73	27.27	3,367.48
									09/06/2023	50.31	46.95	24.05	3,364.26
									12/21/2023	50.27	46.91	24.09	3,364.30
TMW-2	9/19/2019	82.86	80.00	2	3,421.30	47.50 - 67.17	2.86	3,424.16	09/23/2019	55.80	52.94	27.06	3,368.36
									12/26/2019	57.50	54.64	25.36	3,366.66
									09/30/2020	58.01	55.15	24.85	3,366.15
									12/07/2020	58.08	55.22	24.78	3,366.08
									03/11/2021	58.00	55.14	24.86	3,366.16
									06/10/2021	58.12	55.26	24.74	3,366.04
									10/11/2021	58.54	55.68	24.32	3,365.62
									12/22/2021	58.50	55.64	24.36	3,365.66
									03/01/2022	58.48	55.62	24.38	3,365.68
									05/23/2022	58.62	55.76	24.24	3,365.54
									08/16/2022	58.98	56.12	23.88	3,365.18
									12/15/2022	58.76	55.90	24.10	3,365.40
									03/14/2023	58.70	55.84	24.16	3,365.46
									06/22/2023	58.27	55.41	24.59	3,365.89
									09/06/2023	59.05	56.19	23.81	3,365.11
									12/21/2023	58.95	56.09	23.91	3,365.21
TWM-3	9/29/2020	71.29	68.41	2	3,420.33	49.96 - 69.76	2.88	3,423.21	09/23/2019	--	--	--	--
									12/26/2020	--	--	--	--

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									09/30/2020	57.62	54.74	13.67	3,365.59
									12/07/2020	57.68	54.80	13.61	3,365.53
									03/11/2021	57.59	54.71	13.70	3,365.62
									06/10/2021	57.90	55.02	13.39	3,365.31
									10/11/2021	58.31	55.43	12.98	3,364.90
									12/22/2021	58.18	55.30	13.11	3,365.03
									03/01/2022	58.14	55.26	13.15	3,365.07
									05/23/2022	58.41	55.53	12.88	3,364.80
									08/16/2022	58.87	55.99	12.42	3,364.34
									12/15/2022	58.44	55.56	12.85	3,364.77
									03/14/2023	58.36	55.48	12.93	3,364.85
									06/22/2023	57.53	54.65	13.76	3,365.68
									09/06/2023	58.85	55.97	12.44	3,364.36
									12/21/2023	58.61	55.73	12.68	3,364.60
TMW-4	9/29/2020	73.25	70.09	2	3,420.03	49.96 - 69.76	3.16	3,423.19	09/23/2019	--	--	--	--
									12/26/2019	--	--	--	--
									09/30/2020	57.39	54.23	15.86	3,365.80
									12/07/2020	57.45	54.29	15.80	3,365.74
									03/11/2021	57.40	54.24	15.85	3,365.79
									06/10/2021	57.60	54.44	15.65	3,365.59
									10/11/2021	57.99	54.83	15.26	3,365.20
									12/22/2021	57.90	54.74	15.35	3,365.29
									03/01/2022	57.87	54.71	15.38	3,365.32
									03/29/2022	57.89	54.73	15.36	3,365.30
									05/23/2022	58.05	54.89	15.20	3,365.14
									08/16/2022	58.48	55.32	14.77	3,364.71
									12/15/2022	58.15	54.99	15.10	3,365.04
									03/14/2023	58.07	54.91	15.18	3,365.12

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									06/22/2023	57.28	54.12	15.97	3,365.91
									09/06/2023	58.45	55.29	14.80	3,364.74
									12/20/2023	58.31	55.15	14.94	3,364.88
TMW-5	11/28/2022	78.59	75.50	2	3,418.91	54.37 - 74.32	2.95	3,421.86	12/15/2022	57.91	54.96	20.68	3,363.95
									03/14/2023	57.27	54.32	21.32	3,364.59
									06/22/2023	55.63	52.68	22.96	3,366.23
									09/06/2023	57.63	54.68	20.96	3,364.23
									12/20/2023	57.49	54.54	21.10	3,364.37
TMW-6	11/28/2022	72.13	70.00	2	3,424.13	54.37 - 74.32	2.42	3,426.55	12/15/2022	62.17	59.75	9.96	3,364.38
									03/14/2023	62.08	59.66	10.05	3,364.47
									06/22/2023	61.41	58.99	10.72	3,365.14
									09/06/2023	61.95	59.53	10.18	3,364.60
									12/20/2023	61.88	59.46	10.25	3,364.67
TMW-7	6/13/2023	83.85	80.99	2	3,423.07	61.29 - 80.78	2.86	3,425.93	06/19/2023	60.35	57.49	23.50	3,365.58
									06/22/2023	63.34	60.48	20.51	3,362.59
									09/06/2023	60.98	58.12	22.87	3,364.95
									12/20/2023	60.91	58.05	22.94	3,365.02
TMW-8	6/12/2023	76.55	73.75	2	3,417.28	53.83 - 73.74	2.80	3,420.08	06/20/2023	54.04	51.24	22.51	3,366.04
									06/22/2023	54.02	54.00	22.53	3,366.06
									09/06/2023	55.39	52.59	21.16	3,364.69
									12/20/2023	55.23	52.43	21.32	3,364.85
TMW-9	6/13/2023	71.90	69.03	2	3,414.62	49.41 - 68.72	2.87	3,417.49	06/21/2023	51.11	48.24	20.79	3,366.38
									06/22/2023	51.14	48.27	20.76	3,366.35
									09/06/2023	53.66	50.79	18.24	3,363.83
									12/21/2023	53.55	50.68	18.35	3,363.94
TMW-10	6/14/2023	72.76	69.81	2	3,415.26	49.68 - 68.99	2.95	3,418.21	06/20/2023	51.57	48.62	21.19	3,366.64
									06/22/2023	51.61	48.66	21.15	3,366.60

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									09/06/2023 12/21/2023	54.21 54.12	51.26 51.17	18.55 18.64	3,364.00 3,364.09
TMW-11	11/29/2023	76.75	73.95	2	3,421.56	53.30 - 73.27	2.80	3,424.35	12/21/2023	59.92	57.12	16.83	3,364.43
TMW-12	11/30/2023	85.73	82.81	2	3,424.30	60.16 - 82.13	2.92	3,427.22	12/21/2023	61.65	58.73	24.08	3,365.57
TMW-13	12/4/2023	86.67	83.90	2	3,426.21	63.24 - 83.21	2.77	3,428.98	12/20/2023	63.75	60.98	22.92	3,365.23
TMW-14	12/1/2023	88.64	85.61	2	3,426.78	64.96 - 84.93	2.76	3,429.54	12/20/2023	65.02	62.26	23.62	3,364.52
TMW-15	11/30/2023	83.14	79.62	2	3,423.18	58.97 - 78.94	2.79	3,425.97	12/20/2023	61.79	59.00	21.35	3,364.18
TMW-16	11/29/2023	84.82	81.79	2	3,420.73	59.14 - 81.11	2.92	3,423.65	12/20/2023	60.19	57.27	24.63	3,363.46
TMW-17	11/28/2023	84.68	81.46	2	3,422.52	60.81 - 80.78	3.16	3,425.68	12/20/2023	61.56	58.40	23.12	3,364.12
TMW-18	12/5/2023	88.57	85.05	2	3,422.29	64.57 - 84.51	3.32	3,425.61	12/20/2023	62.15	58.83	26.42	3,363.46
TMW-19	12/5/2023	83.50	80.31	2	3,420.79	59.66 - 79.63	2.99	3,423.78	12/20/2023	60.92	57.93	22.58	3,362.86
TMW-20	12/6/2023	77.50	74.52	2	3,426.46	53.90 - 73.87	2.88	3,429.34	12/20/2023	65.26	62.38	12.24	3,364.08
TMW-21	12/7/2023	74.22	71.80	2	3,429.87	51.15 - 71.12	2.33	3,432.20	12/20/2023	67.31	64.98	6.91	3,364.89
TMW-22	12/7/2023	73.01	70.02	2	3,431.29	49.37 - 69.34	2.89	3,434.17	12/20/2023	68.86	65.97	4.15	3,365.31
TMW-23	12/13/2023	72.34	69.35	2	3,421.28	48.69 - 68.66	2.95	3,424.23	12/20/2023	61.51	58.56	10.83	3,362.72
TMW-24	12/13/2023	63.02	59.98	2	3,418.54	39.33 - 59.30	3.20	3,421.74	12/20/2023	59.41	56.21	3.61	3,362.33

Notes:
Monitoring wells installed by Scarborough Drilling Inc., Lamesa, Texas, with 2-inch schedule 40 PVC casing and screen.
bgs: below ground surface

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)

TOC: top of casing
AMSL: above mean sea level

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To groundwater
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	***(feet)
Windmill	[1] 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	[2] 09/23/2019	--	--	--	--	--	--	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**259**	688	--
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**274**	730	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**287**	930	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**252**	745	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**255**	781	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**251**	800	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	246	751	--
	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	828	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	222	738	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	**1,190**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	198	508	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**401**	**1,130**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**276**	852	--
	[4] 09/07/2023	<0.00200	<0.00200	<0.00400	<0.00400	**350**	981	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**409**	**1,010**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**471**	**1,080**	--
TMW-1	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.90
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	49.41
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	49.67
	[3] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	17.5	358	50.90
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.3	391	49.95
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	13.2	343	49.92
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	26.0	369	50.25
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	50.3	404	50.64
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	21.4	216	50.18
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	41.9	358	50.16
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**275**	845	47.09
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**277**	830	50.31
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	156	662	50.27
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00404	136	551	50.16
TMW-2	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	**338**	**1,220**	55.80
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**307**	**1,170**	57.50
	[3] 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	**314**	**1,040**	58.01
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**298**	**1,050**	58.06
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**293**	**1,000**	58.00
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**267**	**1,050**	58.12
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**263**	**1,030**	58.54
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**284**	**1,270**	58.50
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**282**	**1,030**	58.48
	[4] 05/23/2022	<0.00200	<0.00200	<0.00400	<0.00400	**256**	**1,070**	58.62
	[4] 08/16/2022	<0.00200	<0.00200	<0.00400	<0.00400	239	940	58.98
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	195	985	58.76

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To groundwater
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*****(feet)**
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	211	**1,060**	58.70
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	248	**1,120**	58.27
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	**1,050**	59.05
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**264**	**1,100**	58.95
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	249	992	58.86
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	57.59
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	57.90
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	192	967	58.31
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	211	949	58.18
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	233	944	58.14
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	202	955	58.41
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	245	**1,100**	58.87
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	175	808	58.44
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	233	940	58.36
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	229	**1,020**	57.53
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	240	**1,010**	58.85
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	242	**1,020**	58.61
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	234	959	58.47
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	**1,020**	**2,040**	57.39
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**987**	**2,300**	57.45
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**834**	**1,960**	57.40
	[3] 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**745**	**1,990**	57.60
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**689**	**1,990**	57.99
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**735**	**2,180**	57.90
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**1,610**	**2,080**	57.87
	[4] 03/29/2022	<0.00200	<0.00200	<0.00200	**0.00700**	**547**	**1,930**	57.89
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	**522**	**1,930**	58.05
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**684**	**2,000**	58.48
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**486**	**1,940**	58.15
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**703**	**1,850**	58.07
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**673**	**1,900**	57.28
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**625**	**1,810**	58.45
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**598**	**1,750**	58.31
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**580**	**1,750**	58.19
TMW-5	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,170**	**4,950**	57.91
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,890**	**5,200**	57.27
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**2,790**	**5,380**	55.63
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,700**	**4,590**	57.63
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,320**	**4,250**	57.49
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,980**	**5,360**	57.35

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To groundwater
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*****(feet)**
TMW-6	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**941**	**3,160**	62.17
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,270**	**3,200**	62.08
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,550**	**3,260**	61.41
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,630**	**2,820**	61.95
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,570**	**3,070**	61.88
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,500**	**3,280**	61.79
TMW-7	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,770**	**3,980**	63.34
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,870**	**3,880**	60.98
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,770**	**3,720**	60.91
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,740**	**3,690**	60.81
TMW-8	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**974**	**2,410**	54.02
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,130**	**2,470**	55.39
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00200	**709**	**1,840**	55.23
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**655**	**1,830**	55.12
TMW-9	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	18.0	373	51.11
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	41.8	390	53.66
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	37.3	404	53.55
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	29.3	373	53.45
TMW-10	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	9.89	525	51.57
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	67.0	514	54.21
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	114.0	666	54.12
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	17.0	405	54.02
TMW-11	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**350**	**1,190**	59.92
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**318**	**1,090**	58.85
TMW-12	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**463**	**1,520**	61.65
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**448**	**1,390**	61.57
TMW-13	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,730**	**3,680**	63.75
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,690**	**3,480**	63.68
TMW-14	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,500**	**5,140**	65.02
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,810**	**2,820**	
TMW-15	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,120**	**3,870**	61.79
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,160**	**3,400**	
TMW-16	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	85.5	495	60.19
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	43.0	380	
TMW-17	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,850**	**10,300**	61.56
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**5,680**	**8,930**	

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To groundwater
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	***(feet)
TMW-18	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,050**	**6,430**	62.15
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**908**	**1,650**	
TMW-19	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**927**	**1,860**	60.92
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**553**	**1,070**	
TMW-20	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**287**	927	65.26
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**385**	937	
TMW-21	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**262**	885	67.31
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**310**	902	
TMW-22	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	939	68.86
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**342**	918	
TMW-23	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**895**	**1,980**	61.51
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,020**	**2,020**	
TMW-24	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**271**	**1,050**	59.41
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**330**	**1,060**	
DUP-1 (Windmill)	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**276**	794	--
DUP-1 (Windmill)	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**278**	908	--
DUP-1 (Windmill)	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**259**	798	--
DUP-1 (Windmill)	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**256**	781	--
DUP-1 (Windmill)	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**250**	830	--
DUP-1 (Windmill)	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	243	796	--
Dup-1 (TMW-2)	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**297**	**1,010**	--
Dup-2 (Windmill)	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**491**	787	--
Dup-1 (Windmill)	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	215	729	--
Dup-1 (Windmill)	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**283**	**1,120**	--
Dup-1 (TMW-5)	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,410**	**4,520**	--
Dup-1 (Windmill)	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**413**	**1,130**	--
Dup-1 (Windmill)	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**273**	855	--
Dup-1 (TMW-5)	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**3,030**	**5,850**	--
Dup-1 (TMW-17)	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,830**	**10,300**	--
Dup-2 (TMW-2)	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**265**	**1,010**	--
Dup-1 (TMW-3)	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**328**	986	--
Dup-2 (TMW-14)	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,330**	**2,530**	

Notes:
([1]): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).
([2]): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([3]): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([4]): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
<: concentration is less than analytical method reporting limit (RL).
*: NMWQCC Human Health Standard
**: NMWQCC Domestic Water Quality Standard
--: no data available
***: Depth to groundwater measured from top of casing (TOC)
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
Bold and highlighted denotes analyte concentration exceeds WQCC domestic water quality standard

Figures

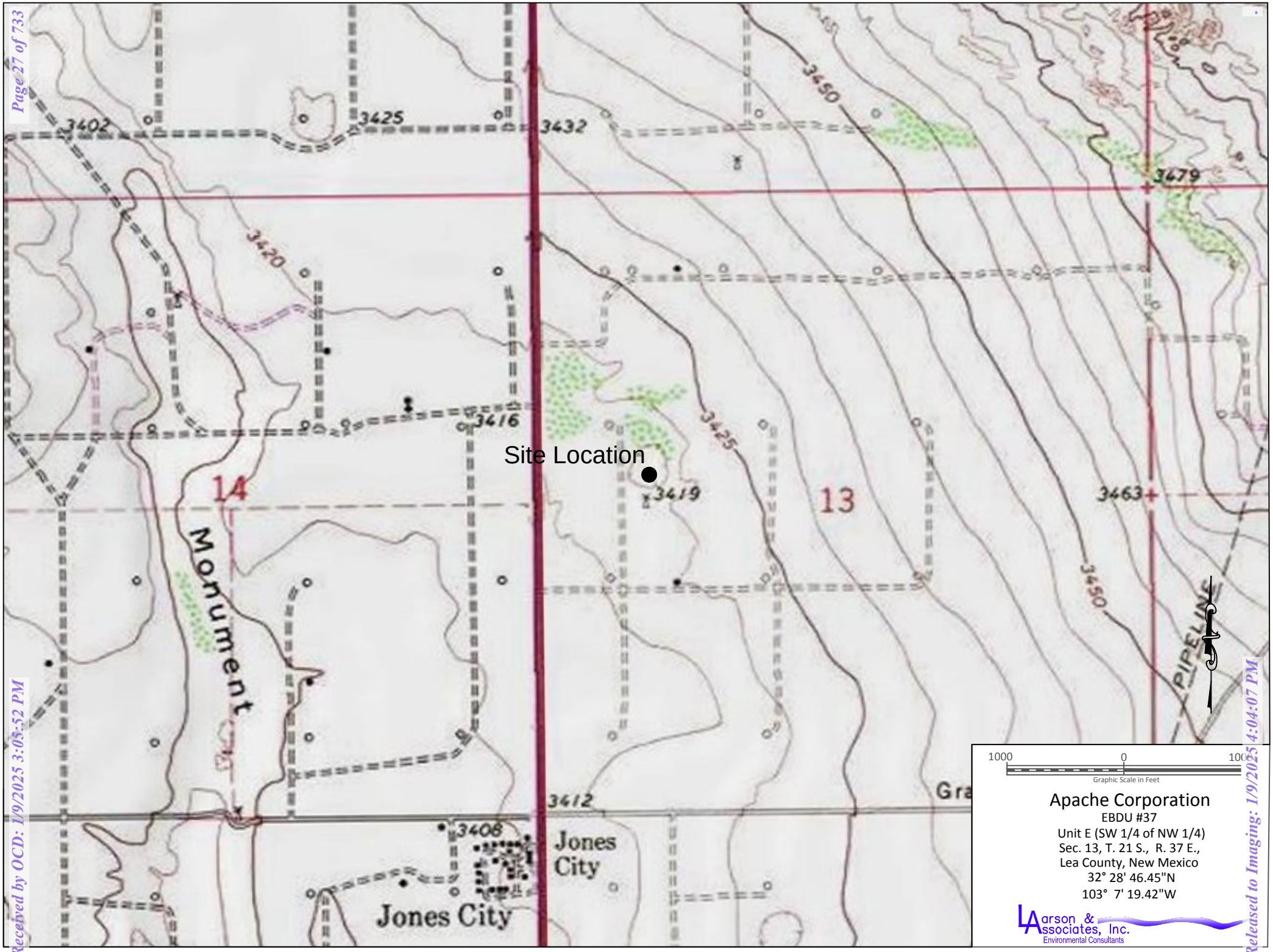


Figure 1 - Topographic Map

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 28 of 733

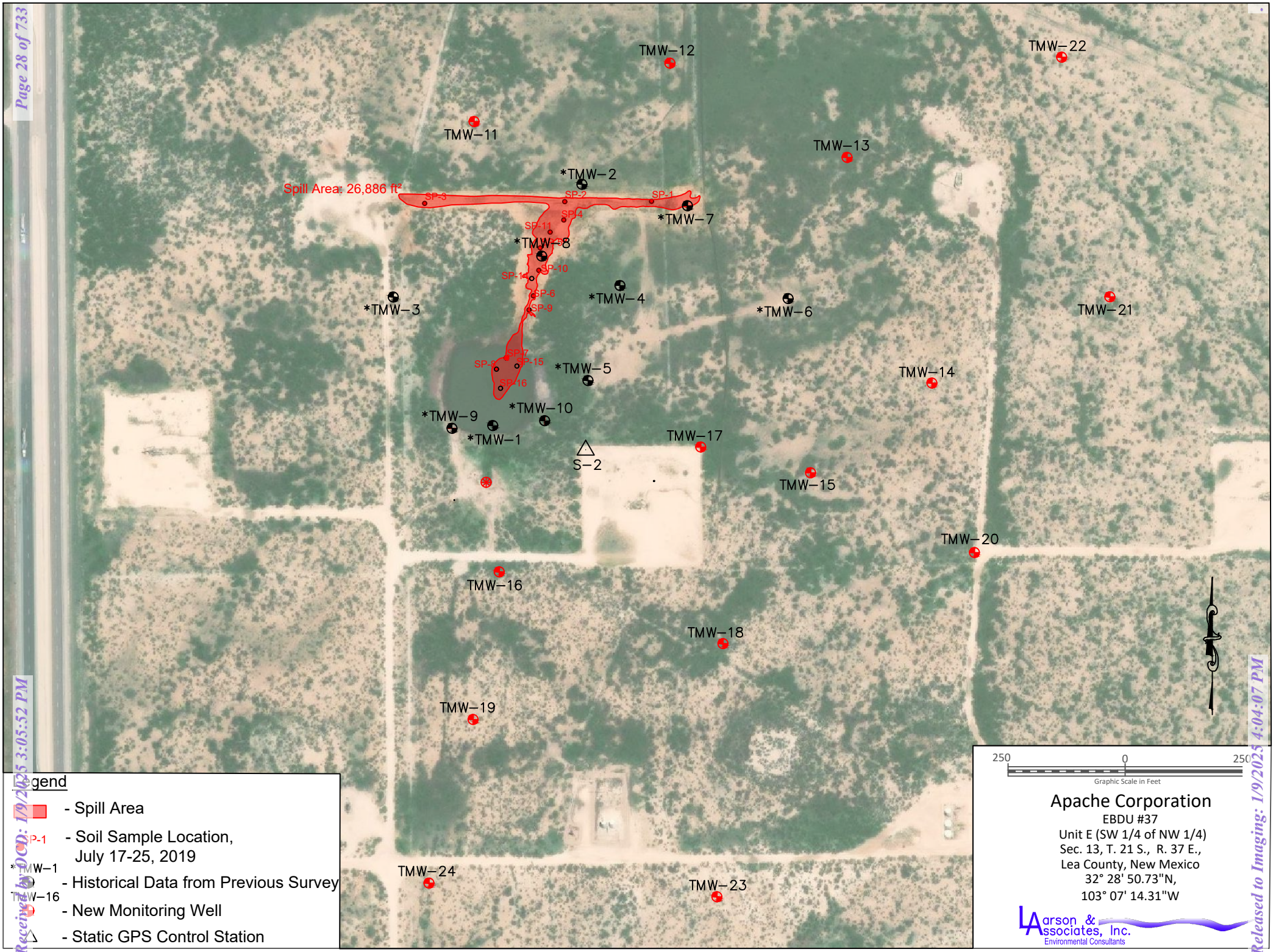


Figure 2 - Aerial Map Showing Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 29 of 733

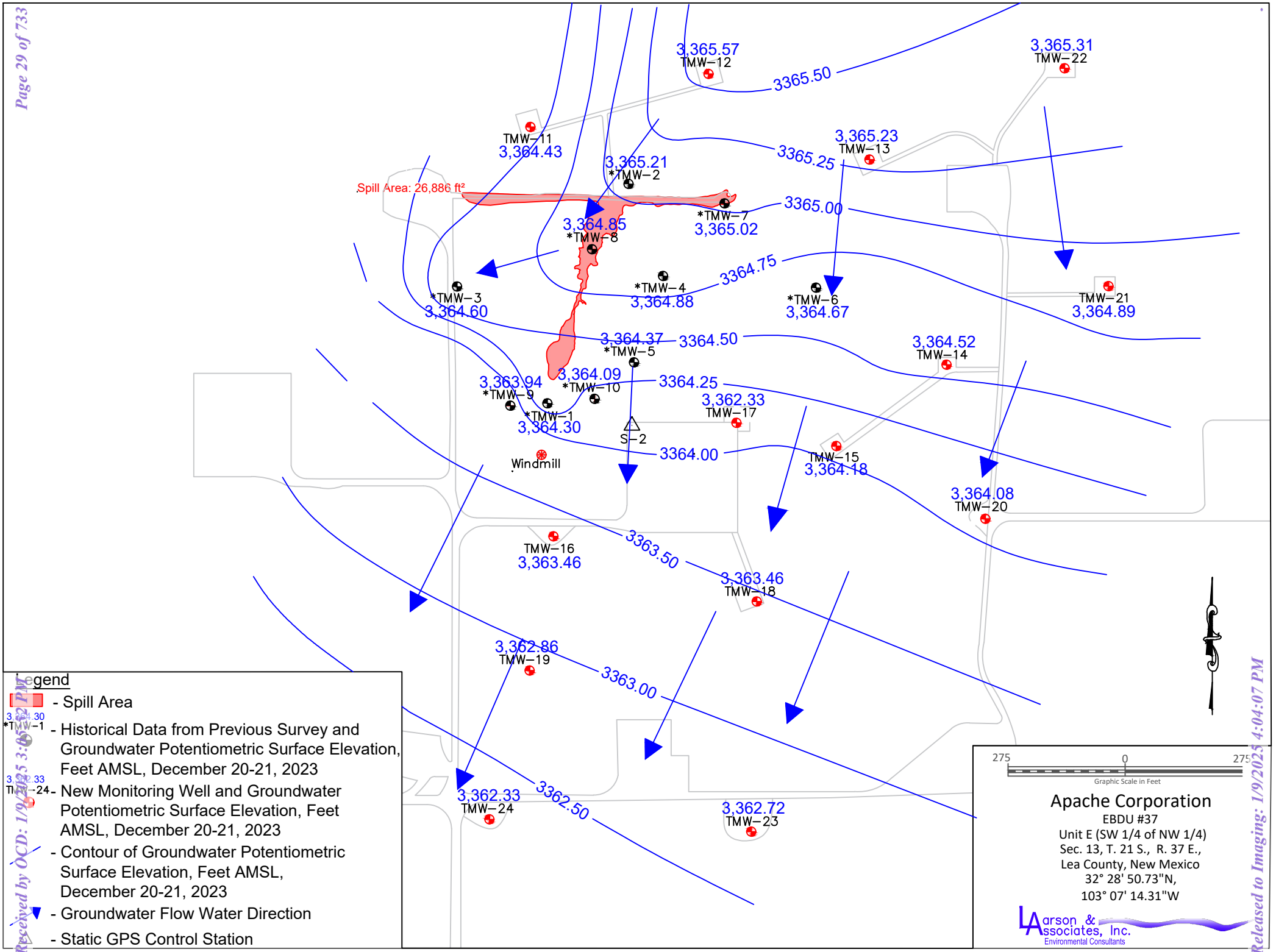


Figure 6 - Groundwater Potentiometric Surface Map, December 20-21, 2023

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 30 of 733

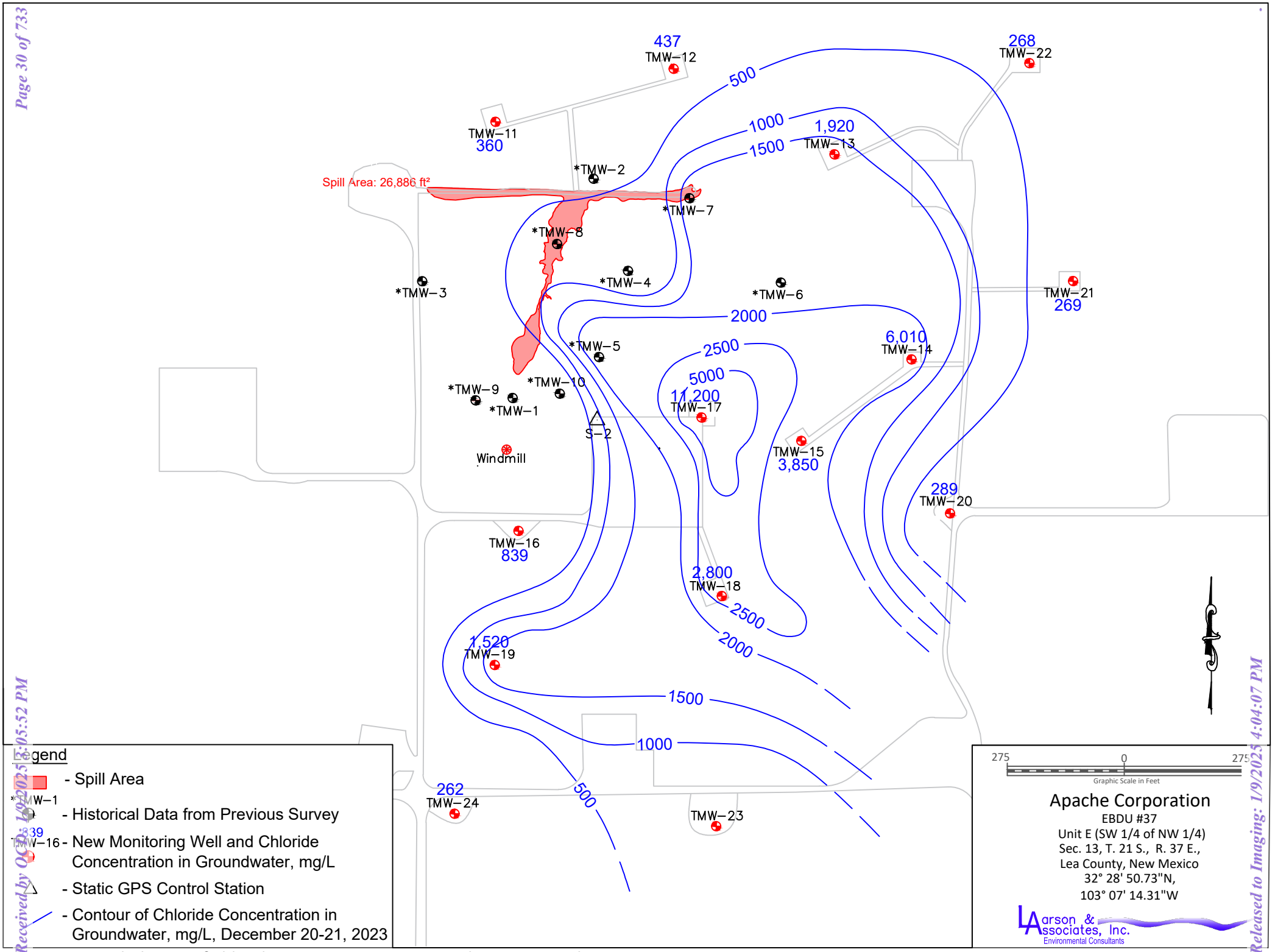


Figure 4 - Isopleth Map of Chloride Concentrations in Groundwater, December 20-21, 2023

Received by OCD: 1/9/2025 5:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Appendix A

NMOCD Communications

Daniel St. Germain

From: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>
Sent: Monday, December 11, 2023 11:47 AM
To: Robert Nelson
Cc: 'Larry.Baker@apachecorp.com'; Rocha, Cesar; Mark Larson; Daniel St. Germain; Bratcher, Michael, EMNRD
Subject: Re: [EXTERNAL] Apache Corp. EBDU #37 (1RP-5636 / nDHR1922141227) Groundwater Notice

Good morning Robert,

Thank you for the correspondence. I attached the new procedures for submitting both liner inspection and confirmation sampling notifications to the previous Apache email submitted earlier today. Please refer to pages 67-74 of the attached document for the sampling notification submittal procedures. It will walk you through the process. Notifications are required to be submitted through the application portal from this point forward.

Since this is a groundwater release, OCD recommends placing within the data entry box "*Please provide any information necessary for observers to contact samplers*", the wording, "**Groundwater abatement per 19.15.30.14B NMAC**". Please note that groundwater sampling notification required 4 working days per the aforementioned provision.

You may also place any other pertinent information, such as **GPS coordinates** within the box "*Please provide any information necessary for navigation to sampling site*".

Thank you and have a great day!

Regards,

Nelson Velez ● Environmental Specialist - Adv
Environmental Bureau | EMNRD - Oil Conservation Division
1000 Rio Brazos Road | Aztec, NM 87410
(505) 469-6146 | nelson.velez@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Robert Nelson <rnelson@laenvironmental.com>
Sent: Monday, December 11, 2023 9:55 AM
To: Velez, Nelson, EMNRD <Nelson.Velez@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Cc: 'Larry.Baker@apachecorp.com' <Larry.Baker@apachecorp.com>; Rocha, Cesar <cesar.rocha@apachecorp.com>;

Mark Larson <Mark@laenvironmental.com>; Daniel St. Germain <dstgermain@laenvironmental.com>
Subject: [EXTERNAL] Apache Corp. EBDU #37 (1RP-5636 / nDHR1922141227) Groundwater Notice

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Mr. Velez and Mr. Bratcher

This message is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Apache Corporation to provide notice that personnel from Larson & Associates, Inc. (LAI) will be at the EBDU #37 (1RP-5636 / nDHR1922141227) on December 20th and 21st, 2023, at approximately 9:00am MST for the purpose of collecting groundwater samples from twenty four (24) monitor wells and one (1) windmill. Please feel free to contact Bruce Baker with Apache at (432) 215-2284 or Larry.Baker@apache.com, Mark Larson at (432) 687-0901 or mark@laenvironmental.com or me if you have any questions.

Thank you,

Robert Nelson
Project Manager
Office – 432-687-0901
Cell – 432-664-4804
rnelson@laenvironmental.com



From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Rachel Owen
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, December 23, 2019 3:21:06 PM

12/23/2019

Apache Corp. – Larry Baker
Larson Environmental

RE: 1RP-5636/EBDU #37, the following:

The attached/stringed email as an addendum to offered Work Plan is approved, including the location of proposed monitor wells, as was discussed recently on the telephone.

Please keep a copy of this communication for your records, as NO paper copy will follow. It may take some days for this to be uploaded to The Oil Conservation Division (OCD) data base,

ODE appreciates your efforts.

Sincerely,

Bradford Billings
EMNRD/OCD
Santa Fe, NM

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

---

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 12:58 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: [EXT] Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Tuesday, September 1, 2020 4:10:21 PM

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

From: Mark Larson <Mark@laenvironmental.com>
Sent: Tuesday, September 1, 2020 10:48 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.
Thank you,
Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656

Fax – 432-687-0456
mark@laenvironmental.com

From: Mark Larson
Sent: Thursday, August 13, 2020 8:26 AM
To: 'Bradford.Billings@state.nm.us' <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Sent: Monday, August 10, 2020 10:51 AM
To: Mark Larson <Mark@laenvironmental.com>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>

Sent: Monday, December 23, 2019 1:58 PM
To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, August 10, 2020 11:03:12 AM

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

Appendix B

Initial C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # *(assigned by OCD)*
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM 88240	

Location of Release Source

Latitude: W 32.4807053 Longitude: N -103.123085

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EBDU #37 WIW	Site Type: Water Injection Well
Date Release Discovered: July 14, 2019	API # *3002506556*

Unit Letter	Section	Township	Range	County
E	12	21S	37E	LEA

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: William Stephens*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
☒ Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Isolation valve failure due to internal corrosion.

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Via email given to NM OCD by Bruce Baker, Senior Environmental Technician, Apache Corporation

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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 of a C-141 report 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 of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jeff Broom Title: Environmental Technician

Signature: _____ Date: 07/24/2019

Email: Jeffrey.Broom@apachecorp.com Telephone: (432) 664-4677

OCD Only

Received by: Dylan Rose-Coss Date: 08/09/2019

Appendix C

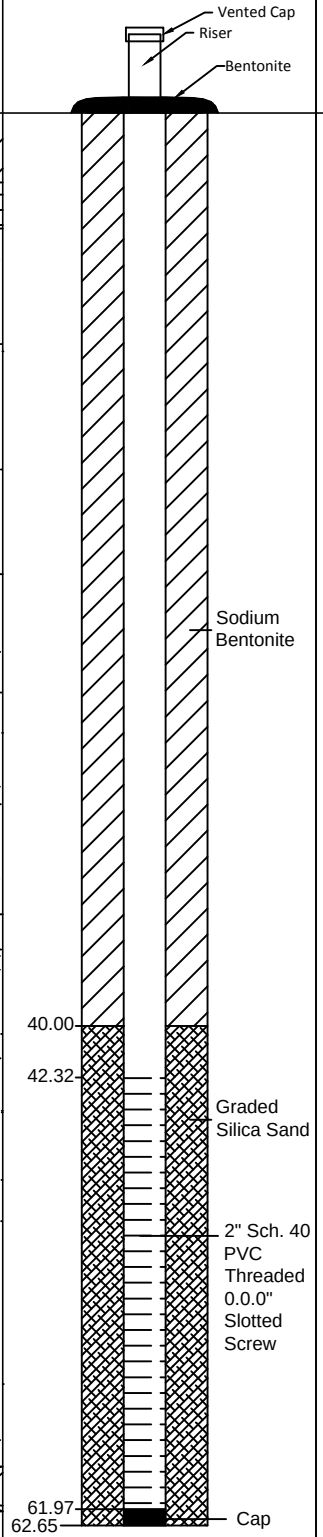
Boring Logs

BORING RECORD

Start: 11:40
Finish: 12:58

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry	CL	
	5	Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry	Caliche	
	10	Silty Sand, 10YR, 6/4, Light Yellowish ..., Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose	SM	
	15			
	20	7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, ... Round		
	25	10YR, 7/4, Very Pale Brown Below 15'		
	30	Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist	SW	
	35	Below 35'		
	40	Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand,Poorly Sorted, Moderately Well Cemented to Well Cemented	Sand Stone	
46.72	45			
	50			
	55			
	60	Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm	SP	
		TD: 62'		



REMARKS	NUMBER	RECOVERY	DEPTH
BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM			1, 5, 10, 15, 20, 25, 30, 35, 40, 45, 60

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache Corp./ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR :
DRILLING METHOD : SR/WR

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-19-2019

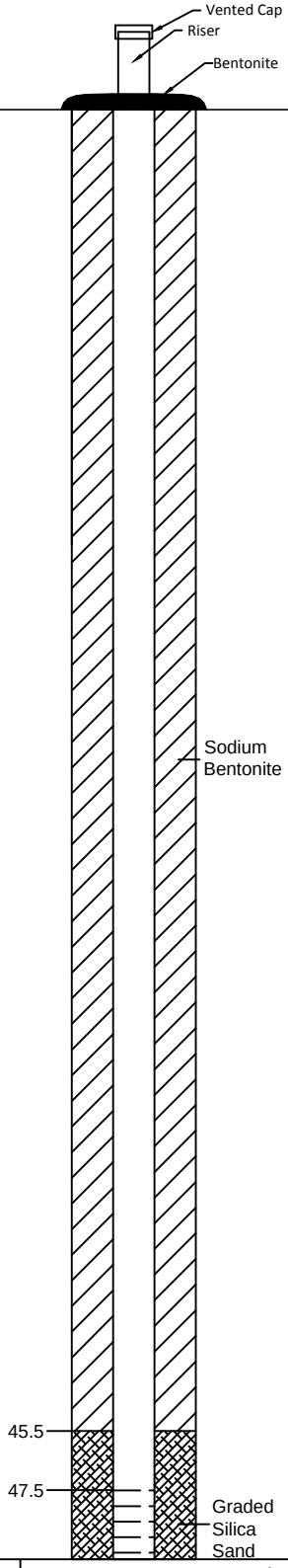
BORING NUMBER : TMW-1

BORING RECORD

Start: 15:02
Finish: 15:55

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
	0	Silty Clay, 10YR, 5/6, Ash Brown, Dry	CL					15:02
	5	Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand	Caliche					15:03
	10							15:05
	15	Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SM					15:10
	20							15:15
	25	Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SW					15:17
	30							15:22
	35							15:23
	40	Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry	SW					15:28
	45							15:30
		Continue						



BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

LArson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019
BORING NUMBER : TMW-2

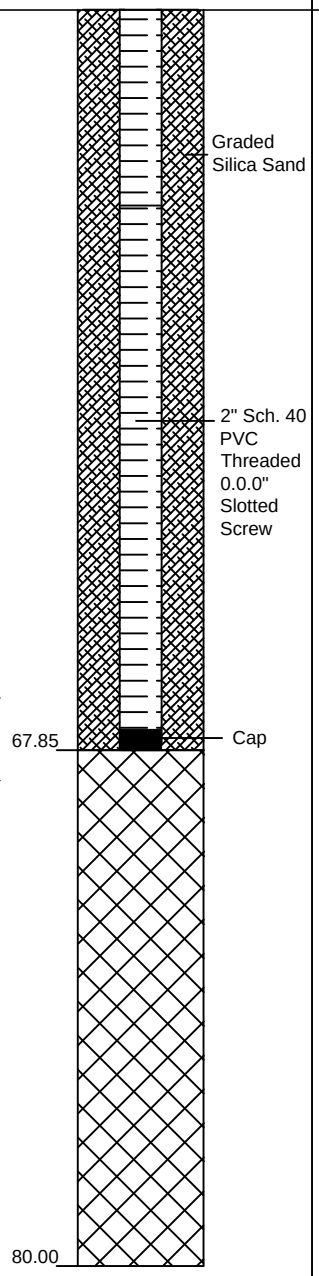
JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 15:02
Finish: 15:55

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	*Continue*	NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING SOIL : PPM SOIL : PPM
	50	*Continue*							
	55	Silty and Clayey Below 50', Moist at 55'	SM-SC						
	60								
	65								
	70								
	75	Gravel, 7.5YR, 4/3, Light Brown, Poorly Sorted, Round, Red Bed	GW						
	80	TD: 79'							



ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019
BORING NUMBER : TMW-2

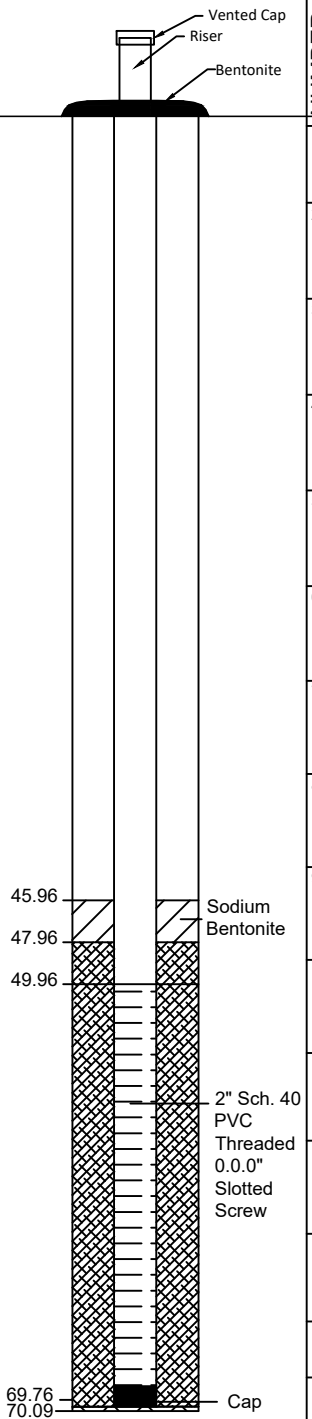
JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 09:35 MST
Finish: 10:30 MST

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Quartz Sand,Quartz and Feldspar Moderate to Well Sorted, Sub Rounded to Well Rounded	SM	
	5			
	10	Caliche, 7.5YR 8/2, Pinkish White, Sandy, Fine to Very Fine Grains, Well Sorted, Well Rounded	Caliche	
	15			
	20	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand	SM	
	25			
	30	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand with Increase in Depth Lithology Remains the Same		
	35			
	40	@37' becomes Silty to Very Fine Grained Quartz Sand to 65'		
	45			
	50			
	55		SM	
	60			
	65			
	70	Gravelly Sand, 7.5YR, Strong Brown, Fine to Very Fine Coarse Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel(5-15mm), Poorly Sorted	SP	
	75			
		TD: 68.41'		

PID READING / SAMPLE / REMARKS



NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING
1		1	SOIL : PPM
2		5	SOIL : PPM
3		10	
4		15	
5		20	
6		25	
7		30	
8		35	
9		40	
10		45	
11		50	
12		55	
13		60	
14		65	
15		68	

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020

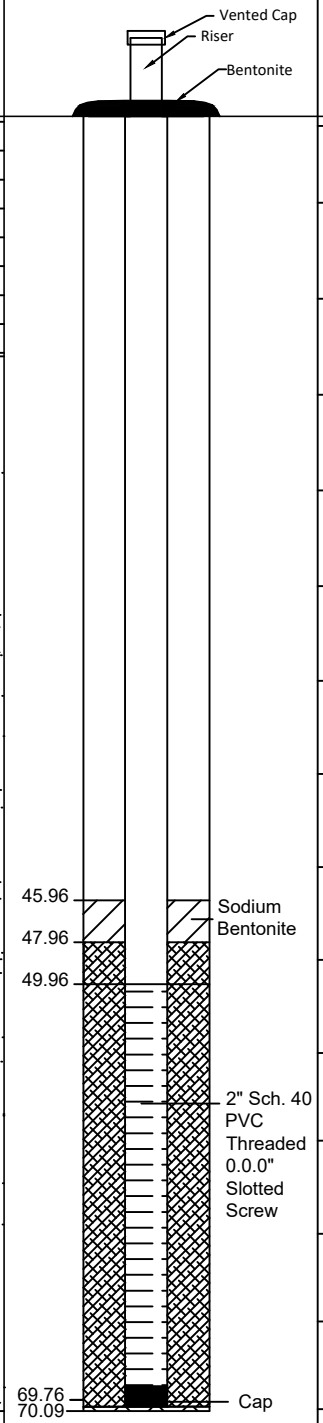
BORING NUMBER : TMW-3

BORING RECORD

Start: 12:45
Finish: 13:40

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Caliche, 7.5YR 8/2, Pinkish White, Medium to Very Fine, Poorly Sorted, Sub Angular to Sub Rounded	Caliche	
	15	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Quartz Sand	SM	
	25	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich Sand, Sub Angular to Sub Rounded, Poorly Sorted, Coarse to Fine Grained Quartz Sand with Increase in Depth @34' Lithology Remained Constant and Grain Size Decreased to Fine to Very Fine Quartz Sand, Well Sorted, Rounded to Well Rounded		
	55	Sand, 7.5YR, Strong Brown, With Gravel, Fine to Very Coarse Quartz Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel (5-15mm), Poorly Sorted	SM	
	70	TD: 70.09'		
	75			

PID READING



SAMPLE

NUMBER	RECOVERY	DEPTH
1		1
2		5
3		10
4		15
5		20
6		25
7		30
8		35
9		40
10		45
11		50
12		55
13		60
14		65
15		70

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020

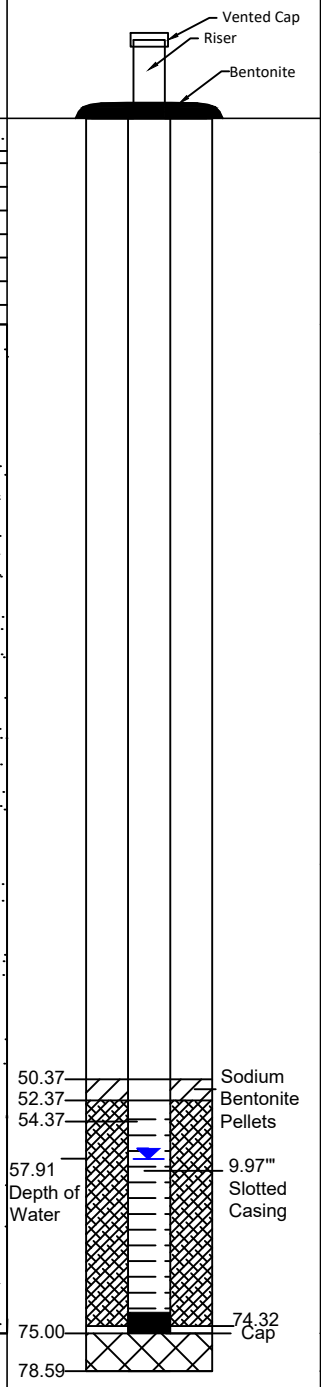
BORING NUMBER : TMW-4

BORING RECORD

Start: 10:18
Finish: 11:43

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Grained Quartz Sand, Quartz and Feldspar, Moderate to Well Sorted, Sub-Rounded to Well Rounded	SW	
	5			
	10	Caliche, 7.5YR 8/2, Pinkish White, Sandy, Fine to Very Fine Grained Quartz Sand, Well Sorted, Well Rounded	Caliche	
	15	Sand, 7.5YR 6/4, Light Brown, Very Fine Grained Quartz Sand, Well Sorted, Sub-Rounded to Well Rounded	SW	
	20			
	25	At 15' - 5YR 8/3, Pink, Very Fine Grained Quartz Sand, Well Sorted, Well Rounded		
	30	Sand 7.5YR 4/4, Brown, Fine to Very Fine Grained Quartz Sand, Well Sorted, Well Rounded, 2-3mm Quartz Clasts	SW	
	35	Water Injected at 35'		
	40			
	50			
	60		SW	
	70			
	75	TD: 75'		
	80			
	90			



NUMBER	RECOVERY	DEPTH
1		2
2		10
3		15
4		35
5		75
6		78

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/28/2022

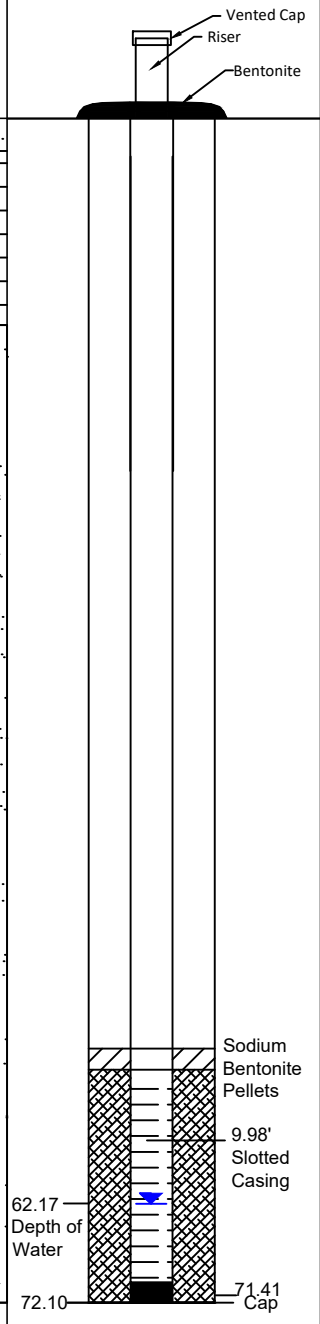
BORING NUMBER : TMW-5

BORING RECORD

Start: 13:08
Finish: 13:57

Surface Elevation:
TOC Elecation:

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Grained Quartz Sand, Moderate to Well Sorted, Sub-Rounded to Well Rounded	SW	
	5			
	10	Caliche, 7.5YR 8/2, Pinkish White, Fine to Very Fine Grained Quartz Sand, Moderately Sorted, Well Rounded	Caliche	
	15	Sand, 7.5YR 8/1, White, Very Fine Grained Quartz Sand and Feldspar, Well Sorted, Well Rounded	SW	
	20			
	25	Sand, 7.5YR 6/6, Reddish Yellow, Very Fine Grained Quartz Sand and Feldspar, Well Sorted, Well Rounded		
	30			
	35	Injection Water at 35'		
	40			
	50			
	60			
	70			
		TD: 72.10'		
	80			
	90			



NUMBER	RECOVERY	DEPTH	REMARKS
1		1	BACKGROUND PID READING SOIL : _____ PPM SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/28/2022

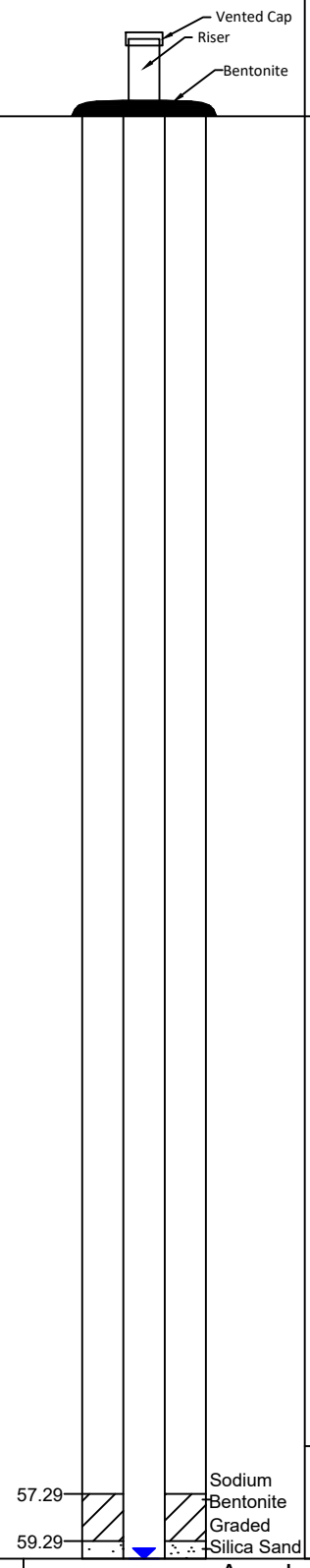
BORING NUMBER : TMW-6

BORING RECORD

Start: 9:06
Finish: 10:04

Surface Elevation: 3,730'
Casing Stickdown: 2.93'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Caliche, 7.5YR 8/3, Pink, Dry, Well Cemented	Caliche	
	5			
	10	Change in Color to 7.5YR 7/2, Pinkish Gray		
	15	Sand, 7.5YR 8/2, Pinkish White, Dry Grained Quartz Sand, Well Sorted, Well Rounded	SW	
	20	Sand Clay,7.5YR 6/6, Reddish Yellow, Moderately Sorted, Well Rounded, Quartz clasts 0.5 cm	CL	
	25			
	30			
	35		CL	
	40	Sand, 5YR 5/6, Yellowish Red, Dry, Poorly Sorted, Well Rounded	SW	
	45			
	50	Very Poorly Sorted, 1 cm Clasts		
	55			
60.0		Water Injected	SW	



NUMBER	RECOVERY	DEPTH
1		55
2		60

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 06/13/2023

BORING NUMBER : TMW-7

BORING RECORD

Start: 9:06
Finish: 10:04

Surface Elevation: 3,730'
Casing Stickdown: 2.93'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	*Continued*	NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
60.0	60	Water Injected							SOIL : PPM SOIL : PPM
	65		SW		61.29 Graded Silica Sand	3		65	
	70				2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw				
	75								
	80		SW		80.78 Cap 81.1	4		80	
	80.92	TD: 80.92 '							
	85								
	90								
	95								
	100								
	105								
	110								
	115								

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 06/13/2023

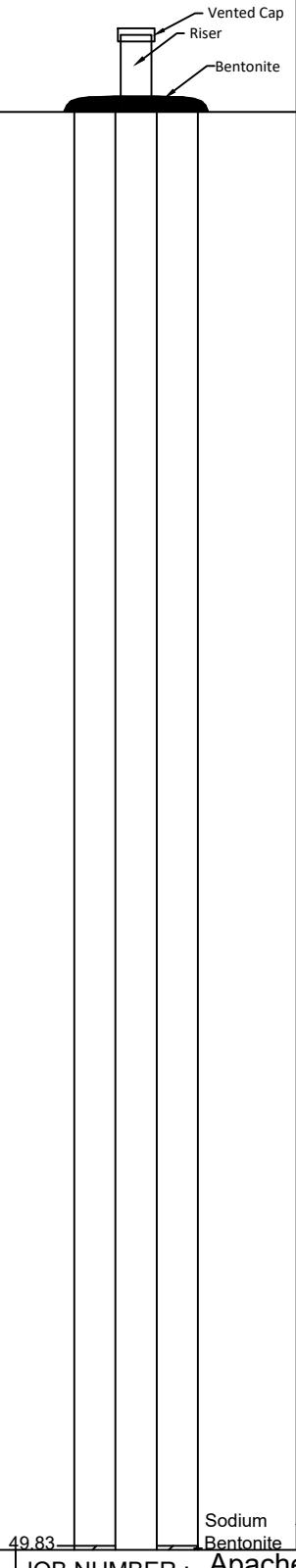
BORING NUMBER : TMW-7

BORING RECORD

Start: 10:25 MST
Finish: 12:58

Surface Elevation: 3,425'
Casing Stickdown: 2.89'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Silty Clay, 5YR 5/3, Reddish Brown, Dry, Fine Grained Quartz Sand, Well Sorted	CL	
	5	Caliche, 2.5YR 8/2, Pinkish White, Sandy to Moderate, Very Fine Grained Quartz Sand	Caliche	
	10	Silty Sand, 7.5YR 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Well Sorted, Dry	SM	
	15	Silty Sand, 7.5YR 7/6, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry		
	20			
	25			
	30		SM	
	35			
	40	Sand, 5YR 6/6, Reddish Yellow, Well Sorted, Rounded, Dry	SW	
	45	Silty Clay, Moderately Sorted, Quartz Clasts 1-2mm, Dry	CL	



NUMBER	RECOVERY	DEPTH
1		49

REMARKS

BACKGROUND PID READING
SOIL :
SOIL :

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc.
Environmental Consultants

DRILL DATE : 06/12/2023
BORING NUMBER : TMW-8

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 10:25 MST
Finish: 12:58

Surface Elevation: 3,425'
Casing Stickdown: 2.89'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	*Continued*	NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
	50					2		51	SOIL :
	55	Moist	CL		51.83 Graded Silica Sand; 53.83	3		53	SOIL :
	60	Water Injected at 60'			2" Sch. 40 PVC Threaded 0.0.0" Slotted Screw				
	65		CL						
	70				73.34 Cap	4		73	
	75	TD: 73.66'			73.86				
	80								
	85								
	90								
	95								

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 06/12/2023

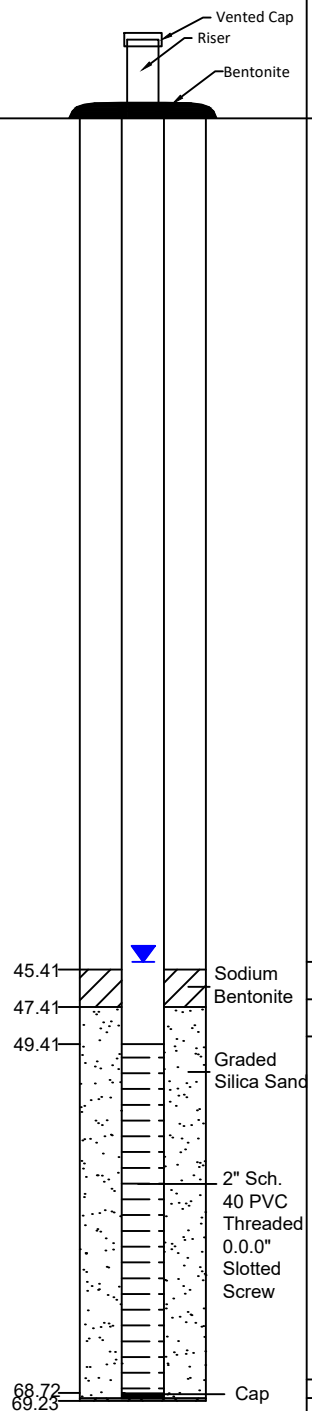
BORING NUMBER : TMW-8

BORING RECORD

Start: 10:15 MST
Finish: 13:31

Surface Elevation: 3,421'
Casing Stickdown: 2.93'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Caliche, 7.5YR 6/3, Light Brown, Poorly Sorted, Dry	Caliche	
	5	Sand, 2.5YR 8/2, Pinkish White, Fine Grained Quartz Sand, Well Sorted, Well Rounded	SW	
	10			
	15	7.5YR 8/3, Pink, Slightly becomes Darker with Depth		
	20	7.5YR 7/4, Pink		
	25			
	30		SW	
	35			
	40			
	45	Water Injected at 45'		
	50			
	55			
	60		SW	
	65			
	70	TD: 69.04		
	75			



NUMBER	RECOVERY	DEPTH
1		45
2		47
3		49
4		68
5		69

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 06/13/2023

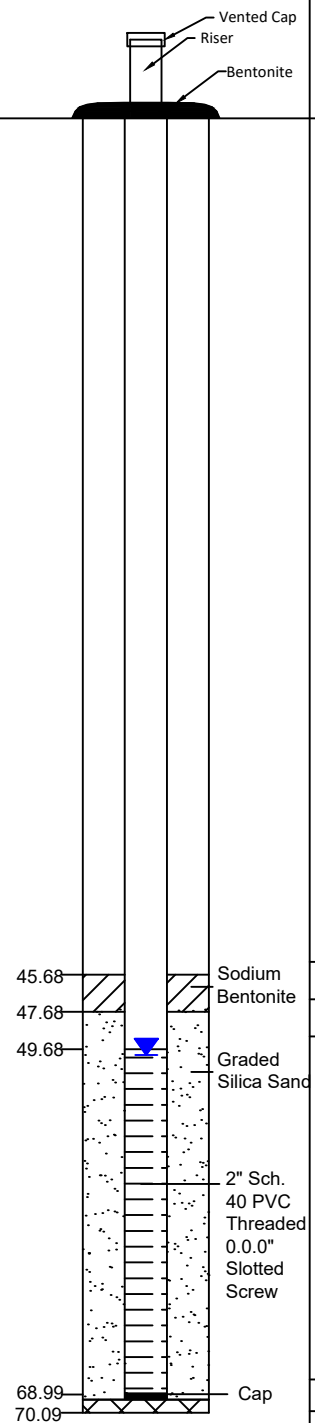
BORING NUMBER : TMW-9

BORING RECORD

Start: 08:43 MST
Finish: 09:58

Surface Elevation: 3,422'
Casing Stickdown: 2.95'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0	Sandy Clay, 7.5YR 4/4, Brown, Poorly Sorted, Fine Grained Quartz Sand, Dry	CL
	5	7.5YR 6/2, Pinkish Gray,Lighter in Color with Depth, Moist	
	10		
	15	Sand, 7.5YR 6/3, Light Brown, Dry, Well Sorted, Fine Grained Quartz Sand	SW
	20	7.5YR 6/6, Reddish Yellow, Darker Color with Depth, Dry	
	25	7.5YR 6/8, Reddish Yellow, Dry	
	30	7.5YR 6/8, Reddish Yellow, Poorly Sorted, Fine Grained Quartz Sand, Clasts ≈ 0-2cm, Dry	SW
	35		
	40		
	45	7.5YR 6/8, Reddish Yellow, Well Sorted, Fine Grained Quartz Sand, Well Rounded, Dry	
	50	Water Injected at 50'	
	55		
	60		SW
	65		
	70	TD: 69.31	
	75		



NUMBER	RECOVERY	DEPTH
1		45
2		47
3		49
4		68
5		70

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 06/14/2023

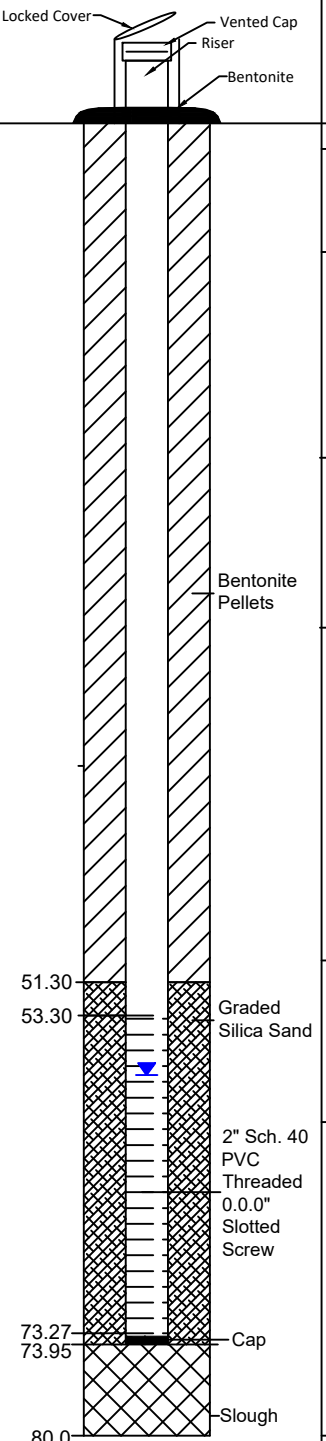
BORING NUMBER : TMW-10

BORING RECORD

Start: 11:26
Finish:

Surface Elevation: 3,421.56'
TOC Elevation: 3,424.35'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	8	Quartz Sand, 2.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	20	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown	SW	
	50	Moist @ 50'		
12/21/23 57.12'	55			
	60	Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		8
3		20
4		30
5		50
6		60
7		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'52.4141", 103°07'19.7965"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/29/23

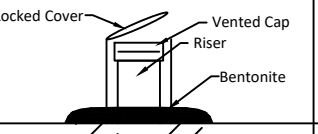
BORING NUMBER : TMW-11

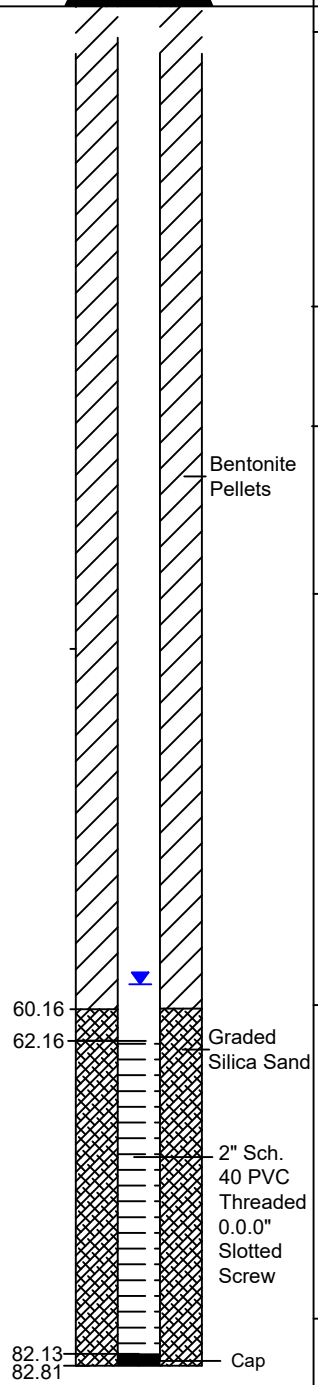
BORING RECORD

Start: 09:25
Finish:

Surface Elevation: 3,424.30'
TOC Elevation: 3427.22'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	18	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	50	Moist @ 50'		
12/21/23 58.73'	60	Water Injected		
	80	TD: 80.00'		





NUMBER	RECOVERY	DEPTH
1		2
2		18
3		25
4		35
5		60
6		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'53.4598"N, 103°07'14.8709"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/30/23

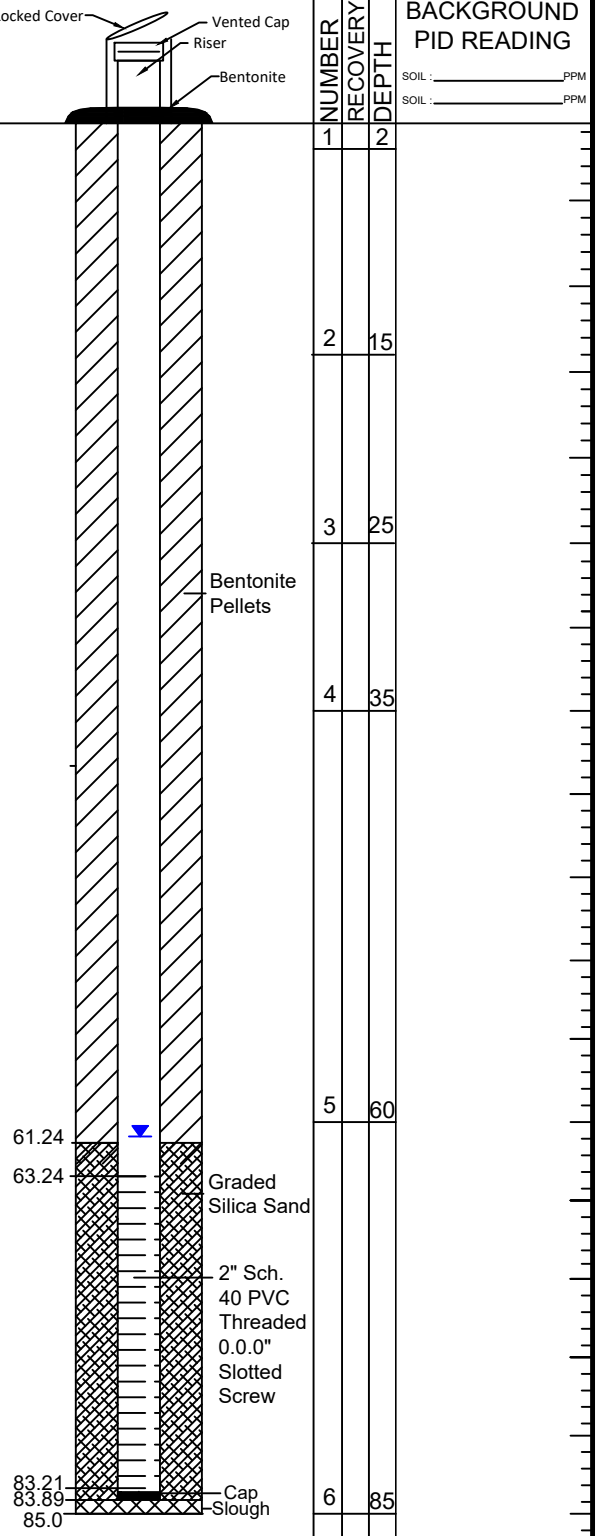
BORING NUMBER : TMW-12

BORING RECORD

Start: 09:25
Finish: 11:13 MST

Surface Elevation: 3,426.21'
TOC Elevation: 3428.98'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm		
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	40		SW	
12/20/23 60.98'	60	Water Injected		
	85	TD: 85.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		35
5		60
6		85

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'51.4724", -103°07'10.5589"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/04/2023

BORING NUMBER : TMW-13

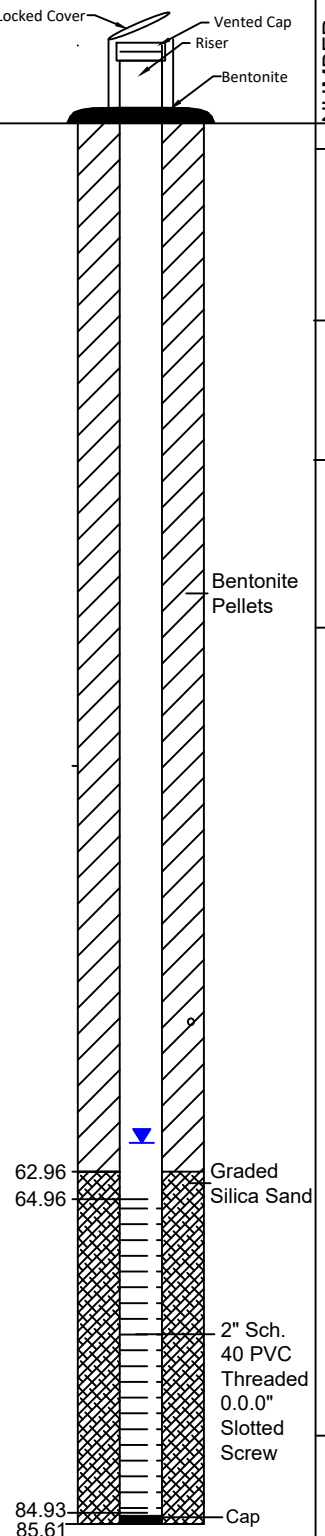
BORING RECORD

Start: 08:54
Finish: 10:15

Surface Elevation: 3,426.76'
TOC Elevation: 3,429.54'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche
	12	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW
	20	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm	
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown	
	80	TD: 80.00'	

12/20/23
62.24'



NUMBER	RECOVERY	DEPTH
1		2
2		12
3		20
4		30
5		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'46.6967"N, 103°07'08.6721"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/01/2023

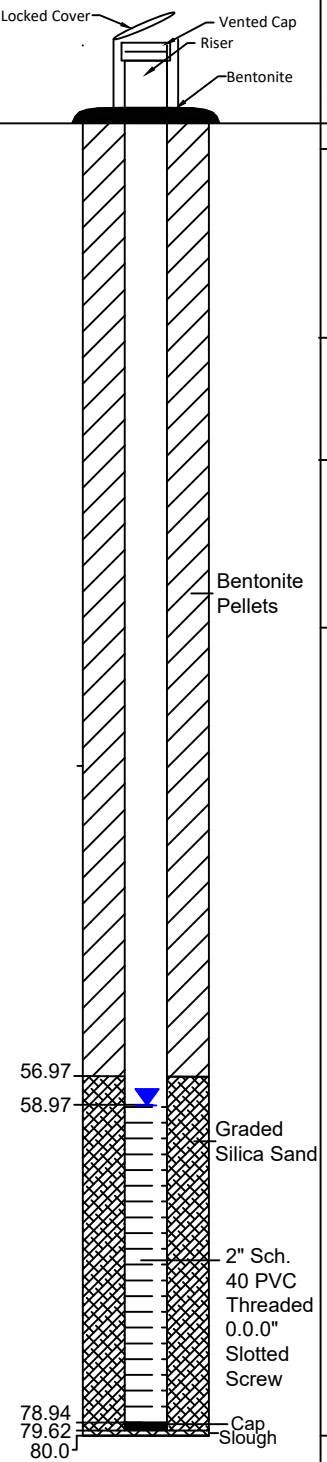
BORING NUMBER : TMW-14

BORING RECORD

Start:
Finish:

Surface Elevation: 3,423.18'
TOC Elevation: 3,425.97'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	13	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm, Wet		
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown		
12/20/23 59.00	60	Moist, Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		13
3		20
4		30
5		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'44.9502"N, 103°07'11.7480"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/30/2023

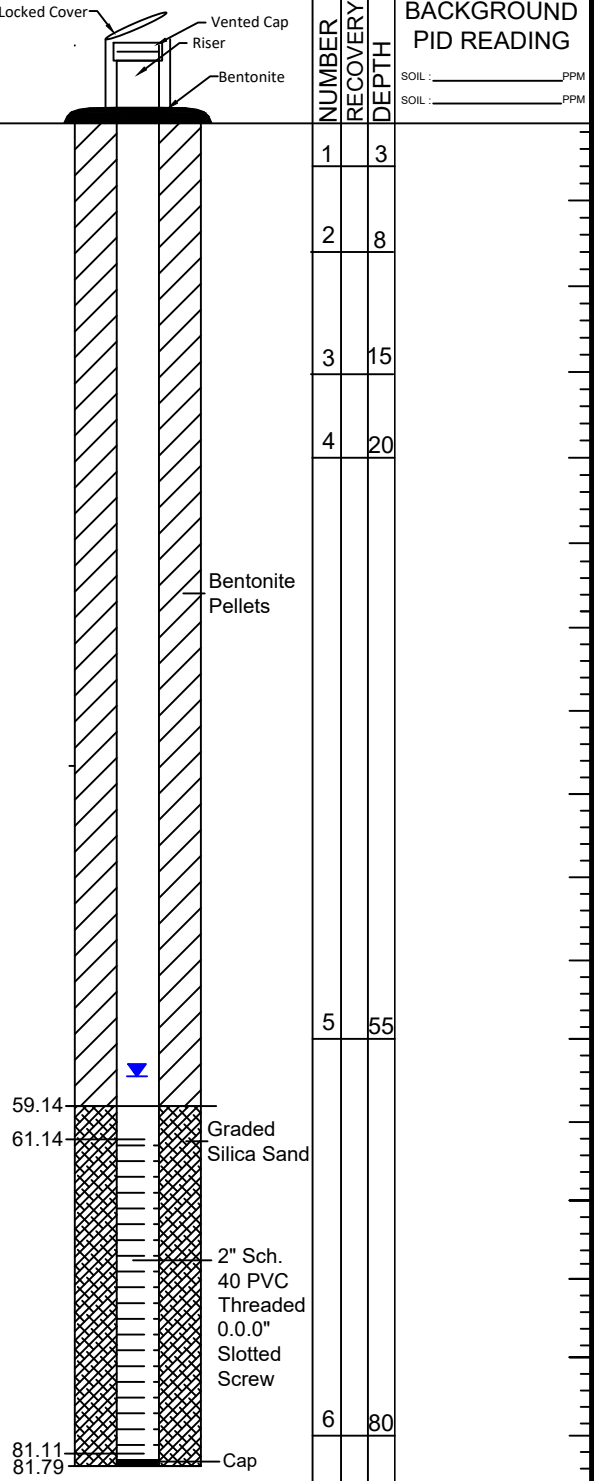
BORING NUMBER : TMW-15

BORING RECORD

Start: 09:35
Finish: 10:17

Surface Elevation: 3,420.73'
TOC Elecation: 3,423.65'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Calcihe Clast ≈ 10-20mm, Organic Material	Top Soil	
	3			
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	8			
	10			
	15			
	20	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	30			
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	40		SW	
	45			
	50			
12/20/2023 57.27	55	Moist		
	60	Water Injected		
	65			
	70			
	75			
	80	TD: 80.00'		
	85			



NUMBER	RECOVERY	DEPTH
1		3
2		8
3		15
4		20
5		55
6		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'42.8747"N, 103°07'19.3738"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/29/2023

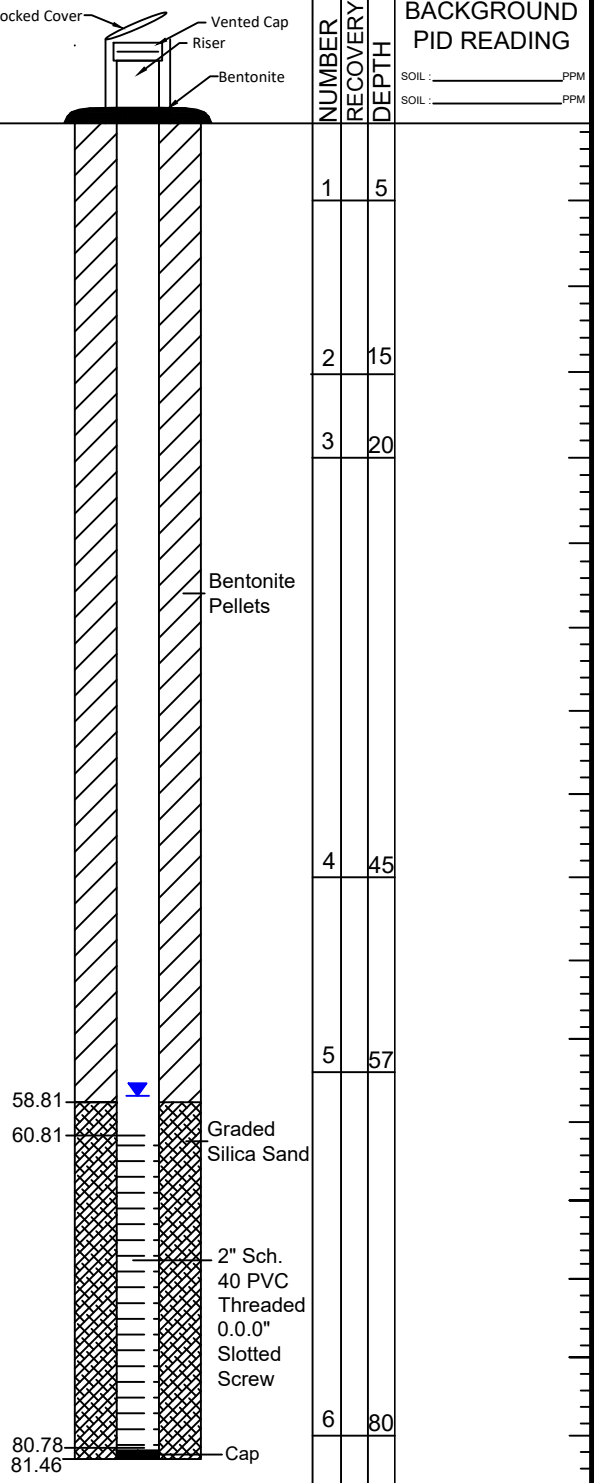
BORING NUMBER : TMW-16

BORING RECORD

Start: 10:15
Finish:

Surface Elevation: 3,422.52'
TOC Elecation: 3,425.68'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sandy Clay, Poorly Graded Sand with Clay, 10YR 5/4 Yellowish Brown, Quartz Clasts ≈ 0-10mm in size, Moderately Sorted, Well Rounded	CH	
	5			
	10	Caliche, 7.5YR 8/3 Pink, Clasts ≈0-10mm, Moderately Sorted, Well Rounded	Caliche	
	15			
	20	Quartz Sand, 7.5YR 8/2 Pinkish White, Well Sorted, Well Rounded	SW	
	25	Change in Color 7.5YR 6/8 Reddish Yellow		
	30			
	35			
	40			
	45	Change in Color 5YR 5/8 Yellowish Red		
	50			
12/20/2023 58.40'	55	Moist		
	60	Water Injected		
	65			
	70			
	75			
	80	TD: 80.00'		
	85			



NUMBER	RECOVERY	DEPTH	REMARKS: BACKGROUND PID READING
1		5	SOIL : PPM
2		15	SOIL : PPM
3		20	
4		45	
5		57	
6		80	

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'45.4199"N, 103°07'14.3198"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/28/2023

BORING NUMBER : TMW-17

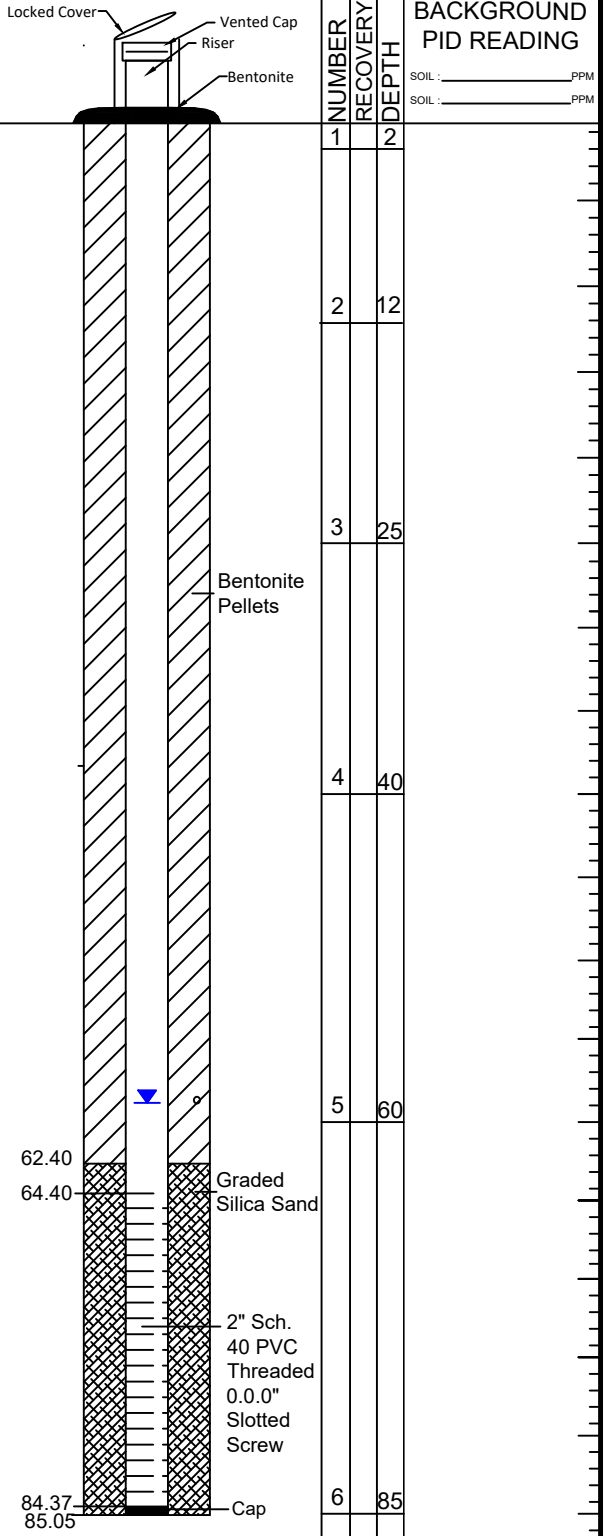
BORING RECORD

Start: 09:25
Finish: 10:25

Surface Elevation: 3,422.29'
TOC Elecation: 3,425.61'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0		
	2	Topsoil, 10YR 5/3 Brown, Organic Material	Top Soil
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with	Caliche
	10		
	12	Depth, Well Rounded, Quartz Clast ≈ 5mm	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	
	20		
	25	7.5YR 6/4 Light Brown, Very Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm	
	30		
	35		
	40	Darker Color with depth, 7.5YR 5/6, Strong Brown	SW
	45		
	50		
12/20/2023 58.83'	55		
	60	Water Injected	
	65		
	70		
	75		
	80		
	85	TD: 85.00'	

GRAPHIC LOG



NUMBER	RECOVERY	DEPTH
1		2
2		12
3		25
4		40
5		60
6		85

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'41.3327", -103°07'13.9784"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/05/2023

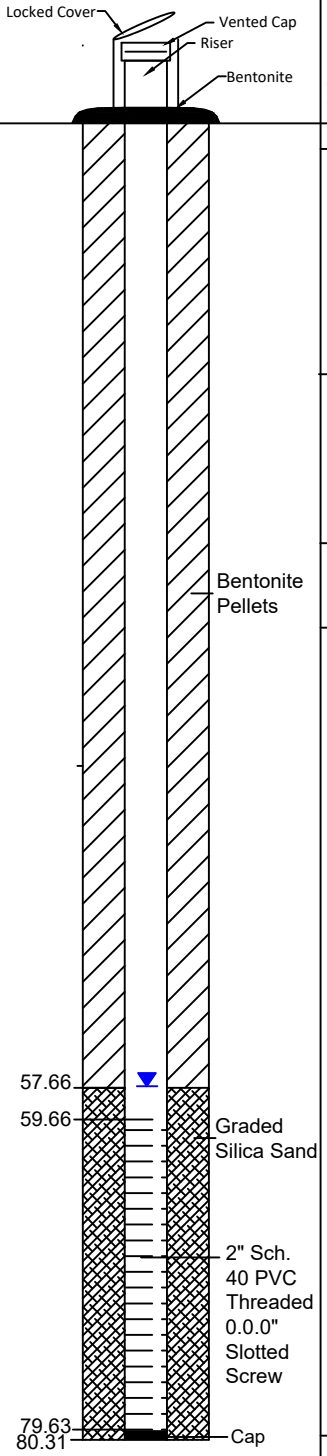
BORING NUMBER : TMW-18

BORING RECORD

Start: 12:15
Finish: 14:06

Surface Elevation: 3,420.79'
TOC Elecation: 3,423.79'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	25	Densely Packed		
	30	Water Injected		
	40		SW	
12/20/2023 57.93'	55			
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		30
5		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'39.6650", -103°07'20.1318"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/05/2023

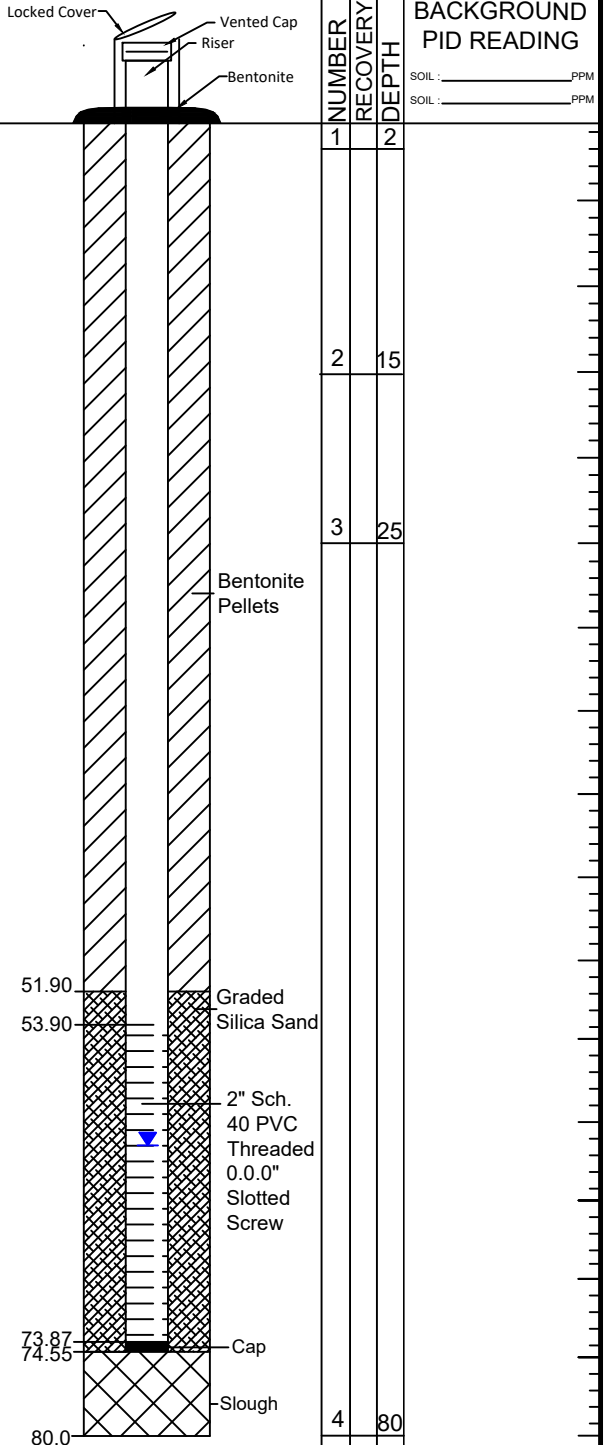
BORING NUMBER : TMW-19

BORING RECORD

Start: 09:35 MST
Finish: 11:25

Surface Elevation: 3,426.46'
TOC Elecation: 3,429.34'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted	SW	
12/20/23 62.38'	60	Water Injected		
	78	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'43.1706", -103°07'07.6036"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/06/2023

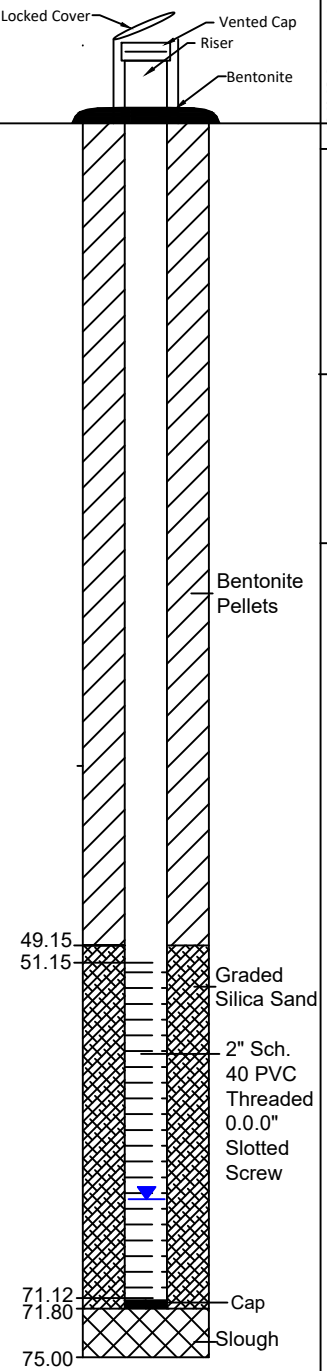
BORING NUMBER : TMW-20

BORING RECORD

Start: 09:15
Finish: 11:15
Surface Elevation: 3,429.87'
TOC Elecation: 3,432.20'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	20	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm	SW	
	45	Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted		
	60	Water Injected		
	75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
		TD: 75'		

12/21/23
64.98'



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		80

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'48.6833", -103°07'04.2879"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

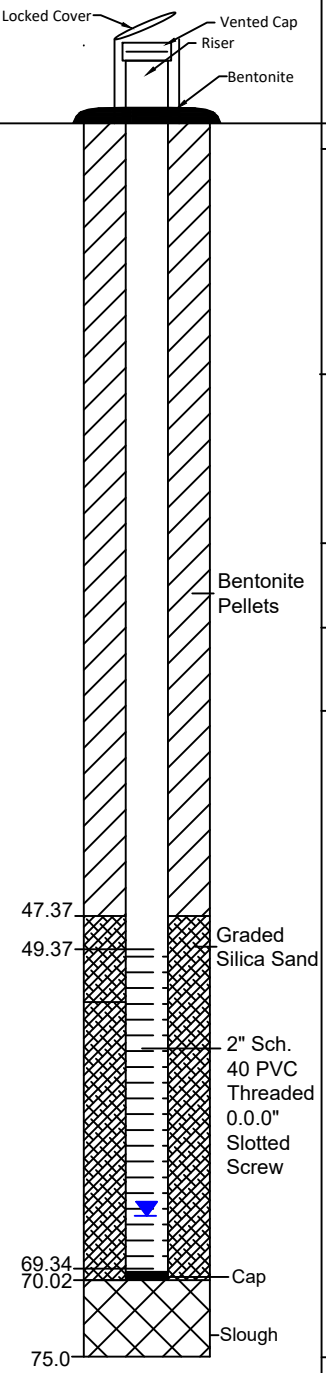
DRILL DATE : 12/07/2023
BORING NUMBER : TMW-21

BORING RECORD

Start: 13:26
Finish: 14:56

Surface Elevation: 3,431.29'
TOC Elecation: 3,434.17'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15			
	20	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm		
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	35	Water Injected at 35'		
	40			
	45		SW	
	50			
	55			
	60			
12/20/23 65.97'	65			
	70			
	73			
	75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dry	RD	
	80			
		TD: 75.00'		
	85			



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		30
5		35
6		75

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'53.5612", -103°07'05.2315"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/07/2023

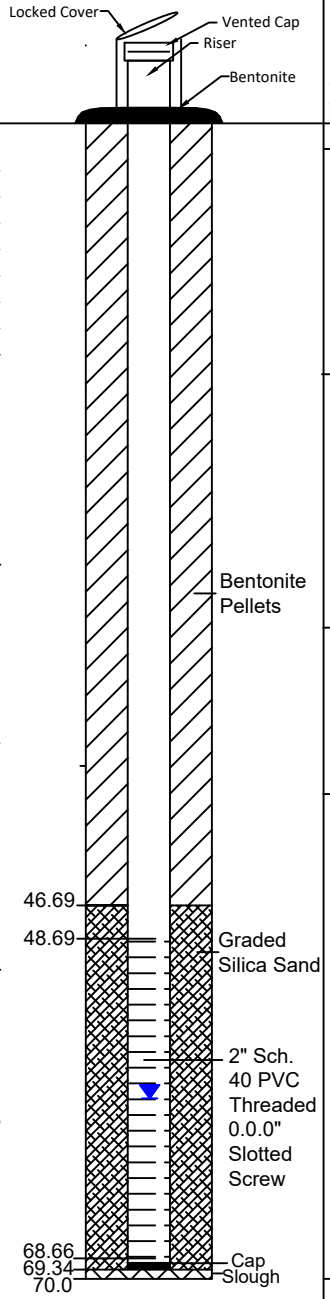
BORING NUMBER : TMW-22

BORING RECORD

Start: 09:55
Finish: 11:55 MST

Surface Elevation: 3,421.28'
TOC Elecation: 3,424.23'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	30	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm Darker Color with depth, 7.5YR 5/6 Strong Brown Water Injected at 40'	SW	
12/20/2023 58.56'	68	Silty Clay (Redbed) 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Demo Dry	RD	
	70	TD: 70.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		30
4		40
5		70

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'35.92"N, 103°07'14.06"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/13/2023

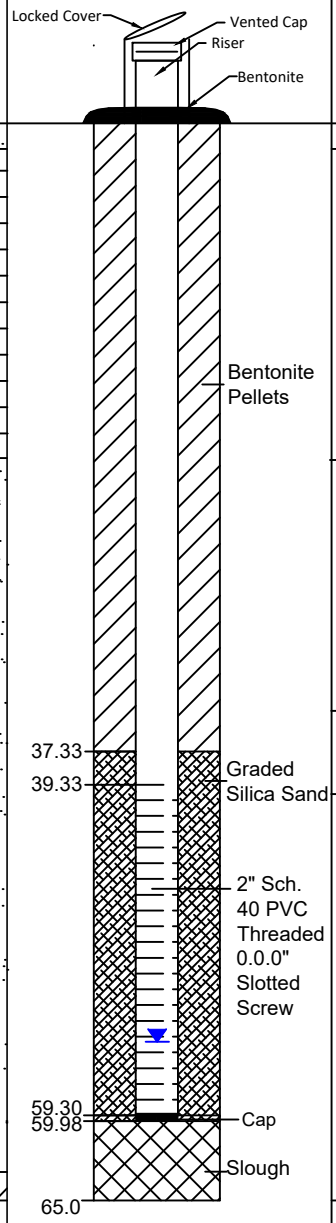
BORING NUMBER : TMW-23

BORING RECORD

Start: 13:45
Finish: 14:55

Surface Elevation: 3,418.54'
TOC Elecation: 3,421.74'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	10			
	15			
	20			
	25	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	30			
	35	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm	SW	
	40	Water Injected at 40'		
	45			
	50			
12/20/23 56.21'	55			
	60			
	63			
	65	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
	70			
	75	TD: 65.00'		
	80			
	85			



NUMBER	RECOVERY	DEPTH
1		2
2		20
3		35
4		40
5		65

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'36.33722"N 103°07'21.23108"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/13/2023

BORING NUMBER : TMW-24

Appendix D

Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 1/2/2024 8:18:03 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-37226-1

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
1/2/2024 8:18:03 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-37226-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 16
QC Sample Results 17
QC Association Summary 21
Lab Chronicle 24
Certification Summary 28
Method Summary 29
Sample Summary 30
Chain of Custody 31
Receipt Checklists 33

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project: EBDU #37

Job ID: 880-37226-1 Eurofins Midland

Job Narrative
880-37226-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/21/2023 9:42 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.5°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: TMW-17 (880-37226-1), TMW-16 (880-37226-2), TMW-19 (880-37226-3), TMW-24 (880-37226-4), TMW-23 (880-37226-5), Windmill (880-37226-6), TMW-20 (880-37226-7), TMW-21 (880-37226-8), TMW-22 (880-37226-9), TMW-18 (880-37226-10), TMW-15 (880-37226-11), TMW-13 (880-37226-12), TMW-14 (880-37226-13), TMW-6 (880-37226-14), TMW-5 (880-37226-15), TMW-4 (880-37226-16), TMW-7 (880-37226-17), TMW-8 (880-37226-18) and Dup-1 (880-37226-19).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with analytical batch 880-69717 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-69667 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-17

Date Collected: 12/20/23 08:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-1

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F2	0.00200		mg/L			12/23/23 21:06	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/23/23 21:06*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*		*12/23/23 21:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5850**		25.0		mg/L			12/23/23 00:07	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**10300**		500		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-16

Date Collected: 12/20/23 08:59
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-2

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*		*12/23/23 21:32*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*		*12/23/23 21:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85.5**		2.50		mg/L			12/23/23 00:31	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**495**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-19

Lab Sample ID: 880-37226-3
Matrix: Water
Date Collected: 12/20/23 09:20
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/23/23 21:58*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*12/23/23 21:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**927**		10.0		mg/L			12/23/23 00:38	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1860**		100		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-24

Lab Sample ID: 880-37226-4
Matrix: Water
Date Collected: 12/20/23 09:35
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*		*12/23/23 22:24*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*		*12/23/23 22:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**271**		5.00		mg/L			12/23/23 00:46	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1050**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-23

Lab Sample ID: 880-37226-5
Matrix: Water
Date Collected: 12/20/23 09:45
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*12/23/23 22:51*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*12/23/23 22:51*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**895**		10.0		mg/L			12/23/23 00:54	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1980**		100		mg/L			12/22/23 12:48	1

Client Sample ID: Windmill

Lab Sample ID: 880-37226-6
Matrix: Water
Date Collected: 12/20/23 09:15
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*12/23/23 23:17*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*		*12/23/23 23:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**409**		5.00		mg/L			12/23/23 01:18	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1010**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-20

Lab Sample ID: 880-37226-7
Matrix: Water
Date Collected: 12/20/23 10:14
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*12/23/23 23:44*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*		*12/23/23 23:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**287**		5.00		mg/L			12/23/23 01:26	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**927**		50.0		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-21

Lab Sample ID: 880-37226-8
Matrix: Water
Date Collected: 12/20/23 10:30
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*12/24/23 00:10*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*12/24/23 00:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**262**		5.00		mg/L			12/23/23 01:33	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**885**		50.0		mg/L			12/22/23 12:48	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-22

Date Collected: 12/20/23 10:44
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/24/23 00:36*	*1*
1,4-Difluorobenzene (Surr)	*74*		*70 - 130*		*12/24/23 00:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**270**		5.00		mg/L			12/23/23 01:41	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**939**		50.0		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-18

Date Collected: 12/20/23 11:25
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*		*12/24/23 01:03*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*		*12/24/23 01:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2050**		25.0		mg/L			12/23/23 01:49	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**6430**		200		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-15

Lab Sample ID: 880-37226-11
Matrix: Water
Date Collected: 12/20/23 11:42
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*		*12/24/23 02:48*	*1*
1,4-Difluorobenzene (Surr)	*70*		*70 - 130*		*12/24/23 02:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2120**	**F1**	25.0		mg/L			12/23/23 01:57	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3870**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-13

Lab Sample ID: 880-37226-12
Matrix: Water
Date Collected: 12/20/23 12:16
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*		*12/24/23 03:15*	*1*
1,4-Difluorobenzene (Surr)	*68*	*S1-*	*70 - 130*		*12/24/23 03:15*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1730**		25.0		mg/L			12/23/23 02:20	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3680**		200		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-14

Lab Sample ID: 880-37226-13
Matrix: Water
Date Collected: 12/20/23 12:00
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*12/24/23 03:41*	*1*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*		*12/24/23 03:41*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2500**		25.0		mg/L			12/23/23 02:28	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**5140**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-6

Lab Sample ID: 880-37226-14
Matrix: Water
Date Collected: 12/20/23 12:30
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/24/23 04:08*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*12/24/23 04:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1570**		25.0		mg/L			12/23/23 02:52	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3070**		200		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-5

Lab Sample ID: 880-37226-15
Matrix: Water
Date Collected: 12/20/23 12:43
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*		*12/24/23 04:34*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*		*12/24/23 04:34*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2320**		25.0		mg/L			12/23/23 03:00	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**4250**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-4

Lab Sample ID: 880-37226-16
Matrix: Water
Date Collected: 12/20/23 13:00
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*12/24/23 05:01*	*1*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*		*12/24/23 05:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**598**		10.0		mg/L			12/23/23 03:08	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1750**		100		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-7

Lab Sample ID: 880-37226-17
Matrix: Water
Date Collected: 12/20/23 13:13
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*12/24/23 05:27*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*		*12/24/23 05:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1770**		25.0		mg/L			12/23/23 03:16	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3720**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-8

Lab Sample ID: 880-37226-18
Matrix: Water
Date Collected: 12/20/23 13:32
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*12/24/23 05:54*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*		*12/24/23 05:54*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**709**		10.0		mg/L			12/23/23 03:23	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1840**		100		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: Dup-1

Date Collected: 12/20/23 00:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*12/24/23 06:20*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*		*12/24/23 06:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5830**		25.0		mg/L			12/23/23 03:31	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**10300**		500		mg/L			12/22/23 12:48	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-37226-1	TMW-17	92	93										
880-37226-1 MS	TMW-17	129	113										
880-37226-1 MSD	TMW-17	108	111										
880-37226-2	TMW-16	120	111										
880-37226-3	TMW-19	95	90										
880-37226-4	TMW-24	129	71										
880-37226-5	TMW-23	108	90										
880-37226-6	Windmill	114	95										
880-37226-7	TMW-20	112	108										
880-37226-8	TMW-21	107	85										
880-37226-9	TMW-22	96	74										
880-37226-10	TMW-18	121	103										
880-37226-11	TMW-15	81	70										
880-37226-12	TMW-13	123	68 S1-										
880-37226-13	TMW-14	113	118										
880-37226-14	TMW-6	103	85										
880-37226-15	TMW-5	119	100										
880-37226-16	TMW-4	114	121										
880-37226-17	TMW-7	112	94										
880-37226-18	TMW-8	101	98										
880-37226-19	Dup-1	116	102										
LCS 880-69717/3	Lab Control Sample	100	95										
LCSD 880-69717/4	Lab Control Sample Dup	121	108										
MB 880-69717/8	Method Blank	60 S1-	88										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69717/8
Matrix: Water
Analysis Batch: 69717

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 20:40	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*60*	*S1-*	*70 - 130*		*12/23/23 20:40*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*		*12/23/23 20:40*	*1*

Lab Sample ID: LCS 880-69717/3
Matrix: Water
Analysis Batch: 69717

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07869		mg/L		79	70 - 130		
Toluene			0.100	0.07281		mg/L		73	70 - 130		
Ethylbenzene			0.100	0.07420		mg/L		74	70 - 130		
m,p-Xylenes			0.200	0.1528		mg/L		76	70 - 130		
o-Xylene			0.100	0.07922		mg/L		79	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-69717/4
Matrix: Water
Analysis Batch: 69717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08671		mg/L		87	70 - 130	10	20
Toluene			0.100	0.08545		mg/L		85	70 - 130	16	20
Ethylbenzene			0.100	0.09013		mg/L		90	70 - 130	19	20
m,p-Xylenes			0.200	0.1740		mg/L		87	70 - 130	13	20
o-Xylene			0.100	0.08666		mg/L		87	70 - 130	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F2	0.100	0.1037		mg/L		104	70 - 130		
Toluene	<0.00200	U	0.100	0.08379		mg/L		84	70 - 130		

Eurofins Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.09322		mg/L		93	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1651		mg/L		83	70 - 130
o-Xylene	<0.00200	U	0.100	0.1004		mg/L		100	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-37226-1 MSD
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F2	0.100	0.07590	F2	mg/L		76	70 - 130	31	25
Toluene	<0.00200	U	0.100	0.08334		mg/L		83	70 - 130	1	25
Ethylbenzene	<0.00200	U	0.100	0.08083		mg/L		81	70 - 130	14	25
m,p-Xylenes	<0.00400	U	0.200	0.1639		mg/L		82	70 - 130	1	25
o-Xylene	<0.00200	U	0.100	0.08708		mg/L		87	70 - 130	14	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69667/3
Matrix: Water
Analysis Batch: 69667

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/22/23 23:43	1

Lab Sample ID: LCS 880-69667/4
Matrix: Water
Analysis Batch: 69667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			25.0	23.63		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-69667/5
Matrix: Water
Analysis Batch: 69667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	23.60		mg/L		94	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5850		1250	6811	4	mg/L		77	90 - 110

Lab Sample ID: 880-37226-1 MSD
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5850		1250	6795	4	mg/L		76	90 - 110	0	20

Lab Sample ID: 880-37226-11 MS
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2120	F1	1250	3322		mg/L		97	90 - 110

Lab Sample ID: 880-37226-11 MSD
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2120	F1	1250	3195	F1	mg/L		86	90 - 110	4	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-69658/1
Matrix: Water
Analysis Batch: 69658

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0		mg/L			12/22/23 12:48	1

Lab Sample ID: LCS 880-69658/2
Matrix: Water
Analysis Batch: 69658

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids			1000	970.0		mg/L		97	80 - 120

Lab Sample ID: LCSD 880-69658/3
Matrix: Water
Analysis Batch: 69658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	985.0		mg/L		99	80 - 120	2	10

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 880-37226-1 DU
Matrix: Water
Analysis Batch: 69658

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	10300			10340		mg/L				0.6	10

Lab Sample ID: 880-37226-11 DU
Matrix: Water
Analysis Batch: 69658

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3870			3948		mg/L				2	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

GC VOA

Analysis Batch: 69717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	8021B	
880-37226-2	TMW-16	Total/NA	Water	8021B	
880-37226-3	TMW-19	Total/NA	Water	8021B	
880-37226-4	TMW-24	Total/NA	Water	8021B	
880-37226-5	TMW-23	Total/NA	Water	8021B	
880-37226-6	Windmill	Total/NA	Water	8021B	
880-37226-7	TMW-20	Total/NA	Water	8021B	
880-37226-8	TMW-21	Total/NA	Water	8021B	
880-37226-9	TMW-22	Total/NA	Water	8021B	
880-37226-10	TMW-18	Total/NA	Water	8021B	
880-37226-11	TMW-15	Total/NA	Water	8021B	
880-37226-12	TMW-13	Total/NA	Water	8021B	
880-37226-13	TMW-14	Total/NA	Water	8021B	
880-37226-14	TMW-6	Total/NA	Water	8021B	
880-37226-15	TMW-5	Total/NA	Water	8021B	
880-37226-16	TMW-4	Total/NA	Water	8021B	
880-37226-17	TMW-7	Total/NA	Water	8021B	
880-37226-18	TMW-8	Total/NA	Water	8021B	
880-37226-19	Dup-1	Total/NA	Water	8021B	
MB 880-69717/8	Method Blank	Total/NA	Water	8021B	
LCS 880-69717/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-69717/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-37226-1 MS	TMW-17	Total/NA	Water	8021B	
880-37226-1 MSD	TMW-17	Total/NA	Water	8021B	

Analysis Batch: 69798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	Total BTEX	
880-37226-2	TMW-16	Total/NA	Water	Total BTEX	
880-37226-3	TMW-19	Total/NA	Water	Total BTEX	
880-37226-4	TMW-24	Total/NA	Water	Total BTEX	
880-37226-5	TMW-23	Total/NA	Water	Total BTEX	
880-37226-6	Windmill	Total/NA	Water	Total BTEX	
880-37226-7	TMW-20	Total/NA	Water	Total BTEX	
880-37226-8	TMW-21	Total/NA	Water	Total BTEX	
880-37226-9	TMW-22	Total/NA	Water	Total BTEX	
880-37226-10	TMW-18	Total/NA	Water	Total BTEX	
880-37226-11	TMW-15	Total/NA	Water	Total BTEX	
880-37226-12	TMW-13	Total/NA	Water	Total BTEX	
880-37226-13	TMW-14	Total/NA	Water	Total BTEX	
880-37226-14	TMW-6	Total/NA	Water	Total BTEX	
880-37226-15	TMW-5	Total/NA	Water	Total BTEX	
880-37226-16	TMW-4	Total/NA	Water	Total BTEX	
880-37226-17	TMW-7	Total/NA	Water	Total BTEX	
880-37226-18	TMW-8	Total/NA	Water	Total BTEX	
880-37226-19	Dup-1	Total/NA	Water	Total BTEX	

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

HPLC/IC

Analysis Batch: 69667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	300.0	
880-37226-2	TMW-16	Total/NA	Water	300.0	
880-37226-3	TMW-19	Total/NA	Water	300.0	
880-37226-4	TMW-24	Total/NA	Water	300.0	
880-37226-5	TMW-23	Total/NA	Water	300.0	
880-37226-6	Windmill	Total/NA	Water	300.0	
880-37226-7	TMW-20	Total/NA	Water	300.0	
880-37226-8	TMW-21	Total/NA	Water	300.0	
880-37226-9	TMW-22	Total/NA	Water	300.0	
880-37226-10	TMW-18	Total/NA	Water	300.0	
880-37226-11	TMW-15	Total/NA	Water	300.0	
880-37226-12	TMW-13	Total/NA	Water	300.0	
880-37226-13	TMW-14	Total/NA	Water	300.0	
880-37226-14	TMW-6	Total/NA	Water	300.0	
880-37226-15	TMW-5	Total/NA	Water	300.0	
880-37226-16	TMW-4	Total/NA	Water	300.0	
880-37226-17	TMW-7	Total/NA	Water	300.0	
880-37226-18	TMW-8	Total/NA	Water	300.0	
880-37226-19	Dup-1	Total/NA	Water	300.0	
MB 880-69667/3	Method Blank	Total/NA	Water	300.0	
LCS 880-69667/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-69667/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-37226-1 MS	TMW-17	Total/NA	Water	300.0	
880-37226-1 MSD	TMW-17	Total/NA	Water	300.0	
880-37226-11 MS	TMW-15	Total/NA	Water	300.0	
880-37226-11 MSD	TMW-15	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 69658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	SM 2540C	
880-37226-2	TMW-16	Total/NA	Water	SM 2540C	
880-37226-3	TMW-19	Total/NA	Water	SM 2540C	
880-37226-4	TMW-24	Total/NA	Water	SM 2540C	
880-37226-5	TMW-23	Total/NA	Water	SM 2540C	
880-37226-6	Windmill	Total/NA	Water	SM 2540C	
880-37226-7	TMW-20	Total/NA	Water	SM 2540C	
880-37226-8	TMW-21	Total/NA	Water	SM 2540C	
880-37226-9	TMW-22	Total/NA	Water	SM 2540C	
880-37226-10	TMW-18	Total/NA	Water	SM 2540C	
880-37226-11	TMW-15	Total/NA	Water	SM 2540C	
880-37226-12	TMW-13	Total/NA	Water	SM 2540C	
880-37226-13	TMW-14	Total/NA	Water	SM 2540C	
880-37226-14	TMW-6	Total/NA	Water	SM 2540C	
880-37226-15	TMW-5	Total/NA	Water	SM 2540C	
880-37226-16	TMW-4	Total/NA	Water	SM 2540C	
880-37226-17	TMW-7	Total/NA	Water	SM 2540C	
880-37226-18	TMW-8	Total/NA	Water	SM 2540C	
880-37226-19	Dup-1	Total/NA	Water	SM 2540C	
MB 880-69658/1	Method Blank	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

General Chemistry (Continued)

Analysis Batch: 69658 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-69658/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-69658/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-37226-1 DU	TMW-17	Total/NA	Water	SM 2540C	
880-37226-11 DU	TMW-15	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-17

Date Collected: 12/20/23 08:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:06	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 00:07	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-16

Date Collected: 12/20/23 08:59
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:32	AJ	EET MID
Total/NA	Analysis	300.0		5	50 mL	50 mL	69667	12/23/23 00:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-19

Date Collected: 12/20/23 09:20
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:58	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-24

Date Collected: 12/20/23 09:35
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:24	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 00:46	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-23

Date Collected: 12/20/23 09:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:51	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:54	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: Windmill
Date Collected: 12/20/23 09:15
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:17	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:18	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-20
Date Collected: 12/20/23 10:14
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:44	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:26	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-21
Date Collected: 12/20/23 10:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:10	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:33	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-22
Date Collected: 12/20/23 10:44
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:36	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:41	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-18
Date Collected: 12/20/23 11:25
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 01:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 01:03	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-15
Date Collected: 12/20/23 11:42
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 02:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 02:48	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:57	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-13
Date Collected: 12/20/23 12:16
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:15	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-14
Date Collected: 12/20/23 12:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:41	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:28	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-6
Date Collected: 12/20/23 12:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:08	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:52	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-5
Date Collected: 12/20/23 12:43
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:34	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:00	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-4

Date Collected: 12/20/23 13:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:01	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:08	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-7

Date Collected: 12/20/23 13:13
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:27	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:16	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-8

Date Collected: 12/20/23 13:32
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-18
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:54	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:23	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: Dup-1

Date Collected: 12/20/23 00:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 06:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 06:20	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37226-1	TMW-17	Water	12/20/23 08:45	12/21/23 09:42
880-37226-2	TMW-16	Water	12/20/23 08:59	12/21/23 09:42
880-37226-3	TMW-19	Water	12/20/23 09:20	12/21/23 09:42
880-37226-4	TMW-24	Water	12/20/23 09:35	12/21/23 09:42
880-37226-5	TMW-23	Water	12/20/23 09:45	12/21/23 09:42
880-37226-6	Windmill	Water	12/20/23 09:15	12/21/23 09:42
880-37226-7	TMW-20	Water	12/20/23 10:14	12/21/23 09:42
880-37226-8	TMW-21	Water	12/20/23 10:30	12/21/23 09:42
880-37226-9	TMW-22	Water	12/20/23 10:44	12/21/23 09:42
880-37226-10	TMW-18	Water	12/20/23 11:25	12/21/23 09:42
880-37226-11	TMW-15	Water	12/20/23 11:42	12/21/23 09:42
880-37226-12	TMW-13	Water	12/20/23 12:16	12/21/23 09:42
880-37226-13	TMW-14	Water	12/20/23 12:00	12/21/23 09:42
880-37226-14	TMW-6	Water	12/20/23 12:30	12/21/23 09:42
880-37226-15	TMW-5	Water	12/20/23 12:43	12/21/23 09:42
880-37226-16	TMW-4	Water	12/20/23 13:00	12/21/23 09:42
880-37226-17	TMW-7	Water	12/20/23 13:13	12/21/23 09:42
880-37226-18	TMW-8	Water	12/20/23 13:32	12/21/23 09:42
880-37226-19	Dup-1	Water	12/20/23 00:00	12/21/23 09:42

Page 106 of 733

37226 No. 2884

CHAIN-OF-CUSTODY

1/2/2024

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to Mark Larson / Robert Nelson

DATE 12/20/2023 PAGE 1 OF 2

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME. EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR. RW/DSG

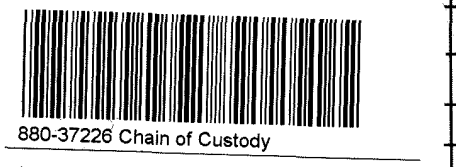
TRRP report? ☐ Yes ☑ No

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

TIME ZONE
Time zone/State
MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-17		12/20/23	0845	W	5				X	X		Direct Bill to Apache
TMW-16			0859									
TMW-19			0920									
TMW-24			0935									
TMW-23			0945									
windmill			0915									
TMW-20			1014									
TMW-21			1030									
TMW-22			1044									
TMW-18			1125									
TMW-15			1142									
TMW-13			1216									
TMW-14			1200									
TMW-6			1230									
TMW-5			1243									
TOTAL												

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



RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	12/21 942	[signature]
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 8.3/8.5 THERM#: IR8
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Page 31 of 33

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

37226 No. 2885

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Robert Nelson

DATE 12/20/23 PAGE 2 OF 2
PO# LAB WORK ORDER#
PROJECT LOCATION OR NAME EBDU #37
LAI PROJECT # 19-6112-49 COLLECTOR RN MS

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State: MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-4		12/20/23	1300	W	5				X		X												X			X			Direct Bill to
TMW-7		"	1313	"	"				"		"												"			"			Apache
TMW-8		"	1332	"	"				"		"												"			"			
Dup-1		"	—	"	"				"		"												"			"			
TOTAL																													

Loc: 880
37226

RELINQUISHED BY (Signature) Pamela Battle DATE/TIME 12/21 942 RECEIVED BY (Signature)
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)
LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 8.3185 THERM#
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Page 107 of 733
Received by OCD: 1/9/2025 3:05:52 PM
Page 32 of 33
Released to Imaging: 1/9/2025 4:04:07 PM
1/2/2024

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37226-1
SDG Number: 19-0112-49

Login Number: 37226
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 1/2/2024 12:48:10 PM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-37238-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

See page two for job notes and contact information.

Released to Imaging: 1/9/2025 4:04:07 PM

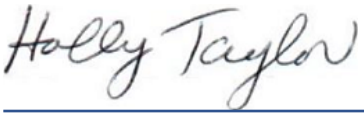
Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
1/2/2024 12:48:10 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-37238-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 11
QC Sample Results 12
QC Association Summary 16
Lab Chronicle 18
Certification Summary 20
Method Summary 21
Sample Summary 22
Chain of Custody 23
Receipt Checklists 25

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project: EBDU #37

Job ID: 880-37238-1 Eurofins Midland

Job Narrative
880-37238-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/21/2023 1:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C

GC/MS VOA
Method 8260C: Internal standard (ISTD) response for 1,4-Dichlorobenzene-d4 for the following samples in analytical batch 860-136702 was outside acceptance criteria: TMW-10 (880-37238-1), TMW-1 (880-37238-2) and TMW-9 (880-37238-3). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-10

Date Collected: 12/21/23 08:35
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-1

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*63 - 144*		*12/27/23 12:32*	*1*
4-Bromofluorobenzene (Surr)	*123*	*3	*74 - 124*		*12/27/23 12:32*	*1*
Dibromofluoromethane (Surr)	*102*		*75 - 131*		*12/27/23 12:32*	*1*
Toluene-d8 (Surr)	*120*		*80 - 120*		*12/27/23 12:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**114**		0.500		mg/L			12/23/23 07:45	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**666**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-1

Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*		*12/27/23 12:53*	*1*
4-Bromofluorobenzene (Surr)	*121*	*3	*74 - 124*		*12/27/23 12:53*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/27/23 12:53*	*1*
Toluene-d8 (Surr)	*119*		*80 - 120*		*12/27/23 12:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**156**		0.500		mg/L			12/23/23 07:58	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-1

Lab Sample ID: 880-37238-2
Matrix: Water
Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	662		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-9

Lab Sample ID: 880-37238-3
Matrix: Water
Date Collected: 12/21/23 09:26
Date Received: 12/21/23 13:49

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 144*		*12/27/23 13:13*	*1*
4-Bromofluorobenzene (Surr)	*125*	*S1+ *3*	*74 - 124*		*12/27/23 13:13*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/27/23 13:13*	*1*
Toluene-d8 (Surr)	*117*		*80 - 120*		*12/27/23 13:13*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.3		0.500		mg/L			12/23/23 08:10	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	404		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-3

Lab Sample ID: 880-37238-4
Matrix: Water
Date Collected: 12/21/23 09:36
Date Received: 12/21/23 13:49

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 144*		*12/28/23 15:48*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 15:48*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 131*		*12/28/23 15:48*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/28/23 15:48*	*1*

Client Sample Results

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project/Site: EBDU #37 SDG: 19-0112-49

Client Sample ID: TMW-3 Lab Sample ID: 880-37238-4
Date Collected: 12/21/23 09:36 **Matrix: Water**
Date Received: 12/21/23 13:49

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**242**		0.500		mg/L			12/23/23 08:23	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1020**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-2 Lab Sample ID: 880-37238-5
Date Collected: 12/21/23 09:56 **Matrix: Water**
Date Received: 12/21/23 13:49

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*63 - 144*		*12/28/23 16:09*	*1*
4-Bromofluorobenzene (Surr)	*88*		*74 - 124*		*12/28/23 16:09*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 131*		*12/28/23 16:09*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**264**		0.500		mg/L			12/23/23 08:35	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1100**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-11 Lab Sample ID: 880-37238-6
Date Collected: 12/21/23 10:11 **Matrix: Water**
Date Received: 12/21/23 13:49

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-11

Date Collected: 12/21/23 10:11
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*63 - 144*		*12/28/23 16:30*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 16:30*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/28/23 16:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**350**		0.500		mg/L			12/23/23 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1190**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-12

Date Collected: 12/21/23 10:29
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-7

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 144*		*12/28/23 16:50*	*1*
4-Bromofluorobenzene (Surr)	*87*		*74 - 124*		*12/28/23 16:50*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*12/28/23 16:50*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**463**		0.500		mg/L			12/23/23 09:13	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1520**		20.0		mg/L			12/26/23 17:40	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: Dup-2

Date Collected: 12/21/23 00:00
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-8

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*63 - 144*		*12/28/23 17:11*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 17:11*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/28/23 17:11*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/28/23 17:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**265**		0.500		mg/L			12/23/23 09:01	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1010**		10.0		mg/L			12/26/23 17:40	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(63-144)	(74-124)	(75-131)	(80-120)
880-37238-1	TMW-10	92	123 *3	102	120
880-37238-1 MS	TMW-10	114	90	99	99
880-37238-2	TMW-1	96	121 *3	101	119
880-37238-3	TMW-9	98	125 S1+ *3	101	117
880-37238-4	TMW-3	106	89	105	99
880-37238-5	TMW-2	103	88	100	100
880-37238-6	TMW-11	107	89	99	100
880-37238-7	TMW-12	98	87	98	100
880-37238-8	Dup-2	99	89	99	101
LCS 860-136702/3	Lab Control Sample	111	86	95	96
LCS 860-138343/3	Lab Control Sample	91	96	99	94
LCSD 860-136702/4	Lab Control Sample Dup	110	89	98	97
LCSD 860-138343/4	Lab Control Sample Dup	96	94	104	96
MB 860-136702/8	Method Blank	89	121 *3	98	117
MB 860-138343/8	Method Blank	95	88	96	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-136702/8
Matrix: Water
Analysis Batch: 136702

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:12	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*63 - 144*		*12/27/23 12:12*	*1*
4-Bromofluorobenzene (Surr)	*121*	**3*	*74 - 124*		*12/27/23 12:12*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*12/27/23 12:12*	*1*
Toluene-d8 (Surr)	*117*		*80 - 120*		*12/27/23 12:12*	*1*

Lab Sample ID: LCS 860-136702/3
Matrix: Water
Analysis Batch: 136702

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.0500	0.04541		mg/L		91	75 - 125		
Toluene			0.0500	0.04036		mg/L		81	70 - 130		
Ethylbenzene			0.0500	0.04206		mg/L		84	75 - 125		
m,p-Xylenes			0.0500	0.04026		mg/L		81	75 - 125		
o-Xylene			0.0500	0.04314		mg/L		86	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*63 - 144*
4-Bromofluorobenzene (Surr)	*86*		*74 - 124*
Dibromofluoromethane (Surr)	*95*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 860-136702/4
Matrix: Water
Analysis Batch: 136702

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0500	0.04397		mg/L		88	75 - 125	3	25
Toluene			0.0500	0.03959		mg/L		79	70 - 130	2	25
Ethylbenzene			0.0500	0.04133		mg/L		83	75 - 125	2	25
m,p-Xylenes			0.0500	0.03911		mg/L		78	75 - 125	3	25
o-Xylene			0.0500	0.04234		mg/L		85	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 144*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*
Dibromofluoromethane (Surr)	*98*		*75 - 131*
Toluene-d8 (Surr)	*97*		*80 - 120*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 880-37238-1 MS
Matrix: Water
Analysis Batch: 136702

Client Sample ID: TMW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00100	U	0.0500	0.05456		mg/L		109	66 - 142
Toluene	<0.00100	U	0.0500	0.05081		mg/L		102	59 - 139
Ethylbenzene	<0.00100	U	0.0500	0.05310		mg/L		106	75 - 125
m,p-Xylenes	<0.0100	U	0.0500	0.05001		mg/L		100	75 - 125
o-Xylene	<0.00100	U	0.0500	0.05414		mg/L		108	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*63 - 144*
4-Bromofluorobenzene (Surr)	*90*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 860-138343/8
Matrix: Water
Analysis Batch: 138343

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 12:17	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 12:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 144*		*12/28/23 12:17*	*1*
4-Bromofluorobenzene (Surr)	*88*		*74 - 124*		*12/28/23 12:17*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 131*		*12/28/23 12:17*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 12:17*	*1*

Lab Sample ID: LCS 860-138343/3
Matrix: Water
Analysis Batch: 138343

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene			0.0500	0.06051		mg/L		121	75 - 125
Toluene			0.0500	0.05702		mg/L		114	70 - 130
Ethylbenzene			0.0500	0.05760		mg/L		115	75 - 125
m,p-Xylenes			0.0500	0.05797		mg/L		116	75 - 125
o-Xylene			0.0500	0.05664		mg/L		113	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*63 - 144*
4-Bromofluorobenzene (Surr)	*96*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*94*		*80 - 120*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-138343/4
Matrix: Water
Analysis Batch: 138343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0500	0.04994		mg/L		100	75 - 125	19	25
Toluene			0.0500	0.04755		mg/L		95	70 - 130	18	25
Ethylbenzene			0.0500	0.04807		mg/L		96	75 - 125	18	25
m,p-Xylenes			0.0500	0.04812		mg/L		96	75 - 125	19	25
o-Xylene			0.0500	0.04772		mg/L		95	75 - 125	17	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*
Dibromofluoromethane (Surr)	*104*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 860-136466/3
Matrix: Water
Analysis Batch: 136466

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

Analyte		MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride		<0.500	U	0.500		mg/L			12/22/23 17:14	1

Lab Sample ID: MB 860-136466/47
Matrix: Water
Analysis Batch: 136466

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

Analyte		MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride		<0.500	U	0.500		mg/L			12/23/23 02:30	1

Lab Sample ID: LCS 860-136466/48
Matrix: Water
Analysis Batch: 136466

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.826		mg/L		97	90 - 110		

Lab Sample ID: LCSD 860-136466/49
Matrix: Water
Analysis Batch: 136466

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			5.00	4.755		mg/L		95	90 - 110	1	20

Lab Sample ID: LLCS 860-136466/7
Matrix: Water
Analysis Batch: 136466

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

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			0.500	0.5214		mg/L		104	50 - 150		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 860-136563/1
Matrix: Water
Analysis Batch: 136563

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5.00	U	5.00		mg/L			12/26/23 17:40	1

Lab Sample ID: LCS 860-136563/2
Matrix: Water
Analysis Batch: 136563

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1107		mg/L		111	80 - 120		

Lab Sample ID: LCSD 860-136563/3
Matrix: Water
Analysis Batch: 136563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1108		mg/L		111	80 - 120	0	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

GC/MS VOA

Analysis Batch: 136702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	8260C	
880-37238-2	TMW-1	Total/NA	Water	8260C	
880-37238-3	TMW-9	Total/NA	Water	8260C	
MB 860-136702/8	Method Blank	Total/NA	Water	8260C	
LCS 860-136702/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-136702/4	Lab Control Sample Dup	Total/NA	Water	8260C	
880-37238-1 MS	TMW-10	Total/NA	Water	8260C	

Analysis Batch: 138343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-4	TMW-3	Total/NA	Water	8260C	
880-37238-5	TMW-2	Total/NA	Water	8260C	
880-37238-6	TMW-11	Total/NA	Water	8260C	
880-37238-7	TMW-12	Total/NA	Water	8260C	
880-37238-8	Dup-2	Total/NA	Water	8260C	
MB 860-138343/8	Method Blank	Total/NA	Water	8260C	
LCS 860-138343/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-138343/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 138894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	Total BTEX	
880-37238-2	TMW-1	Total/NA	Water	Total BTEX	
880-37238-3	TMW-9	Total/NA	Water	Total BTEX	
880-37238-4	TMW-3	Total/NA	Water	Total BTEX	
880-37238-5	TMW-2	Total/NA	Water	Total BTEX	
880-37238-6	TMW-11	Total/NA	Water	Total BTEX	
880-37238-7	TMW-12	Total/NA	Water	Total BTEX	
880-37238-8	Dup-2	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 136466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	300.0	
880-37238-2	TMW-1	Total/NA	Water	300.0	
880-37238-3	TMW-9	Total/NA	Water	300.0	
880-37238-4	TMW-3	Total/NA	Water	300.0	
880-37238-5	TMW-2	Total/NA	Water	300.0	
880-37238-6	TMW-11	Total/NA	Water	300.0	
880-37238-7	TMW-12	Total/NA	Water	300.0	
880-37238-8	Dup-2	Total/NA	Water	300.0	
MB 860-136466/3	Method Blank	Total/NA	Water	300.0	
MB 860-136466/47	Method Blank	Total/NA	Water	300.0	
LCS 860-136466/48	Lab Control Sample	Total/NA	Water	300.0	
LCSD 860-136466/49	Lab Control Sample Dup	Total/NA	Water	300.0	
LLCS 860-136466/7	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

General Chemistry

Analysis Batch: 136563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	SM 2540C	
880-37238-2	TMW-1	Total/NA	Water	SM 2540C	
880-37238-3	TMW-9	Total/NA	Water	SM 2540C	
880-37238-4	TMW-3	Total/NA	Water	SM 2540C	
880-37238-5	TMW-2	Total/NA	Water	SM 2540C	
880-37238-6	TMW-11	Total/NA	Water	SM 2540C	
880-37238-7	TMW-12	Total/NA	Water	SM 2540C	
880-37238-8	Dup-2	Total/NA	Water	SM 2540C	
MB 860-136563/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 860-136563/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 860-136563/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-10
Date Collected: 12/21/23 08:35
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:32	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:32	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:45	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-1
Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:53	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:53	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:58	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-9
Date Collected: 12/21/23 09:26
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 13:13	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 13:13	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:10	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-3
Date Collected: 12/21/23 09:36
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:23	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-2
Date Collected: 12/21/23 09:56
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:35	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-11

Date Collected: 12/21/23 10:11
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:48	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-12

Date Collected: 12/21/23 10:29
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:13	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: Dup-2

Date Collected: 12/21/23 00:00
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:01	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project/Site: EBDU #37 SDG: 19-0112-49

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-23-53	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project/Site: EBDU #37 SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET HOU
Total BTEX	Total BTEX Calculation	TAL SOP	EET HOU
300.0	Anions, Ion Chromatography	EPA	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET HOU
5030C	Purge and Trap	SW846	EET HOU

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37238-1	TMW-10	Water	12/21/23 08:35	12/21/23 13:49
880-37238-2	TMW-1	Water	12/21/23 08:58	12/21/23 13:49
880-37238-3	TMW-9	Water	12/21/23 09:26	12/21/23 13:49
880-37238-4	TMW-3	Water	12/21/23 09:36	12/21/23 13:49
880-37238-5	TMW-2	Water	12/21/23 09:56	12/21/23 13:49
880-37238-6	TMW-11	Water	12/21/23 10:11	12/21/23 13:49
880-37238-7	TMW-12	Water	12/21/23 10:29	12/21/23 13:49
880-37238-8	Dup-2	Water	12/21/23 00:00	12/21/23 13:49

37238

No. 2886

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/21/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EABU #37

LAI PROJECT # 19-0112-49 COLLECTOR AN/ASG

Data Reported to

TRRP report? ☐ Yes ☒ No

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

TIME ZONE Time zone/State: MNT/NM

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

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-10		12/21/23	0835	W	5				X		X	Direct Bill to APACHE
TMW-1			0858	W	5				X		X	
TMW-9			0924	W	5				X		X	
TMW-3			0936	W	5				X		X	
TMW-2			0956	W	5				X		X	
TMW-11			1011	W	5				X		X	
TMW-12			1029	W	5				X		X	
DUP-2			—	W	5				X		X	

TOTAL 8

880-37238 Chain of Custody

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
	12/21/23 1349	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY XENCO

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

LABORATORY USE ONLY:
RECEIVING TEMP 5.3/5.5 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Page 131 of 733
Received by OCD: 1/9/2025 3:05:52 PM
Page 23 of 26
Released to Imaging: 1/9/2025 4:04:07 PM
1/2/2024

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM

Eurofins Midland
1211 W Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-8753.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 880-37238-1
Address: 4145 Greenbriar Dr	Due Date Requested: 12/25/2023			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: EBDU #37	Project #: 88000515			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	8260C/5030C BTEX	Total_BTEX	2540C_Calcd	300_ORGFM_28D/ Chloride	Special Instructions/Note:
TMW-10 (880-37238-1)	12/21/23	08.35 Mountain		Water	X	X	X	X	
TMW-1 (880-37238-2)	12/21/23	08:58 Mountain		Water	X	X	X	X	
TMW-9 (880-37238-3)	12/21/23	09:26 Mountain		Water	X	X	X	X	
TMW-3 (880-37238-4)	12/21/23	09:36 Mountain		Water	X	X	X	X	
TMW-2 (880-37238-5)	12/21/23	09:56 Mountain		Water	X	X	X	X	
TMW-11 (880-37238-6)	12/21/23	10:11 Mountain		Water	X	X	X	X	
TMW-12 (880-37238-7)	12/21/23	10:29 Mountain		Water	X	X	X	X	
Dup-2 (880-37238-8)	12/21/23	Mountain		Water	X	X	X	X	

Temp 3.0 IR ID HOU-369
C/F -0.0
Corrected Temp. 3.0

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
FedEx			Fedex		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 12/22 12:21 pm	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Page 132 of 733

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1
SDG Number: 19-0112-49

Login Number: 37238
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1
SDG Number: 19-0112-49

Login Number: 37238
List Number: 2
Creator: Garcia, Yailet

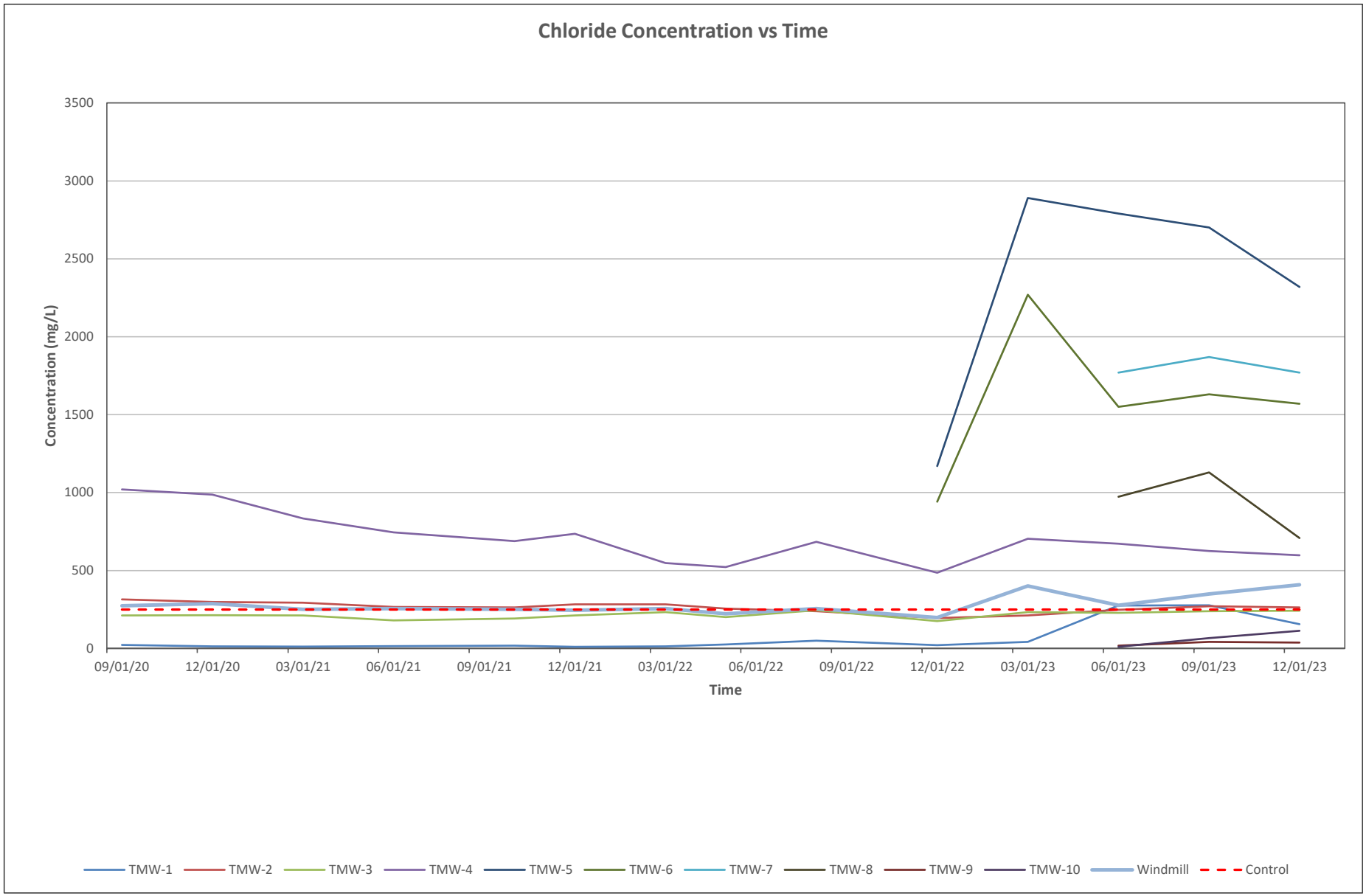
List Source: Eurofins Houston
List Creation: 12/22/23 03:42 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Appendix E

Chloride Control Chart

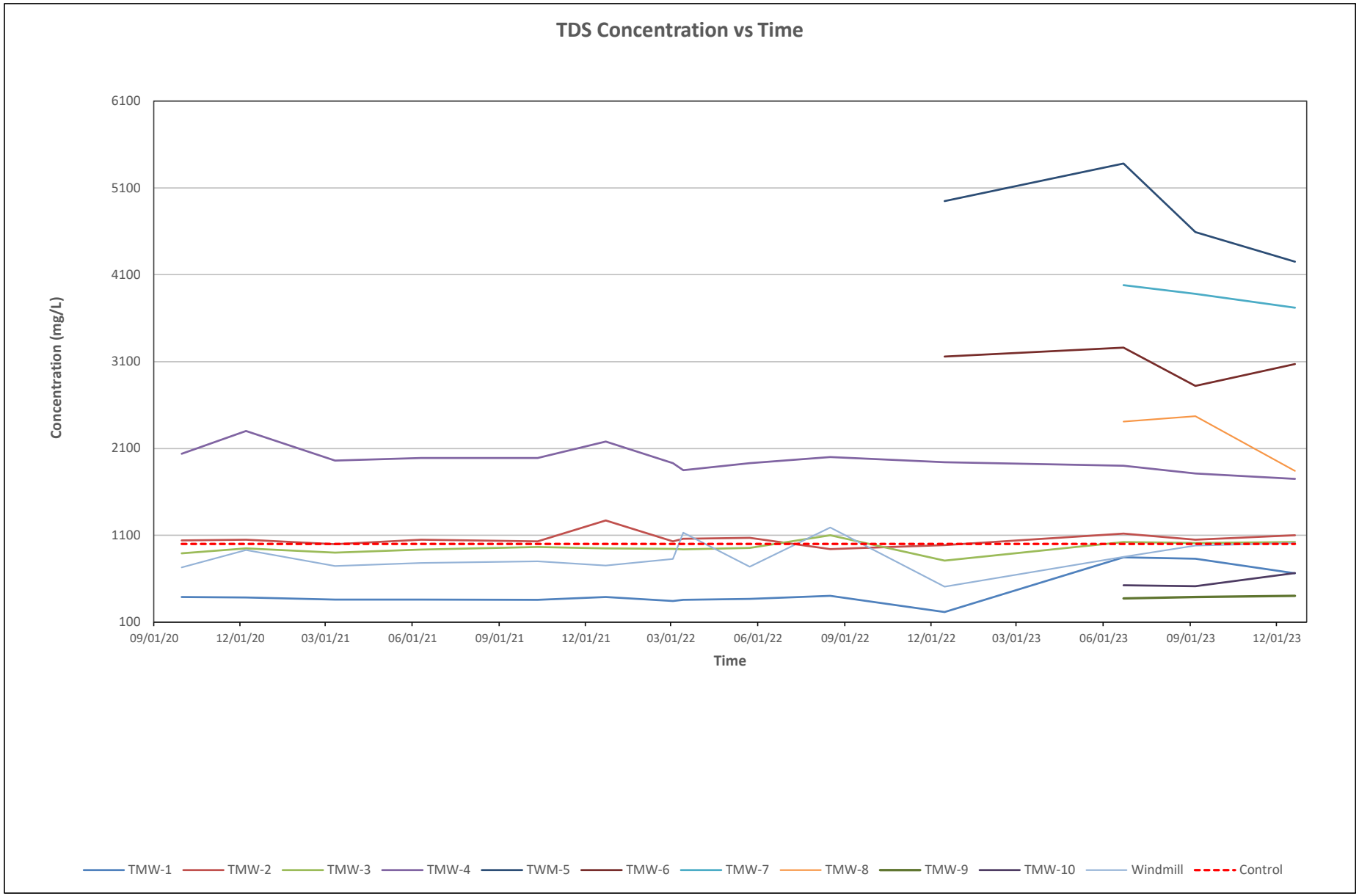
Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM



Appendix F

TDS Control Chart

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM



Larson & Associates, Inc.
Environmental Consultants

May 8, 2024

VIA EMAIL: RosaM.Romero@emnrd.nm.gov
Michael.Buchanan@emnrd.nm.gov
mike. batcher @emnrd.nm.gov

Ms. Rosa M. Romero
Environmental Bureau Chief
State of New Mexico – Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

Re: Apache Corp., EBDU #37 Incident NDHR1922141227 (1RP-5636) - Scope of Work for Additional Investigation, Lea County, New Mexico

Dear Ms. Romero:
Larson & Associates, Inc. (LAI), on behalf of Apache Corp. (Apache), has prepared this scope of work (SOW) for the produced water release at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/4, SW/4), Section 13, Township 21 South and Range 37 East in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°. Mr. William "Bill" Stevens is the surface owner. Figure 1 presents a topographic map.

The SOW is in response to video/telephone calls on April 1, 2024 and May 1, 2024, between Apache, New Mexico Oil Conservation Division (NMOCD) and LAI representatives. During the call on April 1, 2024, NMOCD requested Apache to:

- Install additional monitoring well (TMW-28) north of TMW-11 and TMW-12 to establish the northern (upgradient) limit or background for chloride in groundwater.
- Install additional monitoring well south (TMW-25) of TMW-23 and TMW-24 to establish the southern extent for chloride in groundwater.
- Determine the source for chloride (5,850 mg/L) reported in the groundwater sample from monitoring well TMW-17.
- Implement measures to prevent further impact to the onside water well (windmill) from chloride.
- Collect and analyze groundwater samples from the water well (windmill) for the entire list of constituents in 20.6.2.3102 NMAC including Human Health Standards in A (1) (a) through (tt), Other Standards for Domestic Water Supply in B. (1) through (10), and Standards for Irrigation Use in C (1) through (5).

On May 1, 2024, the following was requested:

- Install a monitoring well (TMW-29) north (up gradient) from monitoring well TMW-13.
- Update the analytical data table with complete analysis of the groundwater sample collected from the windmill on April 3, 2024.
- Collect and analyze groundwater samples for barium from monitoring wells TMW-1, TMW-3, and TMW-21.

APACHE EXHIBIT B-3

Background

On July 14, 2019, Apache reported a produced water release from a flowline at a pipeline junction located about 720 feet east from EBDU Well #37. Produced fluids (oil and water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown. Appendix A presents the initial C-141.

The spill area was remediated according to a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico", submitted to the NMOCD October 29, 2019. On December 23, 2019, NMOCD approved the remediation plan addendum based on a telephone call on December 20, 2019 (Bradford Billings) with following conditions:

- Installed four (4) monitoring wells (TMW-1 through TMW-4).
- Performed quarterly (4 times per year) groundwater monitoring from monitoring wells and a water well (windmill).

In all, Apache has spent over $750,000 to ensure the remediation was thorough and properly done in accordance with the NMOCD approved plan.

Investigations

Between November 28 and 30, 2022, at NMOCD's request, Apache installed two (2) monitoring wells (TMW-5 and TMW-6) east of the playa where the release terminated. Soil samples were collected from seven (7) bores including BH-1, BH-3, BH-4, and BH-5 located in the playa with the remaining bores (BH-6, BH-7, and BH-8) located in the release corridor north of the playa.

Following a conference call with NMOCD On April 4, 2023, Apache installed four (4) additional monitoring wells (TMW-7 through TMW-10) near the sources for the release (TMW-7), north of the playa (TMW-8) and west (TMW-9) and east (TMW-10) of TMW-1 near the south end of the playa. Figure 2 presents an aerial map for the soil borings and monitoring wells.

Apache requested LAI to prepare a plan for installing additional monitoring wells following a call with NMOCD on October 30, 2023. The plan was submitted to NMOCD on November 10, 2023. Between November 29, 2023 and December 13, 2023, Scarborough Drilling Inc. (SDI), under LAI oversight, installed fourteen (14) additional monitoring wells (TMW-11 through TMW-24) at locations specified in the scope of work (SOW) approved by NMOCD on November 14, 2023. NMOCD specified a monitoring well (TMW-17) be installed halfway between existing monitoring well TMW-5 and proposed monitoring well TMW-15. SDI drilled the inner ring of monitoring wells (TMW-11 through TMW-16) prior to installing the outer ring of monitoring wells (TMW-18 through TMW-22) based on laboratory analysis of groundwater samples for chloride. Two (2) additional wells (TMW-23 and TMW-24) installed south of TMW-18 and TMW-19 based on field chloride tests. Figure 2 presents the monitoring well locations. Appendix B presents NMOCD communications. Appendix C presents the laboratory chloride analysis.

SDI installed the monitoring wells in 5-inch diameter borings that were advanced with an air rotary rig between about sixty (60) feet (TMW-24) and eighty-nine (89) feet bgs. The monitoring wells were constructed in accordance with ASTM Designation: D5092 - Reapproved 2010 (*Standard Practice for Design and Installation of Groundwater Monitoring Wells*) with 2-inch diameter schedule 40 PVC casing and twenty (20) feet of 0.010-inch factory slotted screen that was positioned above and below the groundwater level observed during drilling. Graded silica sand was placed in the annuls between the borehole and well to about 2-feet above the screen. The remained of the annulus was filled to about 1-foot bs with bentonite chips and hydrated with potable water. The wells were secured with locking steel covers anchored concrete. Land Point Surveying, Midland, Texas, a State of New Mexico licensed professional land surveying firm, surveyed the wells for location and elevation including ground surface and top of casing (TOC). Drill cuttings were examined based on the Unified Soil Classification System (USCS) according to ASTM Designation: D2487 (*Standard Practice for Classification of Soils for Engineering Purposes*). Table 1 presents the monitoring well drilling and completion details. Appendix D presents the lithologic logs and well completion records.

Monitoring wells TMW-20 through TMW-24 terminated in silty clay (red bed) of the Triassic-age Chinle Formation (Dockum Group) between about sixty-three (63) feet bgs (TMW-24) and seventy-eight (78) feet bgs (TMW-20). An unconformity occurs between the silty clay (Chinle Formation) and overlying Ogallala Formation, consisting of fine-to-fine grained quartz sand. There are few distinctions between the Ogallala Formation and overlying Blackwater Draw Formation with color being a distinction from reddish yellow to reddish orange. The sand thickness increases from east to west towards Monument Draw and is mostly controlled by the eroded Chinle Formation. A layer of carbonate-indurated sand (caliche) likely caused where a zone of illuviation where carbonate dust accumulated from surface transportation by meteoric water movement, occurs above the sand and extends from near the surface and to about twenty (20) feet bgs. Figure 3 presents an aerial drawing showing the monitoring well locations lines of geological cross sections. Figure 3a through Figure 3d present the geological cross sections.

On December 20 and 21, 2023, groundwater was recorded in the Ogallala Formation between about 46.91 feet bgs (TMW-1) and 65.97 feet bgs (TMW-22). The saturated thickness ranged from about 6.97 feet (TMW-24) to greater than 26.22 feet (TMW-18). The groundwater potentiometric surface elevation ranged between 3,365.57 feet above mean sea level (MSL) at TMW-12 (up gradient) and 3,362.33 feet above MSL at TMW-24 (down gradient). The groundwater flow direction was generally from north to south at a gradient of about 0.003 feet per foot. Figure 4 presents the groundwater saturated thickness map for December 20 and 21, 2023. Figure 5a presents the groundwater potentiometric surface map for December 20 and 21, 2023.

On March 14, 2024, groundwater was recorded in the Ogallala Formation between about 46.78 feet bgs (TMW-1) and 65.96 feet bgs (TMW-22). Between December 21, 2023 and March 14, 2024, depth to groundwater decreased (rising aquifer conditions) between 0.01 feet (TMW-22) and 1.38 feet (TMW-11). During this same period, depth to groundwater increased 0.06 feet (TMW-05) and 0.98 feet (TMW-19) which represents falling aquifer conditions. The rising and lowering groundwater conditions are likely the result of seasonal fluctuation in the aquifer. On March 14, 2024, the groundwater potentiometric surface elevation ranged between 3,365.65 feet above mean sea level (MSL) at TMW-12 (up gradient) and 3,362.84 feet above MSL at TMW-23 (down gradient). The groundwater flow direction was generally from north to south at a gradient of about 0.003 feet per foot. Groundwater mounding near well TMW-4 from a slightly elevated groundwater potentiometric surface elevation causes groundwater to flow to the west, east and south. A slight reversal in the groundwater flow direction was observed in the vicinity of TMW-19 and TMW-24, from increased (rising) groundwater

potentiometric surface elevation in TMW-24 (3,362.40 feet) and decreased (falling) groundwater potentiometric surface elevation at TMW-19 3,361.88 feet) causes groundwater to flow towards TMW-19. Figure 5b presents the groundwater potentiometric surface map for March 14, 2024.

Groundwater samples were collected from monitoring wells with the TMW-1 through TMW-24 and the windmill on December 20 and 21, 2023 and March 14, 2024. Duplicate samples were collected for laboratory quality assurance and quality control (QA/QC) from wells TMW-17 and TMW-2 on December 20 and 21, 2023, respectively, from TMW-3 and TMW-14 on March 14, 2024. The groundwater samples, except from the windmill, were collected using the low stress or low flow method, according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017). The low stress or low flow method where an environmental pump was submerged near the middle of the water column and the well was pumped at a low rate until environmental parameters stabilized. Groundwater samples were collected from the discharge of the dedicated disposable Tygon® tubing. Groundwater samples from the windmill were collected from the end of the discharge pipe before the stock tank. The Tygon® tubing was discarded after each use and the pump was thoroughly cleaned with a solution potable water and laboratory grade detergent (Alconox®) and rinsed with distilled water. The samples were delivered under preservation and chain of custody to Eurofins Xenco Laboratories, Midland, Texas, which analyzed the samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA SW-846 Method 8021B, chloride by EPA Method 300 and total dissolved solids (TDS) by Method SM2540C. Table 2 presents the laboratory analytical data summary. Appendix E presents the laboratory reports.

BTEX compounds were not reported in the groundwater samples at concentrations above the analytical reporting limits (RP) in samples including duplicate samples collected on December 20 and 21, 2023 or March 14, 2024.

On December 20 and 21, 2023, chloride was reported in groundwater samples from monitoring wells TMW-1 through TMW-24 and the windmill at concentrations from 37.3 mg/L in monitoring well TMW-10 to 5,850 mg/L in groundwater from monitoring well TMW-17. The background chloride concentration was 463 mg/L (TMW-12). The chloride concentration in the windmill sample was 409 mg/L. On March 14, 2024, chloride was reported in groundwater samples at concentrations from 17.0 mg/L (TMW-10) to 5,680 mg/L (TMW-17). The background chloride concentration was 448 mg/L from monitoring well TMW-12. The chloride concentration in the windmill sample was 471 mg/L. Figure 6a and Figure 6b present isopleth maps for chloride concentrations in groundwater samples collected on December 20 and 21, 2033 and March 14, 2024, respectively.

On December 20 and 21, 2023, TDS was reported in groundwater samples from the monitoring wells and windmill at concentrations from 404 mg/L (TMW-9) and 10,300 mg/L (TMW-17). The background TDS concentration was 1,520 mg/L (TMW-12). The TDS concentration in the windmill sample was 1,010 mg/L. On March 14, 2024, chloride was reported in at concentrations from 373 mg/L (TMW-9) to 8,930 mg/L (TMW-17). The background TDS concentration was 1,390 mg/L from monitoring well TMW-12. The TDS concentration in the windmill sample was 1,080 mg/L. Figure 7a and Figure 7b present isopleth maps for TDS concentrations in groundwater samples collected on December 20 and 21, 2033 and March 14, 2024, respectively.

On April 3, 2024, at the request of NMOCD, Apache requested LAI personnel to collect a groundwater sample from the windmill for analysis of New Mexico Water Quality Control Commission (WQCC) human heath, domestic water quality and irrigation “3103” parameters in 20.6.2.3103 NMAC. The sample was collected from the discharge pipe near the windmill

and delivered under preservation and chain of custody to Xenco laboratories located in Midland, Texas. Table 3 presents the laboratory data summary. Appendix F presents the laboratory reports.

The laboratory reported barium (2.18 mg/L) and chloride (440 mg/L) above the WQCC human health and domestic water quality standards of 2.0 mg/L and 250 mg/L, respectively, on April 3, 2024.

On May 2, 2024, following the video/telephone call on May 1, 2024, LAI personnel collected groundwater samples from monitoring wells TMW-1, TMW-3, TMW-21, and windmill. The samples were delivered under preservation and COC to Xenco, which analyzed the samples for dissolved barium by EPA SW-846 Method 6020B. Table 2 presents the monitoring well and windmill analytical data summary. According to 20.6.2.3103, "the standards apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U.S. environmental protection agency*", with the exception that standards for mercury, organic compounds and non-aqueous liquids shall apply to the total nonfiltered concentrations of the contaminants". The initial sample from the windmill (April 3, 2024) was an unfiltered (total) analysis and therefore not valid for comparison to the standards in 20.6.2.3103NMAC. Samples collected on May 2, 2024, were filtered by the laboratory, and represent dissolved barium concentrations which are below the NMWQCC human health standard of 2.0 mg/L in 20.6.2.3103A(1) NMAC. The dissolved barium concentrations reported between 0.0299 mg/L (TMW-3) and 0.445 mg/L (TMW-1). The dissolved barium concentration in the windmill sample on May 2, 2024, was 0.220 mg/L.

Apache does not believe the any additional analysis is necessary and will discontinue collecting samples from the windmill for the "3103" parameters.

Scope of Work

Apache suspects the source of the chloride in groundwater from TMW-17 to be the same source for the spill. The source may have begun as an undetected pin-hole leak that migrated vertically to groundwater resulting in a density-driven chloride plume that migrated southward along the lower contact with the Triassic Dockum Group. To investigate this possible source scenario, boring BH-9 will be drilled near the junction box and monitoring well TMW-7. The soil samples will be collected with an air rotary rig beginning at ground surface and every five (5) feet to approximately fifty-five (55) feet bgs. The samples will be submitted to Xenco under chain of custody and analyzed for chloride by EPA Method 300. Figure 8 presents the approximate boring location.

Apache will install five (5) additional monitoring wells (TMW-25 through TMW-29) at locations shown on Figure 8a and Figure 8b. Monitoring well TMW-25 will be installed about 500 feet south of TMW-23 and TMW-24 to establish the downgradient limit of chloride in groundwater. Monitoring well TMW-26 will be installed about halfway between TMW-20 and TMW-23 to establish the downgradient and cross gradient concentration of chloride in groundwater. Monitoring well TMW-27 will be installed about 275 feet north-northwest of TMW-17 to confirm if chloride in groundwater is migrating southward from the junction box and is a suspect source for the release. This well will be completed as a recovery test well further described below. Monitoring well TMW-28 will be installed about 375 feet north of TMW-11 and TMW-12 to establish the up gradient or background chloride concentration in groundwater. Monitoring well TMW-29 will be installed about 375 feet north of TMW-13 to evaluate an additional source for the chloride and to establish the up gradient or background chloride concentration in groundwater.

Applications will be prepared and submitted to the State of New Mexico Office of the State Engineering (NMOSE) for approval and prior to installing monitoring wells TMW-25 through TMW-29. The wells will be installed about twenty (20) feet into the uppermost groundwater unit calculated to occur at depths between about fifty-five (55) feet at TMW-27 and TMW-28 and sixty (60) feet bgs at the remaining locations. Drilling will terminate about two (2) feet into the lower confining unit (Triassic Dockum Group), if encountered. The wells will be completed in a nominal 5-inch diameter bore except MW-27 that will be advanced with an air rotary rig. Potable water may be introduced during drilling to remove drill cuttings from the boreholes. The lithologies will be described and logs prepared according to ASTM D-2487 (*Standard Practice for Classification of Soils for Engineering Purposes*). The wells will be secured with locking steel covers anchored into a concrete apron measuring about 3 by 3 feet and about 4-inches thick. Land Point Surveying, Midland, Texas, will survey the wells for position and elevation including natural ground and top of casing (TOC). The following is a summary of the calculated depth to groundwater, proposed drilling and well screen depths:

Monitoring Well	Depth to Groundwater, Feet bgs	*Well Depth, Feet bgs	Well Screen Interval, Feet bgs
TMW-25	60	80	60 – 80
TMW-26	60	80	60 – 80
TMW-27	55	95	75 - 95
TMW-28	55	75	55 – 75
TMW-29	60	80	60 - 80

*Drilling will terminate about 2 feet into the lower confining unit (red bed) if encountered.

The wells will be developed by pumping with an electric submersible or mechanical pump to remove sediment disturbed during drilling and well installation. The pump will be fitted with new polyethene discharge tubing that will be discarded between wells. The foot valve will be thoroughly cleaned between wells with a solution of laboratory-grade detergent (Alconox®) and rinsed distilled water. Purged water and sediment will be captured in 55-gallon drums for disposal in a NMOCD permitted Class II commercial salt-water disposal (SWD) well.

Groundwater will be allowed to recover to near the pre-development level before collecting groundwater samples. Depth to groundwater will be gauged at TOC with an electronic water level meter. Groundwater samples will be collected from each monitoring well including the existing monitoring wells (TMW-1 through TMW-24) using the low stress or low flow method according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low rate until environmental parameters stabilize. Groundwater samples were collected from discharge through disposable Tygon® tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and Alconox® and rinsed with distilled water. The sample from the windmill will be collected from the pump discharge pipe. The samples will be transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody Xenco in Midland, Texas. Two (2) duplicate samples will be collected for laboratory quality assurance and quality control (QA/QC). Xenco will analyze the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, cations (calcium, magnesium, potassium, and sodium) by Method SW-6020B, anions (chloride and sulfate) by EPA Method 300, alkalinity by EPA Method M-2320B, and total dissolved solids (TDS) by EPA Method M-2540C.

Remediation

Apache proposes to complete monitoring well TMW-27 as a remediation test well (RW-1). The well will be installed in an appropriately sized borehole that will be advanced using air and water rotary drilling methods to near the top of the lower confining unit (red bed) estimated to occur between about eighty-five (85) and ninety-five (95) feet bgs. Potable water will be used to remove drill cuttings from the boreholes. The well will be constructed with a 5- inch schedule 40 PVC casing and screen with glued joints as no organic compounds (i.e., BTEX) have been detected in groundwater samples. The well screen approximately 20 to 25 feet in length will be 0.020-inch factory slotted and will be positioned near the bottom of the borehole. The well screen will be surrounded with graded silica sand or gravel compatible with the screen opening (0.020 inches) and will extend from near the bottom of the well to about 2 feet above the screen. The remaining annulus above the sand will be filled with bentonite chips to approximately 1-foot bgs and hydrated with potable water. An electric submersible pump will be used to evaluate the well yield and radius of influence during a pumping test. Water from drilling and pumping the well will be captured in portable (frac) tanks and disposed of in an NMOCD permitted commercial saltwater disposal (SWD) well. Options for managing the pump discharge during remediation will be evaluated based on the pumping test. Apache will work with the State of New Mexico Office of the State Engineer (OSE) for authorization to produce water from the recovery well for the remediation project. Apache will conduct semi-annual (twice yearly) monitoring of groundwater in the monitoring wells (TMW-1 through TMW-28 and recovery well (RW-1). The samples will be analyzed for BTEX, chloride, and TDS. It is anticipated that the groundwater remediation system will be operated between approximately 3 and 5 years. Apache will submit the remediation program results to the NMOCD in annual (once per year) reports that will include a summary of water volumes recovered and treated, laboratory analytical data summary tables, groundwater potentiometric surface maps, iosopleth maps for chloride and TDS, and laboratory reports. Apache will provide notification to NMOCD and landowner at least 7 days in advance of each event, excluding weekends.

Apache will discontinue monitoring groundwater from the windmill for WQCC human heath, domestic water quality and irrigation standards in 20.6.2.3103, based on only barium (2.18 mg/L) and chloride (440 mg/L) being detected above the WQCC human health and domestic water quality standards of 2.0 mg/L and 250 mg/L, respectively, on April 3, 2024.

Your approval of this SOW for additional investigation and proposed remediation test well is requested. Please contact Barrett Bole with Apache at (432) 818-1108 or email Barrett.Bole@apachecorp.com, Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com, Daniel St. Germain at (432) 664-5357 or dstgermain@laenvironmental.com or me to discuss any questions you may have.

Respectively,

Larson & Associates, Inc.



Mark J. Larson, P.G.
President/Sr. Hydrogeologist
Certified Professional Geologist #10490

Encl.

Tables

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-1	9/19/2019	65.85	62.50	2	3,411.21	42.32 - 61.97	3.36	3,414.57	09/23/2019	46.18	42.82	28.18	3,368.39
									12/26/2019	48.90	45.54	26.27	3,365.67
									09/30/2020	49.31	45.95	16.54	3,365.26
									12/07/2020	49.42	46.06	16.43	3,365.15
									03/11/2021	49.41	46.05	16.44	3,365.16
									06/10/2021	49.67	46.31	16.18	3,364.90
									10/11/2021	50.90	47.54	14.95	3,363.67
									12/22/2021	49.95	46.59	15.90	3,364.62
									03/01/2022	49.92	46.56	15.93	3,364.65
									05/23/2022	50.25	46.89	15.60	3,364.32
									08/16/2022	50.64	47.28	15.21	3,363.93
									12/15/2022	50.18	46.82	15.67	3,364.39
									03/14/2023	50.16	46.80	15.69	3,364.41
									06/22/2023	47.09	43.73	18.76	3,367.48
									09/06/2023	50.31	46.95	15.54	3,364.26
									12/21/2023	50.27	46.91	15.58	3,364.30
									03/14/2024	50.14	46.78	15.71	3,364.43
TMW-2	9/19/2019	70.85	80.00	2	3,421.30	47.50 - 67.17	2.86	3,424.16	09/23/2019	55.80	52.94	15.05	3,368.36
									12/26/2019	57.50	54.64	13.35	3,366.66
									09/30/2020	58.01	55.15	12.84	3,366.15
									12/07/2020	58.08	55.22	12.77	3,366.08
									03/11/2021	58.00	55.14	12.85	3,366.16
									06/10/2021	58.12	55.26	12.73	3,366.04
									10/11/2021	58.54	55.68	12.31	3,365.62
									12/22/2021	58.50	55.64	12.35	3,365.66
									03/01/2022	58.48	55.62	12.37	3,365.68

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									05/23/2022	58.62	55.76	12.23	3,365.54
									08/16/2022	58.98	56.12	11.87	3,365.18
									12/15/2022	58.76	55.90	12.09	3,365.40
									03/14/2023	58.70	55.84	12.15	3,365.46
									06/22/2023	58.27	55.41	12.58	3,365.89
									09/06/2023	59.05	56.19	11.80	3,365.11
									12/21/2023	58.95	56.09	11.90	3,365.21
									03/14/2024	58.86	56.00	11.99	3,365.30
TWM-3	9/29/2020	71.29	68.41	2	3,420.33	49.96 - 69.76	2.88	3,423.21	09/23/2019	--	--	--	--
									12/26/2020	--	--	--	--
									09/30/2020	57.62	54.74	13.67	3,365.59
									12/07/2020	57.68	54.80	13.61	3,365.53
									03/11/2021	57.59	54.71	13.70	3,365.62
									06/10/2021	57.90	55.02	13.39	3,365.31
									10/11/2021	58.31	55.43	12.98	3,364.90
									12/22/2021	58.18	55.30	13.11	3,365.03
									03/01/2022	58.14	55.26	13.15	3,365.07
									05/23/2022	58.41	55.53	12.88	3,364.80
									08/16/2022	58.87	55.99	12.42	3,364.34
									12/15/2022	58.44	55.56	12.85	3,364.77
									03/14/2023	58.36	55.48	12.93	3,364.85
									06/22/2023	57.53	54.65	13.76	3,365.68
									09/06/2023	58.85	55.97	12.44	3,364.36
									12/21/2023	58.61	55.73	12.68	3,364.60
									03/14/2024	58.47	55.59	12.82	3,364.74
TMW-4	9/29/2020	73.25	70.09	2	3,420.03	49.96 - 69.76	3.16	3,423.19	09/23/2019	--	--	--	--

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									12/26/2019	--	--	--	--
									09/30/2020	57.39	54.23	15.86	3,365.80
									12/07/2020	57.45	54.29	15.80	3,365.74
									03/11/2021	57.40	54.24	15.85	3,365.79
									06/10/2021	57.60	54.44	15.65	3,365.59
									10/11/2021	57.99	54.83	15.26	3,365.20
									12/22/2021	57.90	54.74	15.35	3,365.29
									03/01/2022	57.87	54.71	15.38	3,365.32
									03/29/2022	57.89	54.73	15.36	3,365.30
									05/23/2022	58.05	54.89	15.20	3,365.14
									08/16/2022	58.48	55.32	14.77	3,364.71
									12/15/2022	58.15	54.99	15.10	3,365.04
									03/14/2023	58.07	54.91	15.18	3,365.12
									06/22/2023	57.28	54.12	15.97	3,365.91
									09/06/2023	58.45	55.29	14.80	3,364.74
									12/20/2023	58.31	55.15	14.94	3,364.88
									03/14/2024	58.19	55.03	15.06	3,365.00
TMW-5	11/28/2022	78.59	75.50	2	3,418.91	54.37 - 74.32	2.95	3,421.86	12/15/2022	57.91	54.96	20.68	3,363.95
									03/14/2023	57.27	54.32	21.32	3,364.59
									06/22/2023	55.63	52.68	22.96	3,366.23
									09/06/2023	57.63	54.68	20.96	3,364.23
									12/20/2023	57.49	54.54	21.10	3,364.37
									03/14/2024	57.55	54.60	21.04	3,364.31
TMW-6	11/28/2022	72.10	73.00	2	3,424.13	54.37 - 74.32	2.42	3,426.55	12/15/2022	62.17	59.75	9.93	3,364.38
									03/14/2023	62.08	59.66	10.02	3,364.47

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
									06/22/2023	61.41	58.99	10.69	3,365.14
									09/06/2023	61.95	59.53	10.15	3,364.60
									12/20/2023	61.88	59.46	10.22	3,364.67
									03/14/2024	61.79	59.37	10.31	3,364.76
TMW-7	6/13/2023	83.85	80.99	2	3,423.07	61.29 - 80.78	2.86	3,425.93	06/19/2023	60.35	57.49	23.50	3,365.58
									06/22/2023	63.34	60.48	20.51	3,362.59
									09/06/2023	60.98	58.12	22.87	3,364.95
									12/20/2023	60.91	58.05	22.94	3,365.02
									03/14/2024	60.81	57.95	23.04	3,365.12
TMW-8	6/12/2023	76.55	73.75	2	3,417.28	53.83 - 73.74	2.80	3,420.08	06/20/2023	54.04	51.24	22.51	3,366.04
									06/22/2023	54.02	54.00	22.53	3,366.06
									09/06/2023	55.39	52.59	21.16	3,364.69
									12/20/2023	55.23	52.43	21.32	3,364.85
									03/14/2024	55.12	52.32	21.43	3,364.60
TMW-9	6/13/2023	71.90	69.03	2	3,414.62	49.41 - 68.72	2.87	3,417.49	06/21/2023	51.11	48.24	20.79	3,366.38
									06/22/2023	51.14	48.27	20.76	3,366.35
									09/06/2023	53.66	50.79	18.24	3,363.83
									12/21/2023	53.55	50.68	18.35	3,363.94
									03/14/2024	53.45	50.58	18.45	3,364.76
TMW-10	6/14/2023	72.76	69.81	2	3,415.26	49.68 - 68.99	2.95	3,418.21	06/20/2023	51.57	48.62	21.19	3,366.64
									06/22/2023	51.61	48.66	21.15	3,366.60
									09/06/2023	54.21	51.26	18.55	3,364.00
									12/21/2023	54.12	51.17	18.64	3,364.09
									03/14/2024	54.02	51.07	18.74	3,364.19
TMW-11	11/29/2023	76.75	73.95	2	3,421.56	53.30 - 73.27	2.80	3,424.35	12/21/2023	59.92	57.12	16.83	3,364.43
									03/14/2024	58.85	56.05	17.90	3,365.50

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-12	11/30/2023	85.73	82.81	2	3,424.30	60.16 - 82.13	2.92	3,427.22	12/21/2023 03/14/2024	61.65 61.57	58.73 58.65	24.08 24.16	3,365.57 3,365.65
TMW-13	12/4/2023	86.67	83.90	2	3,426.21	63.24 - 83.21	2.77	3,428.98	12/20/2023 03/14/2024	63.75 63.68	60.98 60.91	22.92 22.99	3,365.23 3,365.30
TMW-14	12/1/2023	88.64	85.61	2	3,426.78	64.96 - 84.93	2.76	3,429.54	12/20/2023 03/14/2024	65.02 64.99	62.26 62.23	23.62 23.38	3,364.52 3,364.55
TMW-15	11/30/2023	83.14	79.62	2	3,423.18	58.97 - 78.94	2.79	3,425.97	12/20/2023 03/14/2024	61.79 61.71	59.00 58.92	21.35 58.92	3,364.18 3,364.26
TMW-16	11/29/2023	84.82	81.79	2	3,420.73	59.14 - 81.11	2.92	3,423.65	12/20/2023 03/14/2024	60.19 60.08	57.27 57.16	24.63 24.63	3,363.46 3,363.57
TMW-17	11/28/2023	84.68	81.46	2	3,422.52	60.81 - 80.78	3.16	3,425.68	12/20/2023 03/14/2024	61.56 61.43	58.40 58.27	23.12 23.19	3,364.12 3,364.25
TMW-18	12/5/2023	88.57	85.05	2	3,422.29	64.57 - 84.51	3.32	3,425.61	12/20/2023 03/14/2024	62.15 62.01	58.83 58.69	26.42 26.56	3,363.46 3,363.60
TMW-19	12/5/2023	83.50	80.31	2	3,420.79	59.66 - 79.63	2.99	3,423.78	12/20/2023 03/14/2024	60.92 61.90	57.93 59.91	22.58 20.60	3,362.86 3,361.88
TMW-20	12/6/2023	77.50	74.52	2	3,426.46	53.90 - 73.87	2.88	3,429.34	12/20/2023 03/14/2024	65.26 65.21	62.38 62.33	12.24 12.91	3,364.08 3,364.13
TMW-21	12/7/2023	74.22	71.80	2	3,429.87	51.15 - 71.12	2.33	3,432.20	12/20/2023 03/14/2024	67.31 67.29	64.98 64.96	6.91 6.84	3,364.89 3,364.91
TMW-22	12/7/2023	73.01	70.02	2	3,431.29	49.37 - 69.34	2.89	3,434.17	12/20/2023 03/14/2024	68.86 68.85	65.97 65.96	4.15 4.06	3,365.31 3,365.22

Table 1
Monitoring Well Completion and Gauging Summary
Apache Corporation, EBDU 37
Incident ID: nDHR1922141227
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-23	12/13/2023	72.34	69.35	2	3,421.28	48.69 - 68.66	2.95	3,424.23	12/20/2023 03/14/2024	61.51 61.39	58.56 58.44	10.83 10.91	3,362.72 3,372.84
TMW-24	12/13/2023	63.02	59.98	2	3,418.54	39.33 - 59.30	3.20	3,421.74	12/20/2023 03/14/2024	59.41 59.28	56.21 56.08	3.61 3.90	3,362.33 3,362.46

Notes:
Monitoring wells installed by Scarborough Drilling Inc., Lamesa, Texas, with 2-inch schedule 40 PVC casing and screen.
bgs: below ground surface
TOC: top of casing
AMSL: above mean sea level

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
Windmill	[1] 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	[2] 09/23/2019	--	--	--	--	--	--	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**259**	688	--
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**274**	730	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**287**	930	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**252**	745	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**255**	781	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**251**	800	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	246	751	--
	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	828	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	222	738	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	**1,190**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	198	508	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**401**	**1,130**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**276**	852	--
	[4] 09/07/2023	<0.00200	<0.00200	<0.00400	<0.00400	**350**	981	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**409**	**1,010**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**471**	**1,080**	--
	04/03/2024	--	--	--	--	--	--	**2.18**
	05/02/2024	--	--	--	--	--	--	0.220
TMW-1	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	--
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	--
	[3] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	17.5	358	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.3	391	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	13.2	343	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	26.0	369	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	50.3	404	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	21.4	216	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	41.9	358	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**275**	845	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**277**	830	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	156	662	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00404	136	551	--
	05/02/2024	--	--	--	--	--	--	0.445
TMW-2	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	**338**	**1,220**	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**307**	**1,170**	--
	[3] 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	**314**	**1,040**	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**298**	**1,050**	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**293**	**1,000**	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**267**	**1,050**	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**263**	**1,030**	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**284**	**1,270**	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**282**	**1,030**	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
	[4] 05/23/2022	<0.00200	<0.00200	<0.00400	<0.00400	**256**	**1,070**	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00400	<0.00400	239	940	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	195	985	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	211	**1,060**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	248	**1,120**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	**1,050**	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**264**	**1,100**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	249	992	
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	192	967	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	211	949	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	233	944	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	202	955	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	245	**1,100**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	175	808	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	233	940	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	229	**1,020**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	240	**1,010**	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	242	**1,020**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	234	959	
	05/02/2024	--	--	--	--	--	--	0.0299
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	**1,020**	**2,040**	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**987**	**2,300**	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**834**	**1,960**	--
	[3] 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**745**	**1,990**	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**689**	**1,990**	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**735**	**2,180**	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**1,610**	**2,080**	--
	[4] 03/29/2022	<0.00200	<0.00200	<0.00200	**0.00700**	**547**	**1,930**	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	**522**	**1,930**	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**684**	**2,000**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**486**	**1,940**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**703**	**1,850**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**673**	**1,900**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**625**	**1,810**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**598**	**1,750**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**580**	**1,750**	
TMW-5	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,170**	**4,950**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,890**	**5,200**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**2,790**	**5,380**	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,700**	**4,590**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,320**	**4,250**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,980**	**5,360**	--
TMW-6	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**941**	**3,160**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,270**	**3,200**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,550**	**3,260**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,630**	**2,820**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,570**	**3,070**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,500**	**3,280**	--
TMW-7	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,770**	**3,980**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,870**	**3,880**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,770**	**3,720**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,740**	**3,690**	--
TMW-8	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**974**	**2,410**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,130**	**2,470**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00200	**709**	**1,840**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**655**	**1,830**	--
TMW-9	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	18.0	373	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	41.8	390	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	37.3	404	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	29.3	373	--
TMW-10	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	9.89	525	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	67.0	514	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	114.0	666	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	17.0	405	--
TMW-11	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**350**	**1,190**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**318**	**1,090**	--
TMW-12	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**463**	**1,520**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**448**	**1,390**	--
TMW-13	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,730**	**3,680**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,690**	**3,480**	--
TMW-14	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,500**	**5,140**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,810**	**2,820**	--
TMW-15	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,120**	**3,870**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,160**	**3,400**	
TMW-16	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	85.5	495	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	43.0	380	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
TMW-17	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,850**	**10,300**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**5,680**	**8,930**	--
TMW-18	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,050**	**6,430**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**908**	**1,650**	--
TMW-19	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**927**	**1,860**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**553**	**1,070**	--
TMW-20	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**287**	927	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**385**	937	--
TMW-21	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**262**	885	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**310**	902	
	05/02/2024	--	--	--	--	--	--	0.0471
TMW-22	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	939	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**342**	918	--
TMW-23	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**895**	**1,980**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,020**	**2,020**	--
TMW-24	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**271**	**1,050**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**330**	**1,060**	--
DUP-1 (Windmill)	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**276**	794	--
DUP-1 (Windmill)	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**278**	908	--
DUP-1 (Windmill)	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**259**	798	--
DUP-1 (Windmill)	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**256**	781	--
DUP-1 (Windmill)	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**250**	830	--
DUP-1 (Windmill)	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	243	796	--
Dup-1 (TMW-2)	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**297**	**1,010**	--
Dup-2 (Windmill)	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**491**	787	--
Dup-1 (Windmill)	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	215	729	--
Dup-1 (Windmill)	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**283**	**1,120**	--
Dup-1 (TMW-5)	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,410**	**4,520**	--
Dup-1 (Windmill)	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**413**	**1,130**	--
Dup-1 (Windmill)	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**273**	855	--
Dup-1 (TMW-5)	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**3,030**	**5,850**	--
Dup-1 (TMW-17)	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,830**	**10,300**	--
Dup-2 (TMW-2)	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**265**	**1,010**	--
Dup-1 (TMW-3)	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**328**	986	--
Dup-2 (TMW-14)	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,330**	**2,530**	--

Notes:
([1]): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).
([2]): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([3]): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([4]): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
<: concentration is less than analytical method reporting limit (RL).
*: NMWQCC Human Health Standard
**: NMWQCC Domestic Water Quality Standard

Table 3

20.6.2.3101 NMAC

Laboratory Analytical Data Summary

Windmill, EBDU 37, Lea County, New Mexico

20.6.2.3103 NMAC - Human Health Standards							
A.	**Parameter**	**mg/L**	**4/3/2024**	**5/2/2024**			
(a)	Antimony	0.006	<0.00400	--			
(b)	Arsenic	0.01	<0.00400	--			
(c)	Barium	2.0	**2.18**	*0.220			
(d)	Beryllium	0.004	<0.00200	--			
(e)	Cadmium	0.005	<0.00200	--			
(f)	Chromium	0.05	<0.00400	--			
(g)	Cyanide	0.2	<0.00500	--			
(h)	Fluoride	1.6	<1.00	--			
(i)	Lead	0.015	<0.00200	--			
(j)	Mercury (Total)	0.002	<0.000200	--			
(k)	Nitrate	10.0	**2.78**	--			
(l)	Nitrite	1.0	<0.100	--			
(m)	Selenium	0.05	<0.00200	--			
(n)	Silver	0.05	<0.00200	--			
(o)	Thallium	0.002	<0.00200	--			
(p)	Uranium	0.03	**0.00315**	--			
(q)	Radioactivity (combined R226 and R228)	5.0	**0.945**	--			
(r)	Benzene	0.005	<0.00100	--			
(s)	Polchlorinated biphenyls (PCB)	0.0005	<0.000262	--			
(t)	Toluene	1.0	<0.00100	--			
(u)	Carbon Tetrachloride	0.005	<0.00500	--			
(v)	1,2-dichloroethane (EDC)	0.005	<0.00100	--			
(w)	1,1-dichloroethylene	0.007	<0.00100	--			
(x)	Tetrachloroethylene (PCE)	0.005	<0.00100	--			
(y)	Trichloroethylene (TCE)	0.005	<0.00500	--			
(z)	Ethylbenzene	0.70	<0.00100	--			
(aa)	Xylenes (Total)	0.62	<0.0100	--			
(bb)	Methylene Chloride	0.005	<0.00500	--			
(cc)	Chloroform	0.1	<0.00100	--			
(dd)	1,1-Dichloroethane	0.025	<0.00100	--			
(ee)	Ethylene Dibromide (EDB)	0.00005	<0.00500	--			
(ff)	1,1,1-trichloroethane	0.20	<0.00100	--			
(gg)	1,1,2-trichloroethane	0.005	<0.00100	--			
(hh)	1,1,2,2-tetrachloroethane	0.01	<0.00100	--			
(ii)	vinyl chloride	0.002	<0.002	--			
(jj)	PAHs: total naphthalene plus monomethylnapthalenes	0.03	<0.571	--			
(kk)	benzo-a-pyrene	0.0002	<0.571	--			
(ll)	cis-1,2-dichloroethene	0.07	<0.00100	--			
(mm)	trans-1,2-dichloroethene	0.1	<0.00100	--			
(nn)	1,2-dichloropropane (PDC)	0.005	<0.00500	--			
(oo)	Styrene	0.1	<0.00100	--			
(pp)	1,2-dichlorobenzene	0.60	<0.00100	--			
(qq)	1,4-dichlorobenzene	0.075	<0.00100	--			
(rr)	1,2,4-trichlorobenzene	0.07	<0.00500	--			
(ss)	pentachlorophenol	0.001	<1.14	--			
(tt)	atrazine	0.003	<0.500	--			

Table 3

20.6.2.3101 NMAC

Laboratory Analytical Data Summary

Windmill, EBDU 37, Lea County, New Mexico

20.6.2.3103 NMAC - Standards for Domestic Water Supply							
B.	**Parameter**	**mg/L**	4/3/2024				
(1)	Chloride	250.0	**440**	--			
(2)	Copper	1.0	**0.00509**	--			
(3)	Iron	1.0	<0.100	--			
(4)	Manganese	0.2	<0.00200	--			
(5)	Phenols	0.005	<0.0100	--			
(6)	Sulfate	600.0	**56.5**	--			
(7)	Total Dissolved Solids (TDS)	1,000.0	**1,000**	--			
(8)	Zinc	10.0	**0.00465**	--			
(9)	pH	6 - 9	7.3	--			
(10)	Methy tertiary-butyl ether (MTBE)	0.1	<0.00500	--			
20.6.2.3103 NMAC - Standards for Irrigation Use							
B.	**Parameter**	**mg/L**	4/3/2024	**5/2/2024**			
(1)	Aluminum	5.0	<0.0200	--			
(2)	Boron	0.75	**0.154**	--			
(3)	Cobalt	0.05	<0.00200	--			
(4)	Molybdenum	1.0	<0.00200	--			
(5)	Nickel	0.2	<0.00200	--			

Notes: Analysis performed by Eurofins Xenco Laboratories, Midland, Texas, by EPA SW-846 Methods.
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
< Indicates analyte concentration is less than reporting limit (RL)
Bold indicates analyte concentration exceeds the reporting limit (RL) but below the regulatory limit
Bold and highlighted indicates analyte concentration exceeds RL and regulatory limit

Figures

Page 160 of 733

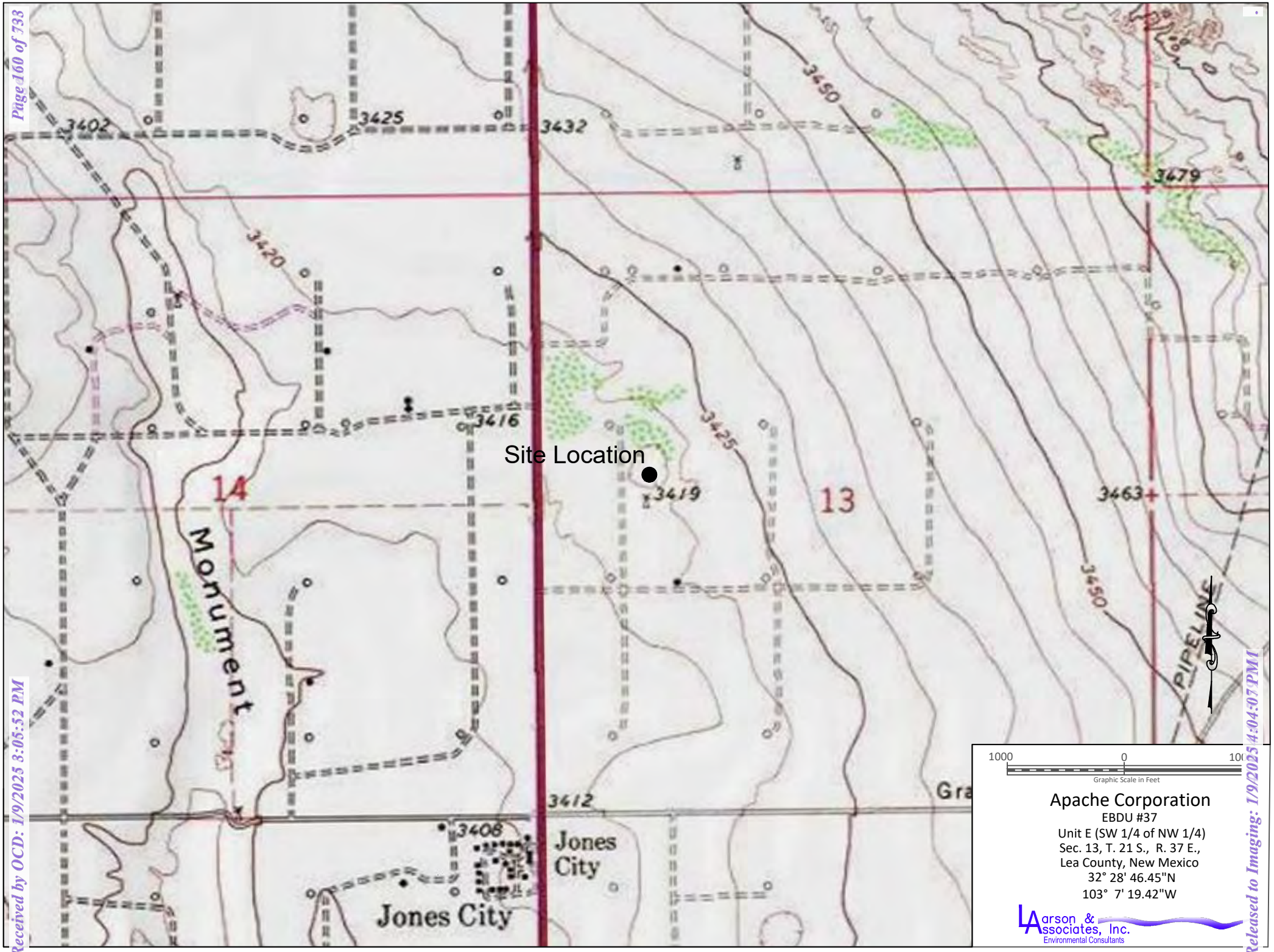


Figure 1 - Topographic Map

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Page 161 of 733

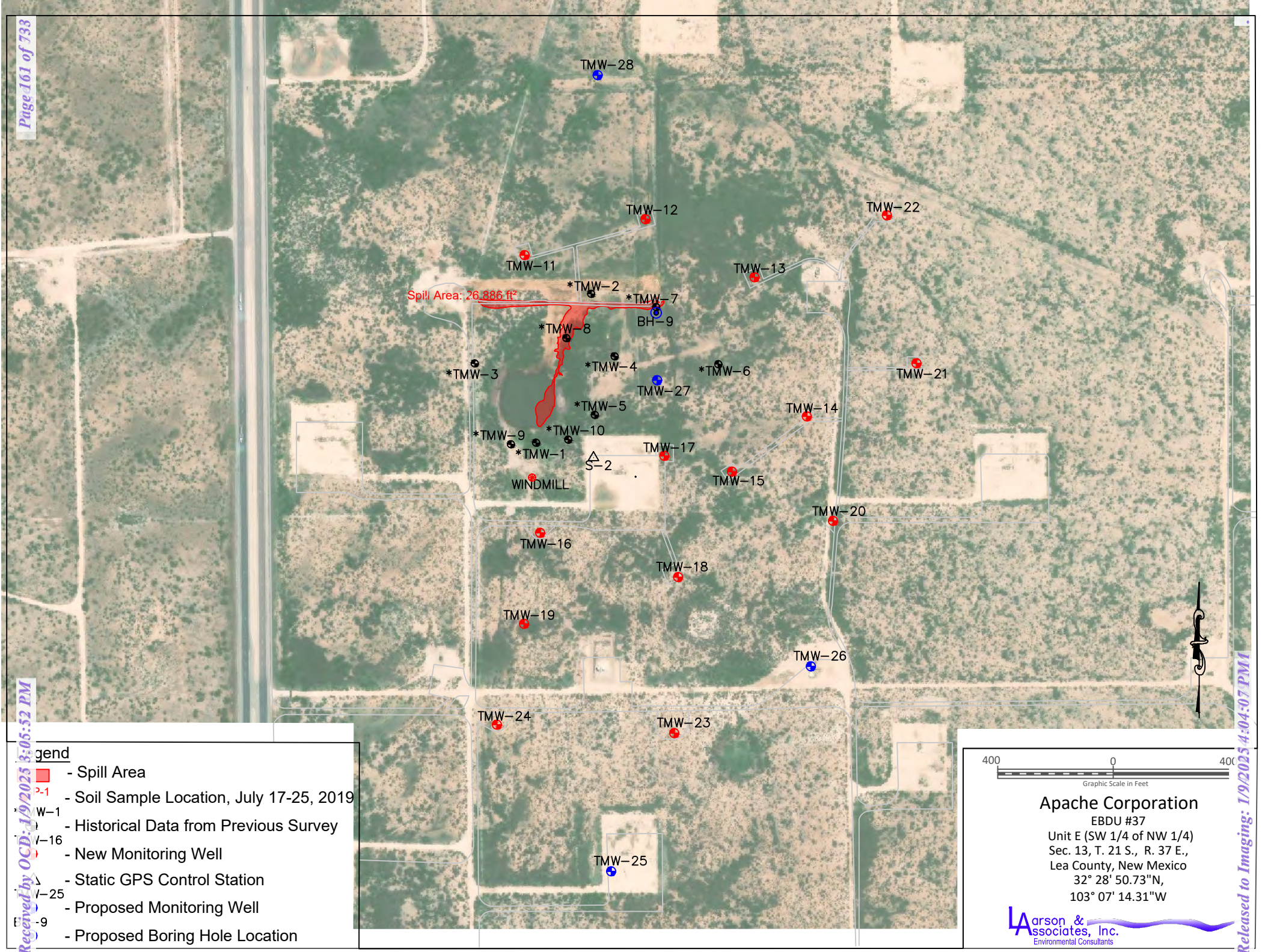


Figure 2 - Aerial Map Showing Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Page 162 of 733

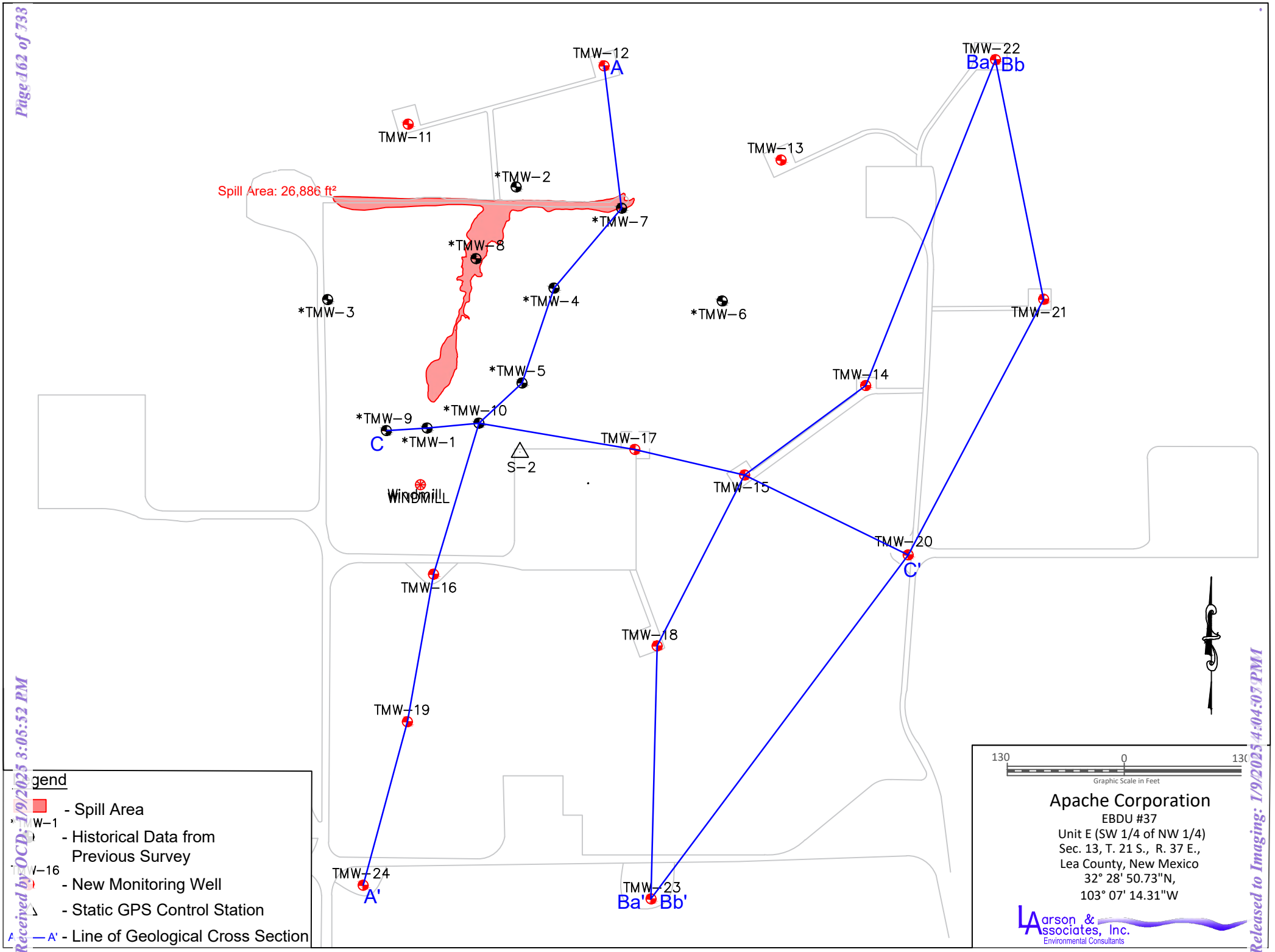
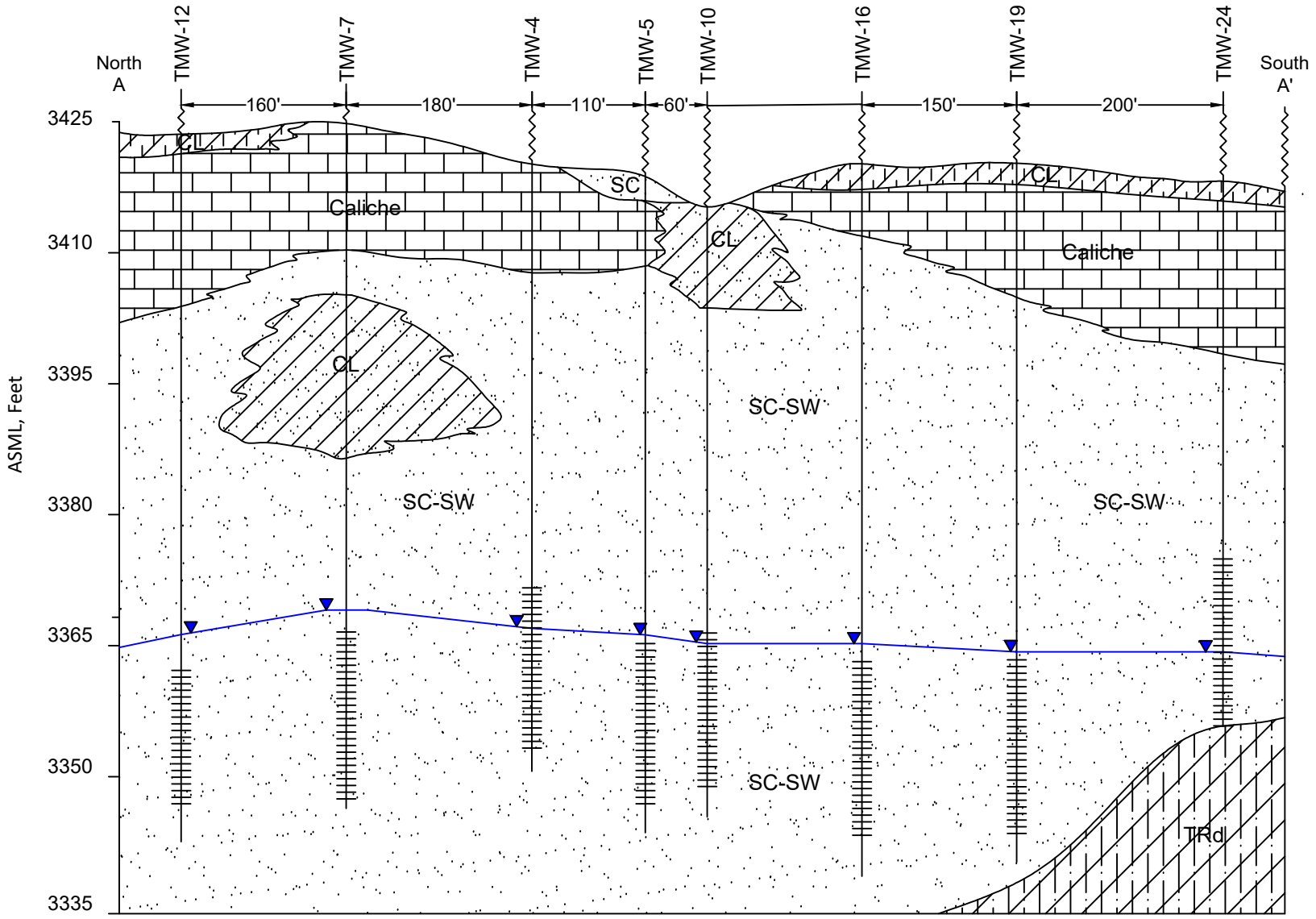


Figure 3 - Site Map and Lines of Geological Cross Sections

Received by OCD: 1/9/2025 8:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 163 of 733



Legend

- Silty Clay/Top Soil (CL)
- Sandy Clay (CL)
- Groundwater Potentiometric Surface, December 21, 2023
- Caliche
- Sand (SC-SW)
- Silty Clay (Triassic Chinle Fm.)
- Well Screen

-Vertical Scale: 1"=15'
-Horizontal Scale: 1"=125'
-Vertical Exaggeration: X5.33

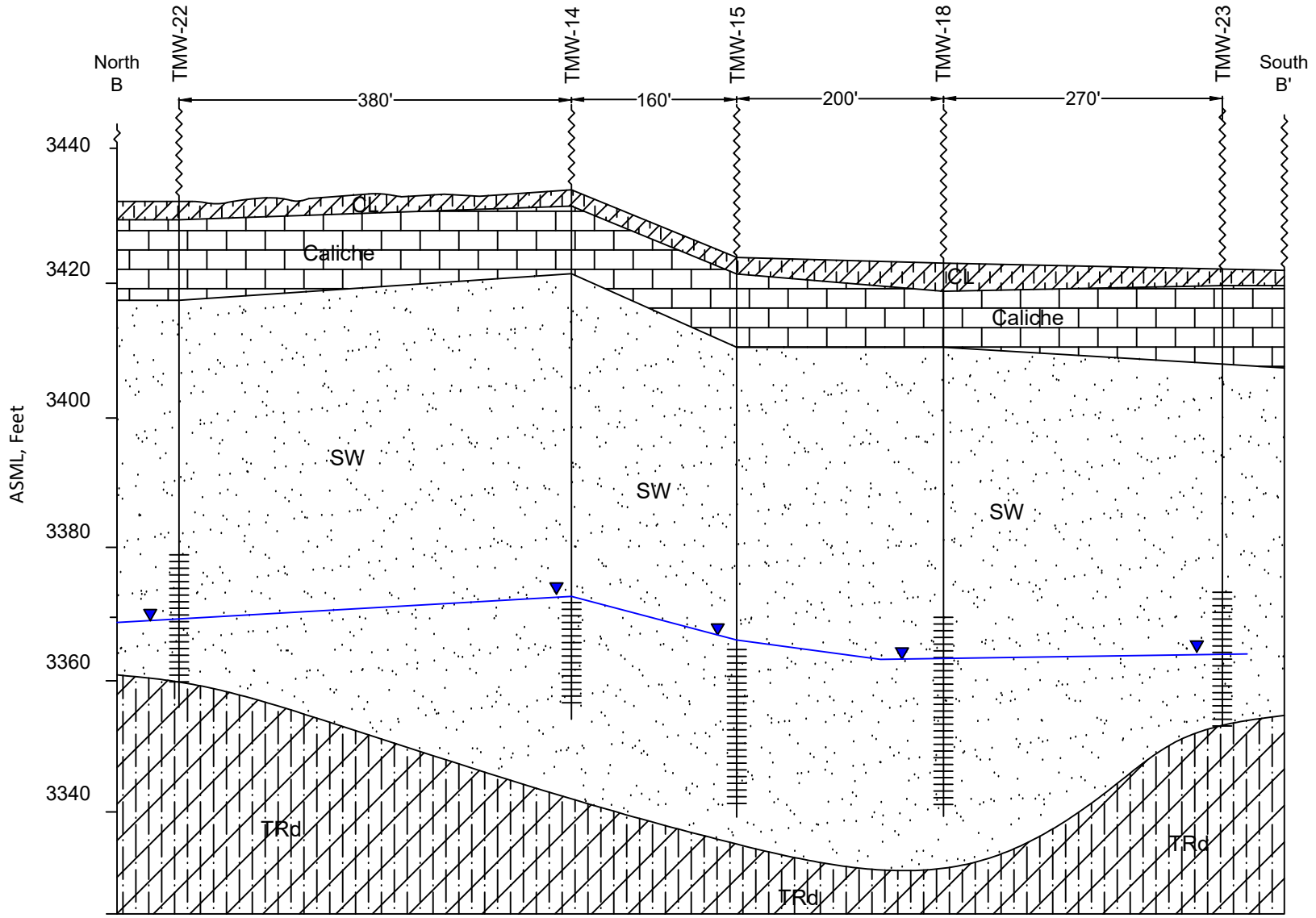
Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3a - Geological Cross Section A-A' (N-S)

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 164 of 733



Legend

- Silty Clay/Top Soil (CL)
- Caliche
- Groundwater Potentiometric Surface, December 21, 2023
- Sand (SW)
- Silty Clay (Triassic Chinle Fm.)
- Well Screen

-Vertical Scale: 1"=20'
-Horizontal Scale: 1"=125'
-Vertical Exaggeration: X6.5

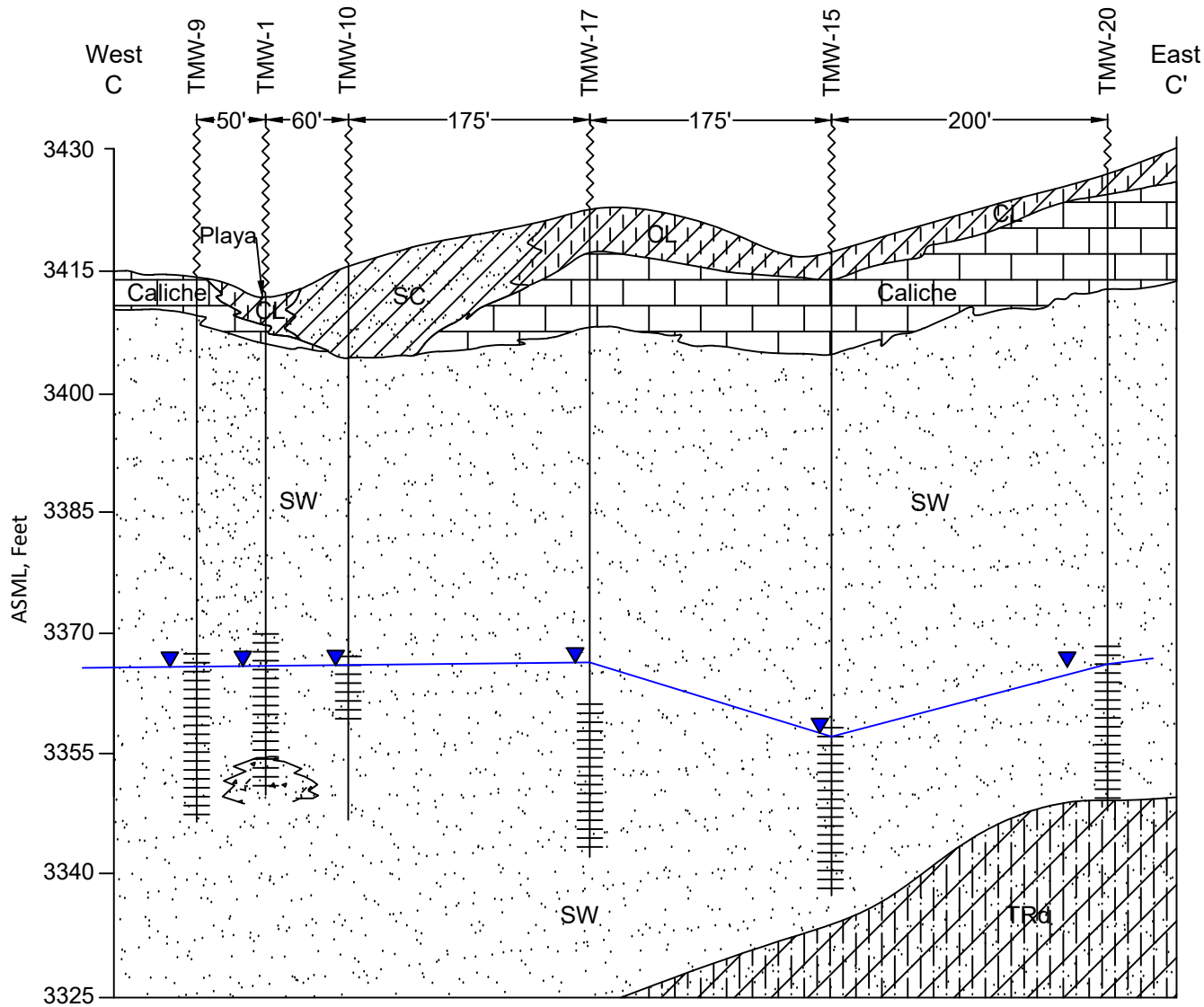
Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3b - Geological Cross Section Ba-Ba' (N-S)

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 165 of 733



Legend

- Silty Clay/Top Soil (CL)
- Sandy Clay (CL)
- Groundwater Potentiometric Surface, December 21, 2023
- Caliche
- Sand (SW)
- Silty Clay (Triassic Chinle Fm)
- Well Screen

-Vertical Scale: 1''=15'
-Horizontal Scale: 1''= 80'
-Vertical Exaggeration: X5.3

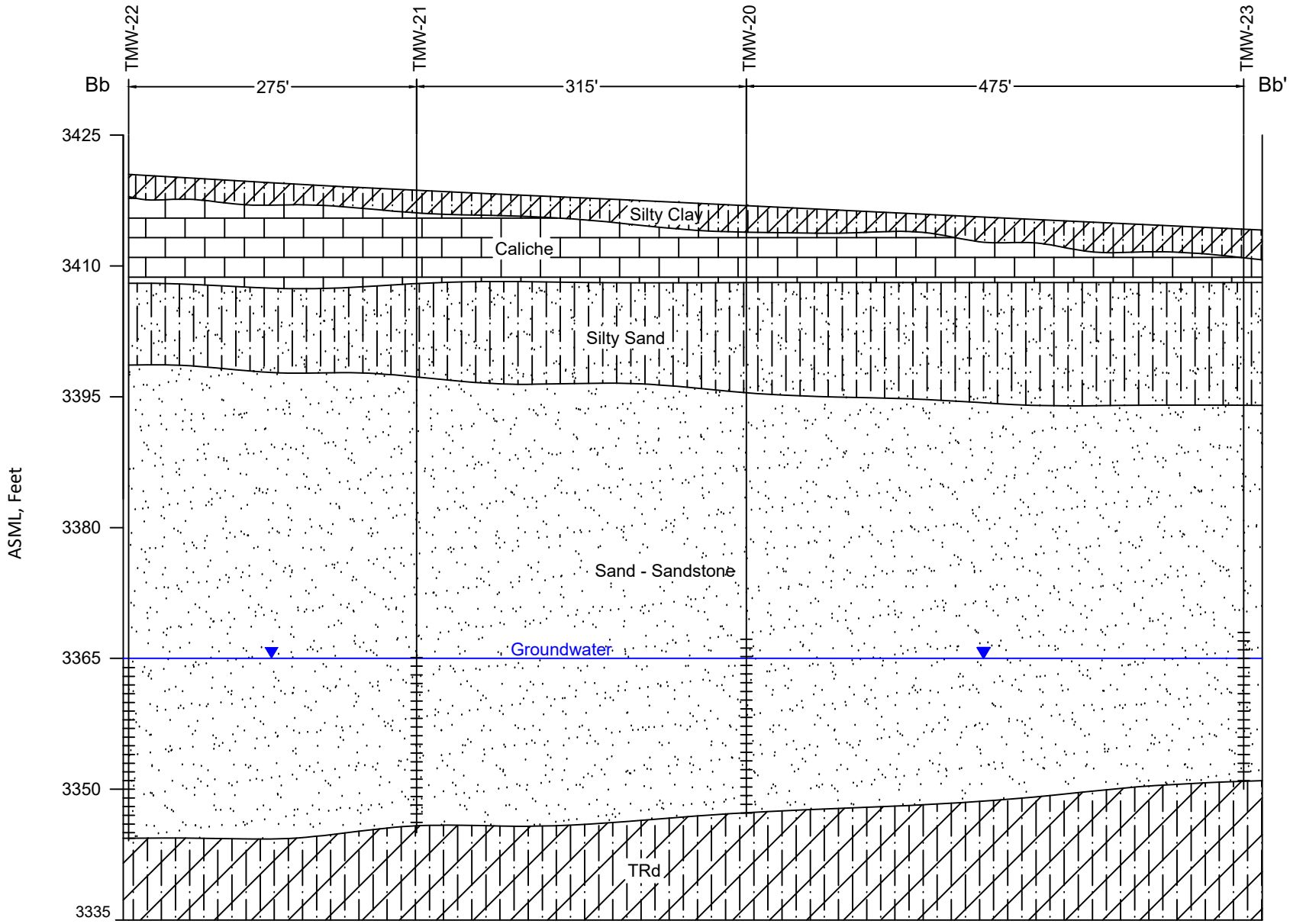
Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3c - Geological Cross Section C-C' (W-E)

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 166 of 733



Legend

- Silty Clay/Top Soil (CL)
- Silty Sand (SM)
- Groundwater Potentiometric Surface, December 21, 2023
- Caliche
- Sand (SW)
- Silty Clay (Triassic Chinle Fm)
- Well Screen

-Vertical Scale: 1''=15'
-Horizontal Scale: 1''= 140'
-Vertical Exaggeration: X5.3

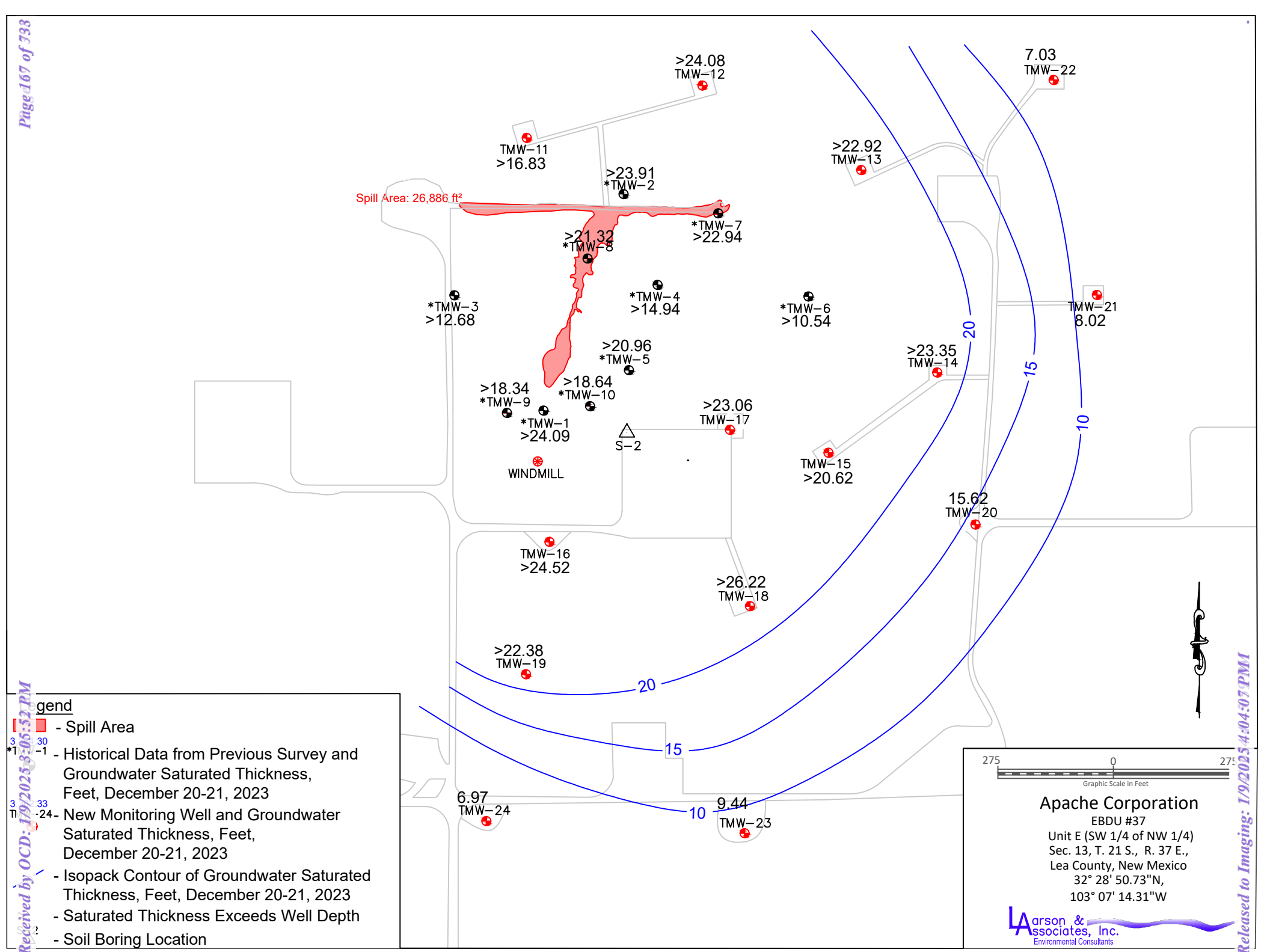
Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3d -Geological Cross Section Bb-Bb' (N-S)

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 167 of 733



gend

- Spill Area
- Historical Data from Previous Survey and Groundwater Saturated Thickness, Feet, December 20-21, 2023
- New Monitoring Well and Groundwater Saturated Thickness, Feet, December 20-21, 2023
- Isopack Contour of Groundwater Saturated Thickness, Feet, December 20-21, 2023
- Saturated Thickness Exceeds Well Depth
- Soil Boring Location

Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4 - Groundwater Saturated Thickness Map, December 20-21, 2023

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 168 of 733

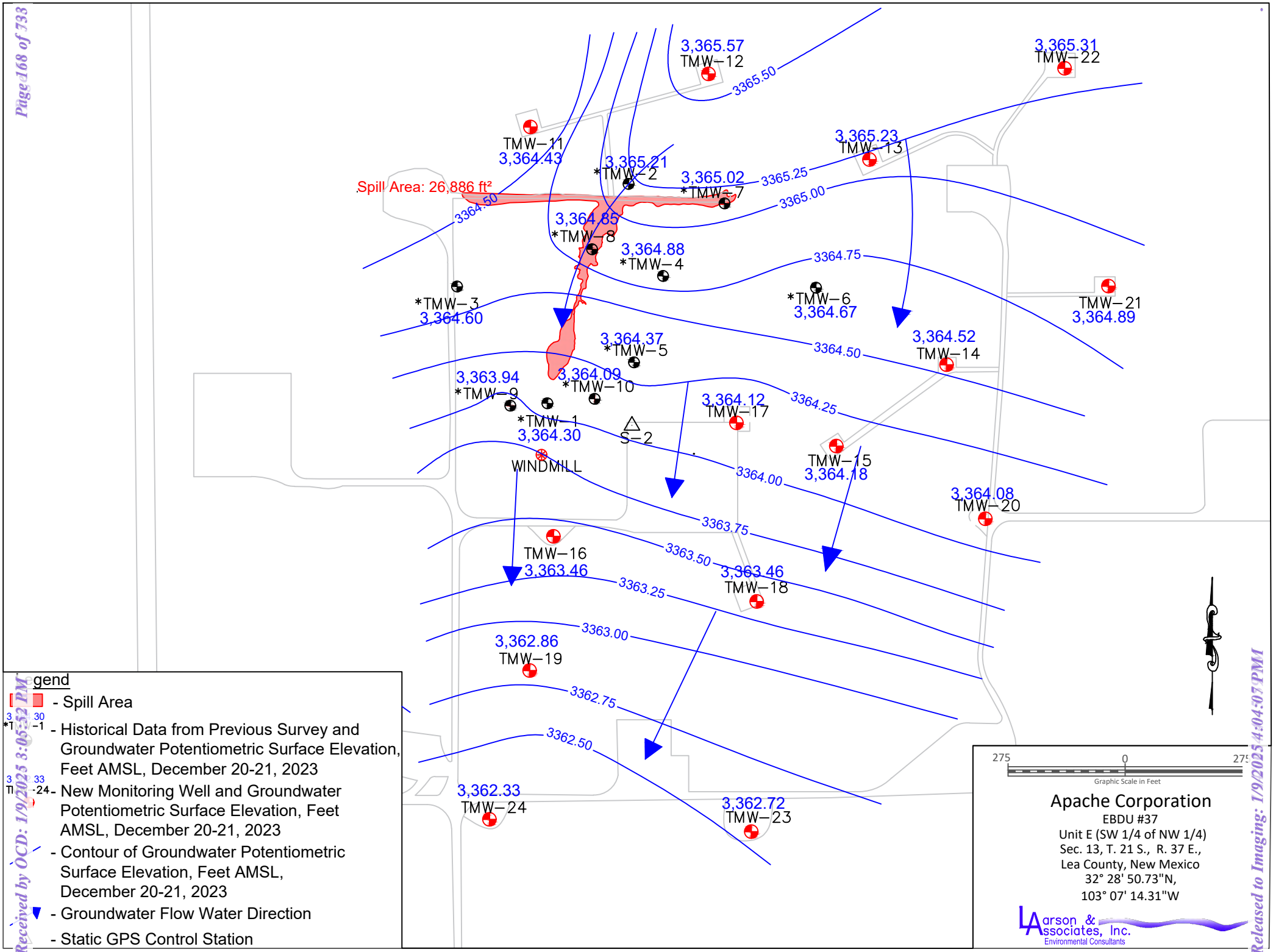


Figure 5a - Groundwater Potentiometric Surface Map, December 20-21, 2023

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 169 of 733

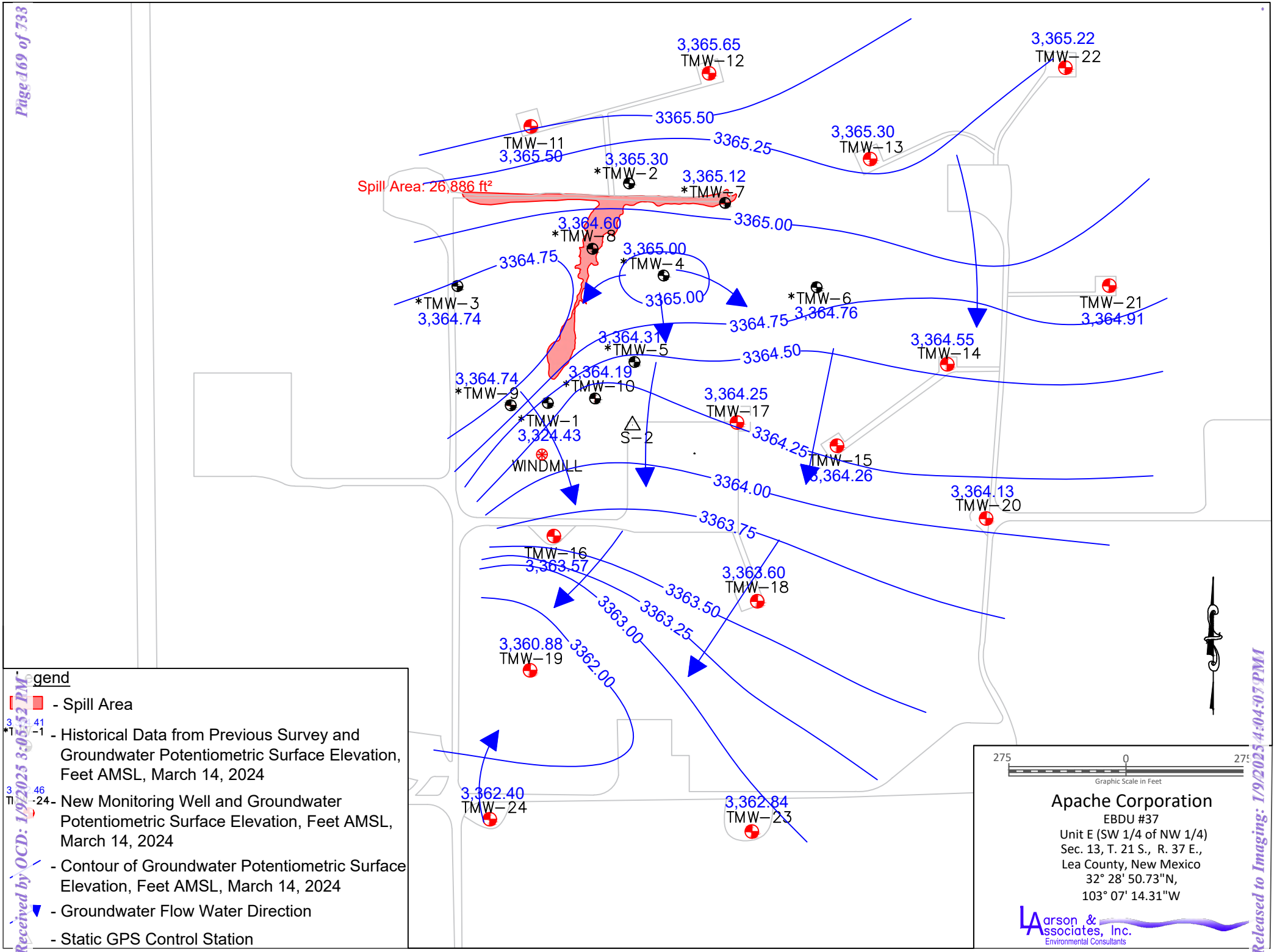
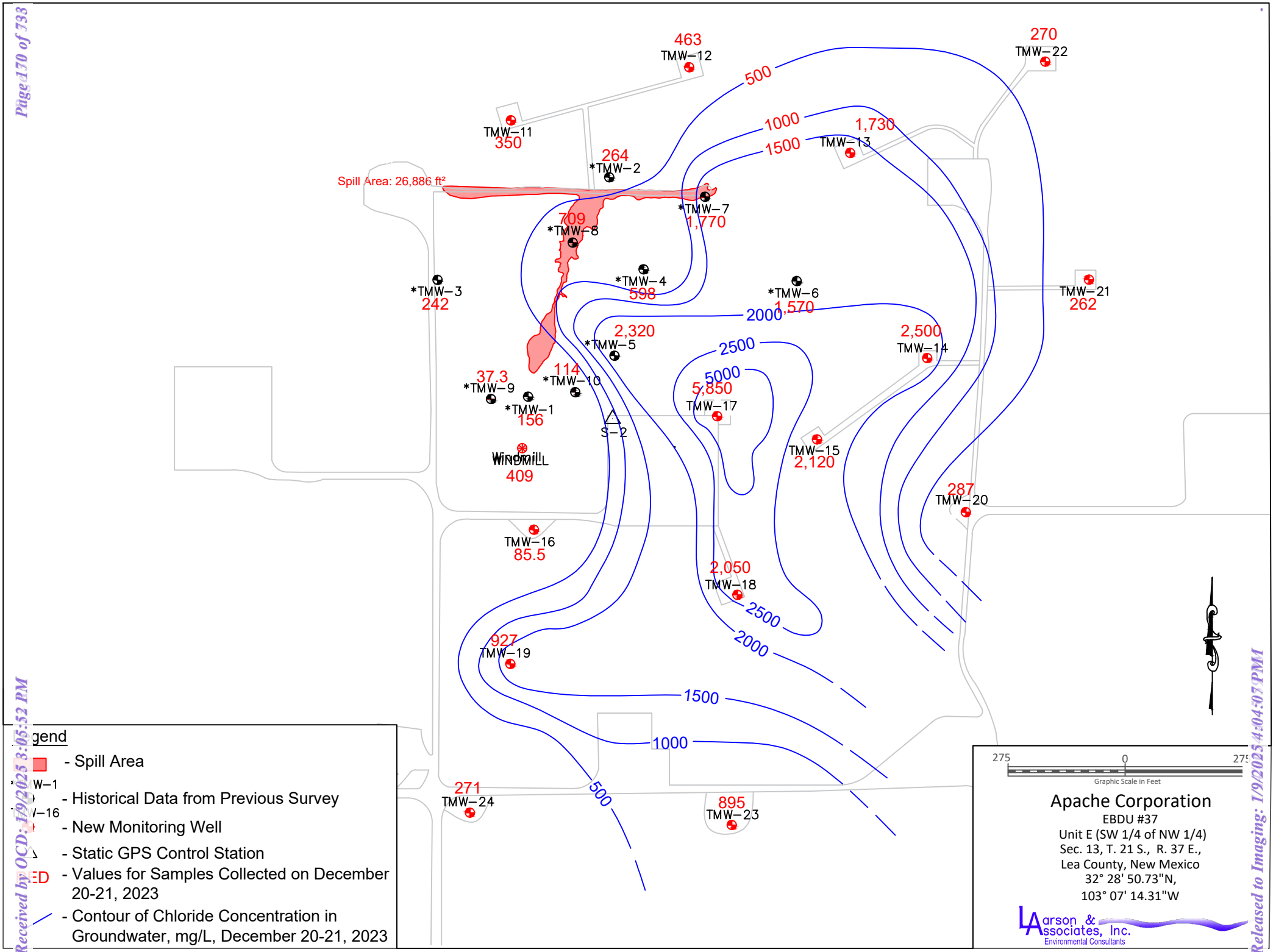


Figure 5b - Groundwater Potentiometric Surface Map, March 14, 2024

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 170 of 733



Legend

- Spill Area
- Historical Data from Previous Survey
- New Monitoring Well
- Static GPS Control Station
- Values for Samples Collected on December 20-21, 2023
- Contour of Chloride Concentration in Groundwater, mg/L, December 20-21, 2023

Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 6a - Isopleth Map of Chloride Concentrations in Groundwater, December 20-21, 2023

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 171 of 733

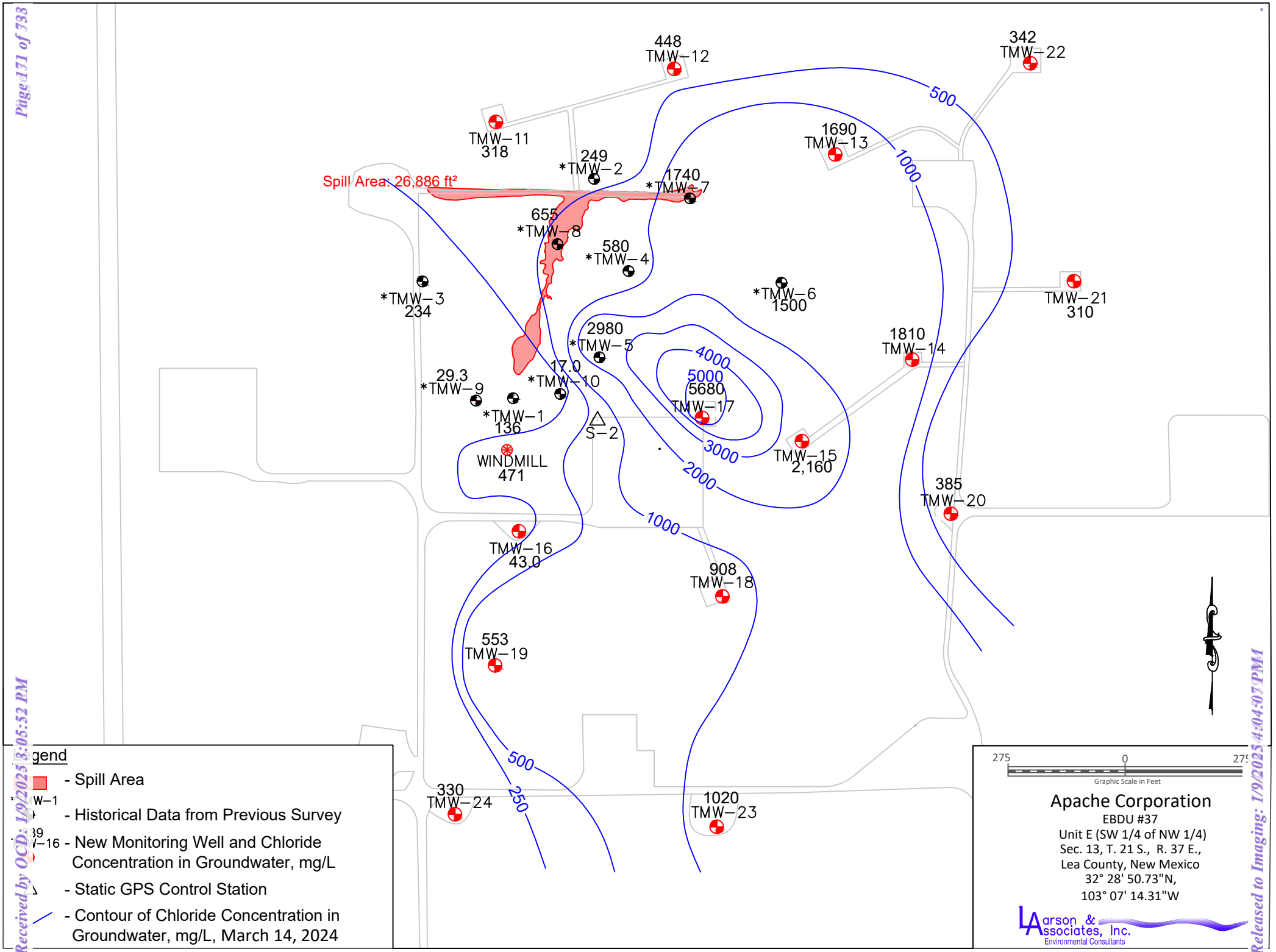


Figure 6b - Isopleth Map of Chloride Concentrations in Groundwater, March 14, 2024

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 172 of 733

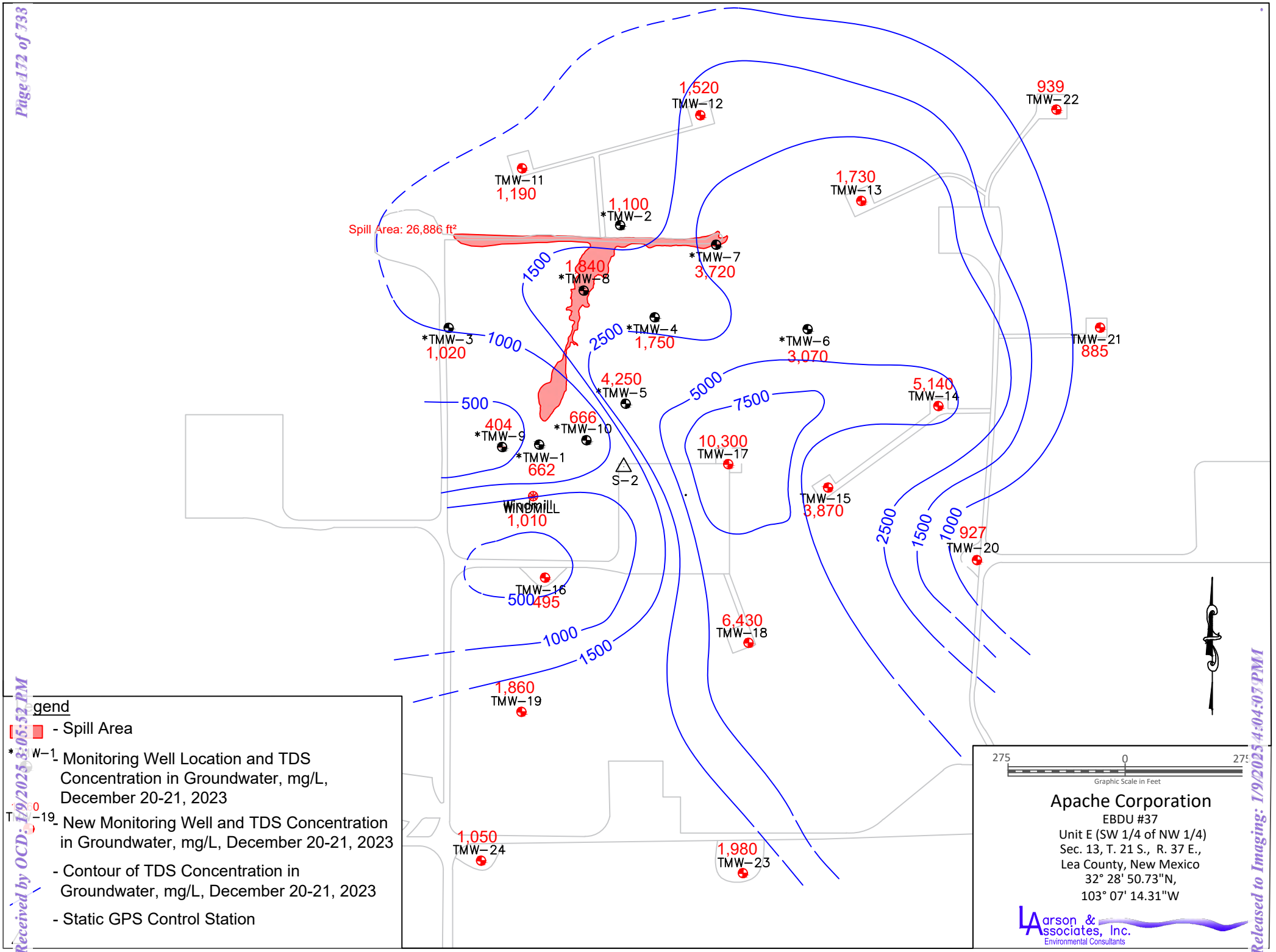
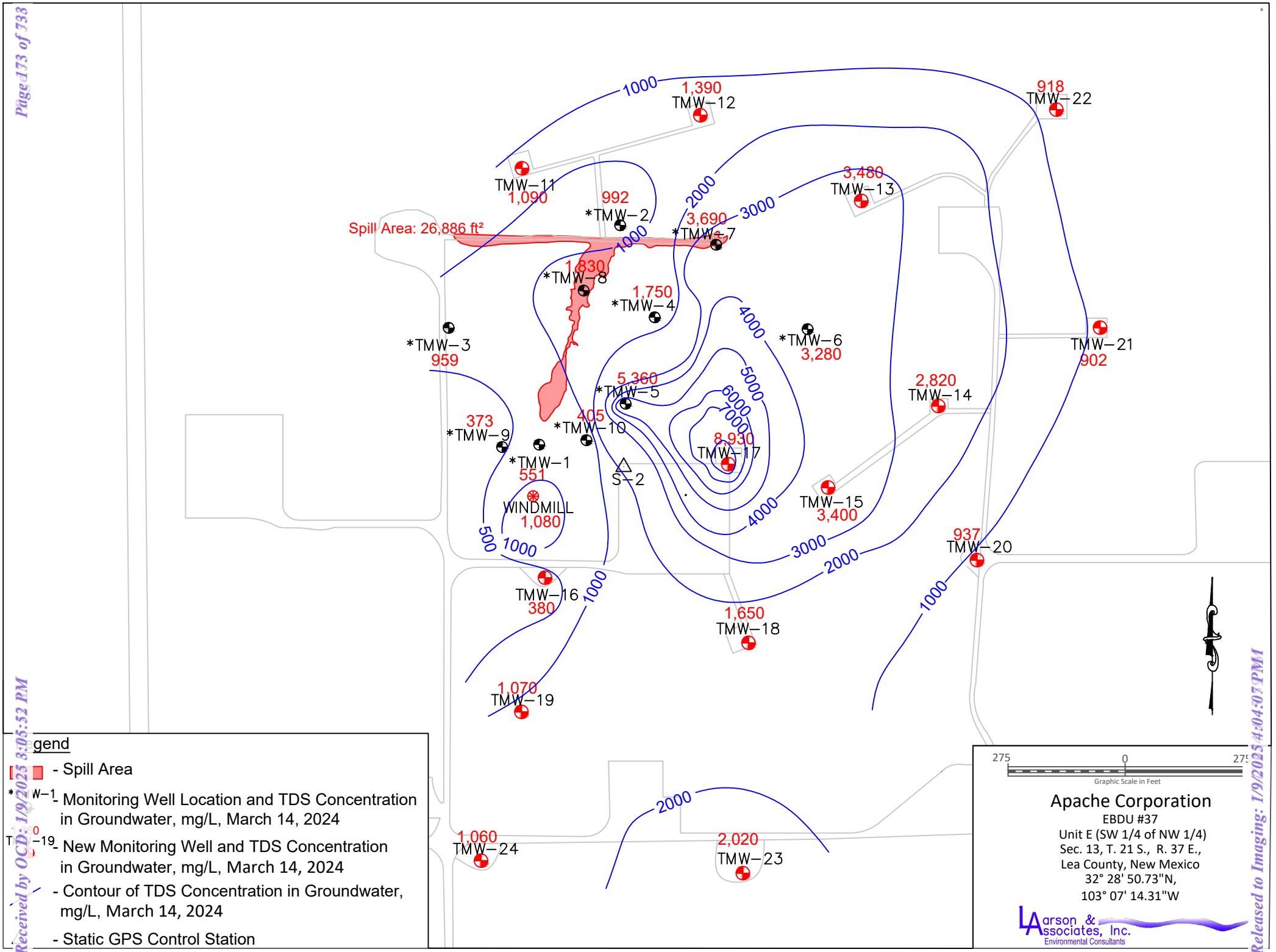


Figure 7a - Isopleth Map Showing TDS Concentrations in Groundwater, December 20-21, 2023

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 173 of 733



Legend

- Spill Area
- Monitoring Well Location and TDS Concentration in Groundwater, mg/L, March 14, 2024
- New Monitoring Well and TDS Concentration in Groundwater, mg/L, March 14, 2024
- Contour of TDS Concentration in Groundwater, mg/L, March 14, 2024
- Static GPS Control Station

Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 7b - Isopleth Map Showing TDS Concentrations in Groundwater, March 14, 2024

Received by OCD: 1/9/2025 8:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 174 of 733

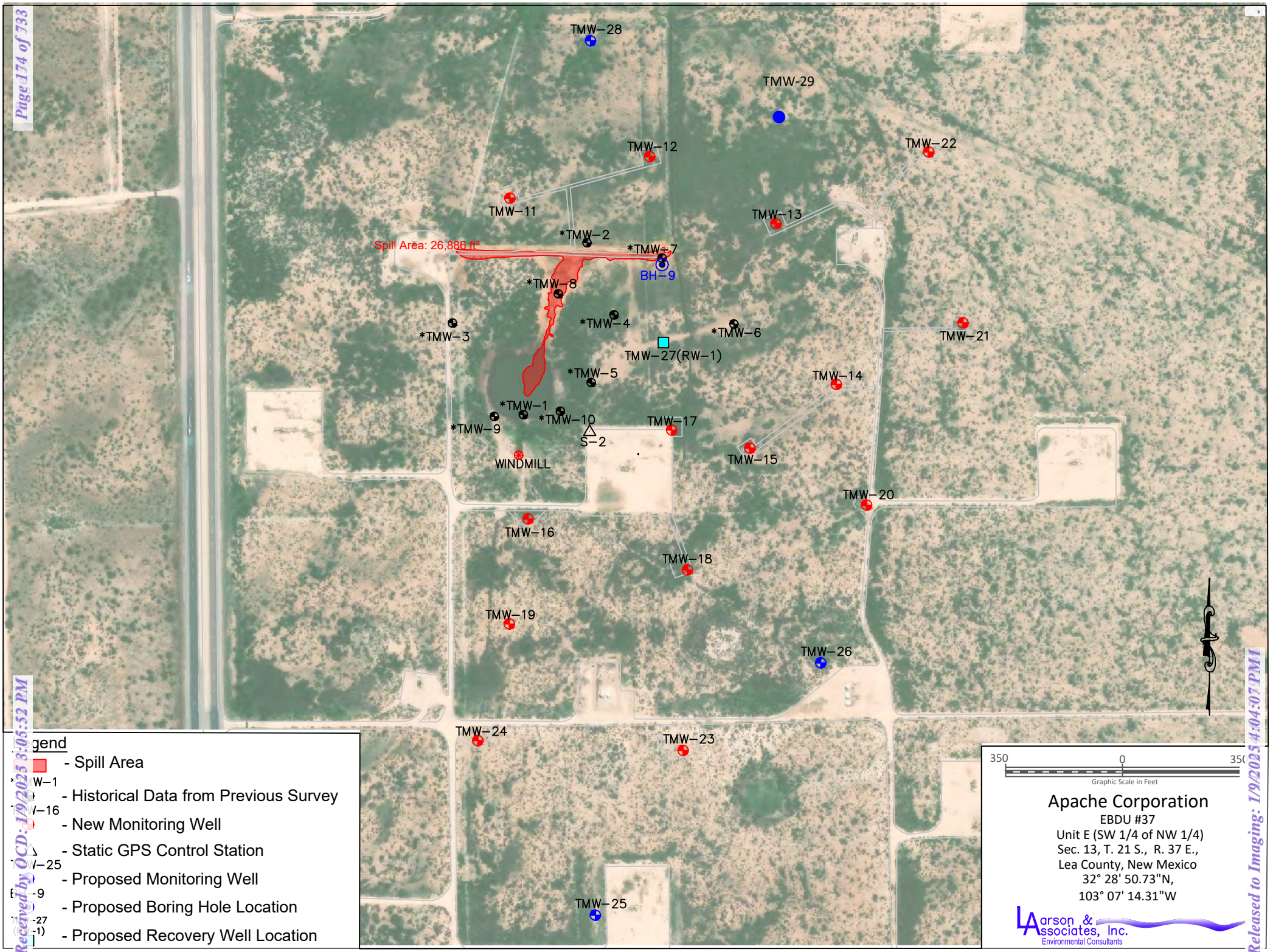


Figure 8a - Aerial Map Showing Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 175 of 733

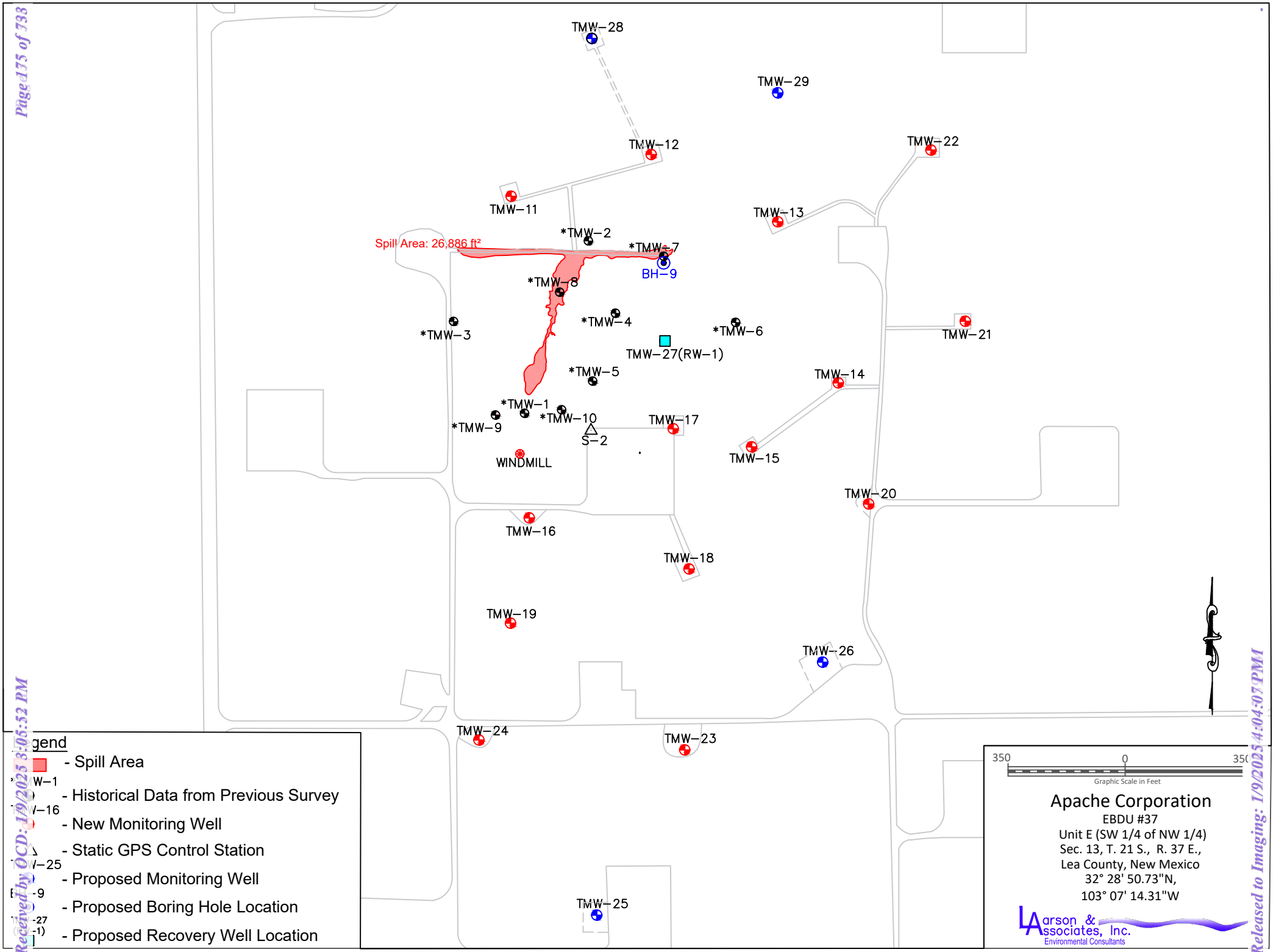


Figure 8b - Site Map Showing Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Attachment A
Initial C-141

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	47 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☒ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	

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 of a C-141 report 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 of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bruce Baker Title: Sr. Environmental Tech

Signature: Date: 10/29/2019

email: Larry.Baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: Date:

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- [x] Detailed description of proposed remediation technique
- [x] Scaled sitemap with GPS coordinates showing delineation points
- [x] Estimated volume of material to be remediated
- [x] Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- [x] Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- [ ] Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- [ ] Extents of contamination must be fully delineated.
- [ ] Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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 of a C-141 report 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 of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Bruce Baker Title: Sr. Environmental Tech

Signature: _____ Date: 10/29/2019

email: Larry.Baker@apachecorp.com Telephone: 432-631-6982

OCD Only

Received by: _____ Date: _____

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature: _____ Date: _____

Attachment B
NMOCD Communications

From:	Bratcher, Michael, EMNRD
To:	Mark Larson; Romero, Rosa, EMNRD; Buchanan, Michael, EMNRD; Powell, Brandon, EMNRD
Cc:	Bole, Barrett; "Larry.Baker@apachecorp.com"; Robert Nelson
Subject:	RE: [EXTERNAL] FW: Apache Corporation, EBDU 37 (Incident NDHR1922141227/1RP-5636) - Scope of Work for Additional Monitoring Wells
Date:	Tuesday, November 14, 2023 12:08:50 PM
Attachments:	image001.png

Mark,

Your proposal (scope of work) dated November 8, 2023, for the installation of additional investigatory/monitor wells, is approved with one additional well installation requested. OCD requests in addition to those proposed, one more well be installed approximately half way between TMW-5 and the proposed TMW-15 well.

Thank you,

Mike Bratcher ● Incident Supervisor
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave | Artesia, NM 88210
(575) 626-0857 | mike.bratcher@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Mark Larson <Mark@laenvironmental.com>
Sent: Friday, November 10, 2023 8:20 AM
To: Romero, Rosa, EMNRD <RosaM.Romero@emnrd.nm.gov>; Buchanan, Michael, EMNRD <Michael.Buchanan@emnrd.nm.gov>; Bratcher, Michael, EMNRD <mike.bratcher@emnrd.nm.gov>
Cc: Bole, Barrett <Barrett.Bole@apachecorp.com>; 'Larry.Baker@apachecorp.com' <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXTERNAL] FW: Apache Corporation, EBDU 37 (Incident NDHR1922141227/1RP-5636) - Scope of Work for Additional Monitoring Wells

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Ms. Rosa M. Romero, Mr. Michael Buchanan, Mr. Mike Bratcher,
Per the meeting on October 30, 2023, Larson & Associates,, Inc. (LAI), on behalf of Apache Corporation (Apache), submits the attached scope of work (SOW) for installing additional monitoring wells (TMW-11 through TMW-16) at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/NW), Section 13, Township 21 South, Range 37 East, Lea County, New Mexico. Please contact Barrett Bole with Apache at (432) 818-1108 or email Barrett.Bole@apachecorp.com, Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com, Robert Nelson at (432) 687-0901 or rnelson@laenvironmental.com or me to discuss any questions you may have.

Respectfully,

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

Attachment C

Laboratory Report
(Chloride Analysis)

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/4/2023 9:53:16 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-36346-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
12/4/2023 9:53:16 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-36346-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 9
Lab Chronicle 10
Certification Summary 11
Method Summary 12
Sample Summary 13
Chain of Custody 14
Receipt Checklists 15

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Job ID: 880-36346-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36346-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/1/2023 9:14 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68117 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Client Sample ID: TMW-11
Lab Sample ID: 880-36346-1
Date Collected: 11/30/23 09:23
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.00		mg/L			12/01/23 17:35	10

Client Sample ID: TMW-12
Lab Sample ID: 880-36346-2
Date Collected: 11/30/23 12:16
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437	F1 F2	5.00		mg/L			12/01/23 12:45	10

Client Sample ID: Tote
Lab Sample ID: 880-36346-3
Date Collected: 11/30/23 08:15
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	948		50.0		mg/L			12/01/23 13:25	100

Client Sample ID: Tote
Lab Sample ID: 880-36346-4
Date Collected: 11/30/23 11:30
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.7		2.50		mg/L			12/01/23 17:27	5

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68106/3
Matrix: Water
Analysis Batch: 68106

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 14:18	1

Lab Sample ID: LCS 880-68106/4
Matrix: Water
Analysis Batch: 68106

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.37		mg/L		101	90 - 110		

Lab Sample ID: LCSD 880-68106/5
Matrix: Water
Analysis Batch: 68106

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.79		mg/L		103	90 - 110	2	20

Lab Sample ID: MB 880-68112/3
Matrix: Water
Analysis Batch: 68112

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 16:52	1

Lab Sample ID: LCS 880-68112/4
Matrix: Water
Analysis Batch: 68112

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.51		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-68112/5
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.61		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36346-4 MS
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Tote
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	11.7		125	134.7		mg/L		98	90 - 110		

Lab Sample ID: 880-36346-4 MSD
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Tote
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11.7		125	135.3		mg/L		99	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68117/3
Matrix: Water
Analysis Batch: 68117

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 12:04	1

Lab Sample ID: LCS 880-68117/4
Matrix: Water
Analysis Batch: 68117

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.61		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-68117/5
Matrix: Water
Analysis Batch: 68117

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.68		mg/L		103	90 - 110	0	20

Lab Sample ID: 880-36346-2 MS
Matrix: Water
Analysis Batch: 68117

Client Sample ID: TMW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	437	F1 F2	250	528.4	F1	mg/L		37	90 - 110		

Lab Sample ID: 880-36346-2 MSD
Matrix: Water
Analysis Batch: 68117

Client Sample ID: TMW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	437	F1 F2	250	725.0	F1 F2	mg/L		115	90 - 110	31	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-1	TMW-11	Total/NA	Water	300.0	
MB 880-68106/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68106/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68106/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 68112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-4	Tote	Total/NA	Water	300.0	
MB 880-68112/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68112/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68112/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-4 MS	Tote	Total/NA	Water	300.0	
880-36346-4 MSD	Tote	Total/NA	Water	300.0	

Analysis Batch: 68117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-2	TMW-12	Total/NA	Water	300.0	
880-36346-3	Tote	Total/NA	Water	300.0	
MB 880-68117/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68117/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68117/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-2 MS	TMW-12	Total/NA	Water	300.0	
880-36346-2 MSD	TMW-12	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Client Sample ID: TMW-11
Date Collected: 11/30/23 09:23
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68106	12/01/23 17:35	CH	EET MID

Client Sample ID: TMW-12
Date Collected: 11/30/23 12:16
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68117	12/01/23 12:45	CH	EET MID

Client Sample ID: Tote
Date Collected: 11/30/23 08:15
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68117	12/01/23 13:25	CH	EET MID

Client Sample ID: Tote
Date Collected: 11/30/23 11:30
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	10 mL	10 mL	68112	12/01/23 17:27	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36346-1	TMW-11	Water	11/30/23 09:23	12/01/23 09:14
880-36346-2	TMW-12	Water	11/30/23 12:16	12/01/23 09:14
880-36346-3	Tote	Water	11/30/23 08:15	12/01/23 09:14
880-36346-4	Tote	Water	11/30/23 11:30	12/01/23 09:14

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 8:05:52 PM

36346 No. 3173

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/1/2023 PAGE 1 OF 1
PO# _____ LAB WORK ORDER# _____
PROJECT LOCATION OR NAME Ebdu #37
LAI PROJECT # 19-0112-49 COLLECTOR RM+BB

Data Reported to Robert Nelson

TRRP report? ☐ Yes ☒ No
TIME ZONE Time zone/State: MST/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-11		11/30/23	9:23	W	1				X																			X		Direct bill to Apache
TMW-12		"	12:16	W	"				"																			"		
Tote		"	6:15	W	"				"																			"		
Tote		"	11:30	OT	"				"																			"		
TOTAL 4																														

880-36346 Chain of Custody

RELINQUISHED BY (Signature) Amelia Robins	DATE/TIME 12/1 914	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
LABORATORY Xenco		

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

LABORATORY USE ONLY:
RECEIVING TEMP 4.1 4.3 THERM# TR2 tr0
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

12/4/2023

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36346-1
SDG Number: 19-0112-49

Login Number: 36346
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/4/2023 9:53:16 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-36346-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
12/4/2023 9:53:16 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-36346-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 9
Lab Chronicle 10
Certification Summary 11
Method Summary 12
Sample Summary 13
Chain of Custody 14
Receipt Checklists 15

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Job ID: 880-36346-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36346-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/1/2023 9:14 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.3°C

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68117 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Released to Imaging: 1/9/2025 4:04:07 PM

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Client Sample ID: TMW-11
Lab Sample ID: 880-36346-1
Date Collected: 11/30/23 09:23
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	360		5.00		mg/L			12/01/23 17:35	10

Client Sample ID: TMW-12
Lab Sample ID: 880-36346-2
Date Collected: 11/30/23 12:16
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	437	F1 F2	5.00		mg/L			12/01/23 12:45	10

Client Sample ID: Tote
Lab Sample ID: 880-36346-3
Date Collected: 11/30/23 08:15
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	948		50.0		mg/L			12/01/23 13:25	100

Client Sample ID: Tote
Lab Sample ID: 880-36346-4
Date Collected: 11/30/23 11:30
Matrix: Water
Date Received: 12/01/23 09:14

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.7		2.50		mg/L			12/01/23 17:27	5

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68106/3
Matrix: Water
Analysis Batch: 68106

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 14:18	1

Lab Sample ID: LCS 880-68106/4
Matrix: Water
Analysis Batch: 68106

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.37		mg/L		101	90 - 110		

Lab Sample ID: LCSD 880-68106/5
Matrix: Water
Analysis Batch: 68106

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.79		mg/L		103	90 - 110	2	20

Lab Sample ID: MB 880-68112/3
Matrix: Water
Analysis Batch: 68112

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 16:52	1

Lab Sample ID: LCS 880-68112/4
Matrix: Water
Analysis Batch: 68112

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.51		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-68112/5
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.61		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36346-4 MS
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Tote
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	11.7		125	134.7		mg/L		98	90 - 110		

Lab Sample ID: 880-36346-4 MSD
Matrix: Water
Analysis Batch: 68112

Client Sample ID: Tote
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11.7		125	135.3		mg/L		99	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68117/3
Matrix: Water
Analysis Batch: 68117

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/01/23 12:04	1

Lab Sample ID: LCS 880-68117/4
Matrix: Water
Analysis Batch: 68117

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.61		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-68117/5
Matrix: Water
Analysis Batch: 68117

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.68		mg/L		103	90 - 110	0	20

Lab Sample ID: 880-36346-2 MS
Matrix: Water
Analysis Batch: 68117

Client Sample ID: TMW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	437	F1 F2	250	528.4	F1	mg/L		37	90 - 110		

Lab Sample ID: 880-36346-2 MSD
Matrix: Water
Analysis Batch: 68117

Client Sample ID: TMW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	437	F1 F2	250	725.0	F1 F2	mg/L		115	90 - 110	31	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-1	TMW-11	Total/NA	Water	300.0	
MB 880-68106/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68106/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68106/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 68112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-4	Tote	Total/NA	Water	300.0	
MB 880-68112/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68112/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68112/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-4 MS	Tote	Total/NA	Water	300.0	
880-36346-4 MSD	Tote	Total/NA	Water	300.0	

Analysis Batch: 68117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36346-2	TMW-12	Total/NA	Water	300.0	
880-36346-3	Tote	Total/NA	Water	300.0	
MB 880-68117/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68117/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68117/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36346-2 MS	TMW-12	Total/NA	Water	300.0	
880-36346-2 MSD	TMW-12	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Client Sample ID: TMW-11
Date Collected: 11/30/23 09:23
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68106	12/01/23 17:35	CH	EET MID

Client Sample ID: TMW-12
Date Collected: 11/30/23 12:16
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68117	12/01/23 12:45	CH	EET MID

Client Sample ID: Tote
Date Collected: 11/30/23 08:15
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68117	12/01/23 13:25	CH	EET MID

Client Sample ID: Tote
Date Collected: 11/30/23 11:30
Date Received: 12/01/23 09:14

Lab Sample ID: 880-36346-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	10 mL	10 mL	68112	12/01/23 17:27	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36346-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36346-1	TMW-11	Water	11/30/23 09:23	12/01/23 09:14
880-36346-2	TMW-12	Water	11/30/23 12:16	12/01/23 09:14
880-36346-3	Tote	Water	11/30/23 08:15	12/01/23 09:14
880-36346-4	Tote	Water	11/30/23 11:30	12/01/23 09:14

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 8:05:52 PM

36346 No. 3173

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/1/2023 PAGE 1 OF 1
PO# _____ LAB WORK ORDER# _____
PROJECT LOCATION OR NAME Ebdu #37
LAI PROJECT # 19-0112-49 COLLECTOR RM+BB
Data Reported to Robert Nelson

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION HCl	HNO3	H2SO4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-11		11/30/23	9:23	W	1				X			Direct bill to Apache
TMW-12		"	12:16	W	"				"			
Tote		"	6:15	W	"				"			
Tote		"	11:30	OT	"				"			

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

TOTAL 4

880-36346 Chain of Custody

RELINQUISHED BY (Signature) Amelia Robins	DATE/TIME 12/1 914	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
LABORATORY Xenco		

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

LABORATORY USE ONLY:
RECEIVING TEMP 4.1 4.3 THERM# TR2 tr0
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

12/4/2023

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36346-1
SDG Number: 19-0112-49

Login Number: 36346
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/6/2023 1:35:17 PM

JOB DESCRIPTION

EDBU #37
19-0112-49

JOB NUMBER

880-36575-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
12/6/2023 1:35:17 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Laboratory Job ID: 880-36575-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Job ID: 880-36575-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36575-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/6/2023 10:17 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 6.3°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Released to Imaging: 1/9/2025 4:04:07 PM

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Client Sample ID: TMW-13

Lab Sample ID: 880-36575-1
Matrix: Water
Date Collected: 12/05/23 12:13
Date Received: 12/06/23 10:17

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1920		25.0		mg/L			12/06/23 12:57	50

Client Sample ID: TMW-18

Lab Sample ID: 880-36575-2
Matrix: Water
Date Collected: 12/05/23 15:30
Date Received: 12/06/23 10:17

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800		25.0		mg/L			12/06/23 13:16	50

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68488/3
Matrix: Water
Analysis Batch: 68488

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/06/23 12:37	1

Lab Sample ID: LCS 880-68488/4
Matrix: Water
Analysis Batch: 68488

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.97		mg/L		104	90 - 110		

Lab Sample ID: LCSD 880-68488/5
Matrix: Water
Analysis Batch: 68488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.35		mg/L		101	90 - 110	2	20

Lab Sample ID: 880-36575-1 MS
Matrix: Water
Analysis Batch: 68488

Client Sample ID: TMW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1920		1250	3226		mg/L		105	90 - 110		

Lab Sample ID: 880-36575-1 MSD
Matrix: Water
Analysis Batch: 68488

Client Sample ID: TMW-13
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1920		1250	3229		mg/L		105	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36575-1	TMW-13	Total/NA	Water	300.0	
880-36575-2	TMW-18	Total/NA	Water	300.0	
MB 880-68488/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68488/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68488/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36575-1 MS	TMW-13	Total/NA	Water	300.0	
880-36575-1 MSD	TMW-13	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Client Sample ID: TMW-13

Lab Sample ID: 880-36575-1

Date Collected: 12/05/23 12:13
Matrix: Water
Date Received: 12/06/23 10:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	10 mL	10 mL	68488	12/06/23 12:57	SMC	EET MID

Client Sample ID: TMW-18

Lab Sample ID: 880-36575-2

Date Collected: 12/05/23 15:30
Matrix: Water
Date Received: 12/06/23 10:17

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	10 mL	10 mL	68488	12/06/23 13:16	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36575-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36575-1	TMW-13	Water	12/05/23 12:13	12/06/23 10:17
880-36575-2	TMW-18	Water	12/05/23 15:30	12/06/23 10:17

Page 226 of 733

No. 3039

CHAIN-OF-CUSTODY

12/6/2023

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE. 12/5/23 PAGE 1 OF 1

PO#. _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR DSG

Data Reported to Robert Nelson / Mark Larson

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State
MNT / NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-13		12/5	12:13	W	1				X			Bill directly to Apache
TMW-18		12/5	15:30	W	1				X			

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

880-36575 Chain of Custody

Page 13 of 14

TOTAL 2

RELINQUISHED BY (Signature)	DATE/TIME 12/6	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature) 12/6/23 1017
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 6 1/6 3 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36575-1
SDG Number: 19-0112-49

Login Number: 36575
List Number: 1
Creator: Kramer, Jessica

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/5/2023 3:13:18 PM

JOB DESCRIPTION

EBDU 37
19-0112-49

JOB NUMBER

880-36445-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
12/5/2023 3:13:18 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Received by OCD: 1/9/2025 3:05:52 PM

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Laboratory Job ID: 880-36445-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Job ID: 880-36445-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36445-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/5/2023 8:34 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.6°C

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-68424 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

The associated samples are: TMW-14 (880-36445-1), (880-36445-A-1 MS) and (880-36445-A-1 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Client Sample ID: TMW-14
Date Collected: 12/04/23 13:15
Date Received: 12/05/23 08:34

Lab Sample ID: 880-36445-1
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6010	F1	50.0		mg/L			12/05/23 12:49	100

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68424/3
Matrix: Water
Analysis Batch: 68424

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/05/23 12:30	1

Lab Sample ID: LCS 880-68424/4
Matrix: Water
Analysis Batch: 68424

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	26.38		mg/L		106	90 - 110		

Lab Sample ID: LCSD 880-68424/5
Matrix: Water
Analysis Batch: 68424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.02		mg/L		100	90 - 110	5	20

Lab Sample ID: 880-36445-1 MS
Matrix: Water
Analysis Batch: 68424

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	6010	F1	2500	8919	F1	mg/L		116	90 - 110		

Lab Sample ID: 880-36445-1 MSD
Matrix: Water
Analysis Batch: 68424

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	6010	F1	2500	8916	F1	mg/L		116	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36445-1	TMW-14	Total/NA	Water	300.0	
MB 880-68424/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68424/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68424/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36445-1 MS	TMW-14	Total/NA	Water	300.0	
880-36445-1 MSD	TMW-14	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Client Sample ID: TMW-14

Date Collected: 12/04/23 13:15
Date Received: 12/05/23 08:34

Lab Sample ID: 880-36445-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	68424	12/05/23 12:49	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU 37

Job ID: 880-36445-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36445-1	TMW-14	Water	12/04/23 13:15	12/05/23 08:34

Page 240 of 733

36445

No. 3175

CHAIN-OF-CUSTODY

12/5/2023

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/4/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU 37

LAI PROJECT # 19-0112-99 COLLECTOR DSG

Data Reported to Robert Nelson / Mark Larson

TRRP report? ☐ Yes ☒ No

TIME ZONE
Time zone/State: MNT / NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-14		12/4/23	1315	W	1				X		X	B.11 Direct to Apache
TOTAL 1												

880-36445 Chain of Custody

(RELINQUISHED BY (Signature) Candace Ballone	DATE/TIME 12/5 834	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
LABORATORY Xenco		

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

LABORATORY USE ONLY:
RECEIVING TEMP 4.4/4.6 THERM# IR8 #20
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36445-1
SDG Number: 19-0112-49

Login Number: 36445
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Robert Nelson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/5/2023 9:09:53 AM

JOB DESCRIPTION

EBDU #32
19-0112-49

JOB NUMBER

880-36386-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
12/5/2023 9:09:53 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Laboratory Job ID: 880-36386-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-36386-1
Project/Site: EBDU #32 SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-36386-1
Project/Site: EBDU #32 SDG: 19-0112-49

Job ID: 880-36386-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36386-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/4/2023 9:25 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.8°C

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68296 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Released to Imaging: 1/9/2025 4:04:07 PM

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Client Sample ID: TMW-15
Date Collected: 12/01/23 12:08
Date Received: 12/04/23 09:25

Lab Sample ID: 880-36386-1
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3850	F1	25.0		mg/L			12/04/23 16:57	50

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68296/3
Matrix: Water
Analysis Batch: 68296

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/04/23 16:25	1

Lab Sample ID: LCS 880-68296/4
Matrix: Water
Analysis Batch: 68296

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.11		mg/L		100	90 - 110		

Lab Sample ID: LCSD 880-68296/5
Matrix: Water
Analysis Batch: 68296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.06		mg/L		100	90 - 110	0	20

Lab Sample ID: 880-36386-1 MS
Matrix: Water
Analysis Batch: 68296

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	3850	F1	1250	5370	F1	mg/L		122	90 - 110		

Lab Sample ID: 880-36386-1 MSD
Matrix: Water
Analysis Batch: 68296

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3850	F1	1250	5377	F1	mg/L		122	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36386-1	TMW-15	Total/NA	Water	300.0	
MB 880-68296/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68296/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68296/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36386-1 MS	TMW-15	Total/NA	Water	300.0	
880-36386-1 MSD	TMW-15	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Client Sample ID: TMW-15

Date Collected: 12/01/23 12:08
Date Received: 12/04/23 09:25

Lab Sample ID: 880-36386-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	50 mL	50 mL	68296	12/04/23 16:57	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #32

Job ID: 880-36386-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36386-1	TMW-15	Water	12/01/23 12:08	12/04/23 09:25

Page 254 of 733

No. 3174

CHAIN-OF-CUSTODY

12/5/2023

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to Robert Nelson

DATE 12/11/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# 363886

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR. RW

TRRP report? ☐ Yes ☑ No

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

TIME ZONE
Time zone/State
MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-15		12/11/23	1208	W	1				X		pH ☐	Direct bill to Apache

TOTAL 1

RELINQUISHED BY (Signature)	DATE/TIME 12/4	RECEIVED BY (Signature) 12/4 925
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

TURN AROUND TIME
NORMAL ☐
1 DAY ☑ Rush!!
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP 36/38 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

880-36386 Chain of Custody

Page 13 of 14

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36386-1
SDG Number: 19-0112-49

Login Number: 36386
List Number: 1
Creator: Kramer, Jessica

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 11/30/2023 11:43:37 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-36265-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
11/30/2023 11:43:37 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-36265-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-36265-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Job ID: 880-36265-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36265-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 11/30/2023 8:11 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.7°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Client Sample ID: TMW-16

Date Collected: 11/29/23 12:53
Date Received: 11/30/23 08:11

Lab Sample ID: 880-36265-1

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	839		10.0		mg/L			11/30/23 11:06	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-67820/3
Matrix: Water
Analysis Batch: 67820

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			11/29/23 19:53	1

Lab Sample ID: LCS 880-67820/4
Matrix: Water
Analysis Batch: 67820

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.46		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-67820/5
Matrix: Water
Analysis Batch: 67820

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.49		mg/L		102	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 67820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36265-1	TMW-16	Total/NA	Water	300.0	
MB 880-67820/3	Method Blank	Total/NA	Water	300.0	
LCS 880-67820/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-67820/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Client Sample ID: TMW-16

Date Collected: 11/29/23 12:53
Date Received: 11/30/23 08:11

Lab Sample ID: 880-36265-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20	10 mL	10 mL	67820	11/30/23 11:06	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36265-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36265-1	TMW-16	Water	11/29/23 12:53	11/30/23 08:11

Page 268 of 733

36265

No. 3172

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to

DATE 11/29/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME Eddy #33

LAI PROJECT # 19-0112-49 COLLECTOR RW

TRRP report? ☐ Yes ☑ No

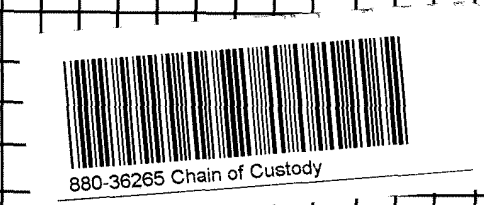
TIME ZONE
Time zone/State
MST/NM

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

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

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-16		11/29/23	12:53	W	1				X		X	



TOTAL 1

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

LABORATORY Xenco

TURN AROUND TIME
NORMAL ☐
1 DAY ☑ Rush!!
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP 3.5/3.7 THERM# _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

11/30/2023

Page 13 of 14

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36265-1
SDG Number: 19-0112-49

Login Number: 36265
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 11/30/2023 10:03:46 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-36200-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
11/30/2023 10:03:46 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-36200-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-36200-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Job ID: 880-36200-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36200-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 11/29/2023 8:15 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Client Sample ID: TMW-17
Date Collected: 11/28/23 15:21
Date Received: 11/29/23 08:15

Lab Sample ID: 880-36200-1
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11200		50.0		mg/L			11/29/23 23:13	100

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-67820/3
Matrix: Water
Analysis Batch: 67820

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			11/29/23 19:53	1

Lab Sample ID: LCS 880-67820/4
Matrix: Water
Analysis Batch: 67820

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.46		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-67820/5
Matrix: Water
Analysis Batch: 67820

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.49		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36200-1 MS
Matrix: Water
Analysis Batch: 67820

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	11200		1250	12390	E 4	mg/L		99	90 - 110		

Lab Sample ID: 880-36200-1 MSD
Matrix: Water
Analysis Batch: 67820

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	11200		1250	12370	E 4	mg/L		97	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 67820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36200-1	TMW-17	Total/NA	Water	300.0	
MB 880-67820/3	Method Blank	Total/NA	Water	300.0	
LCS 880-67820/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-67820/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36200-1 MS	TMW-17	Total/NA	Water	300.0	
880-36200-1 MSD	TMW-17	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Client Sample ID: TMW-17
Date Collected: 11/28/23 15:21
Date Received: 11/29/23 08:15

Lab Sample ID: 880-36200-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	10 mL	10 mL	67820	11/29/23 23:13	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36200-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36200-1	TMW-17	Water	11/28/23 15:21	11/29/23 08:15

Page 282 of 733

36200

No. 3171

CHAIN-OF-CUSTODY

11/30/2023

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to

DATE 11/29/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR KW

TRRP report? ☐ Yes ☑ No

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

TIME ZONE
Time zone/State
MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-17		11/28/23	1521	W	1				X			

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

TOTAL 1

RELINQUISHED BY (Signature) Clint Cahill DATE/TIME 11/29 RECEIVED BY (Signature) Burgill 11/29 8:15

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

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

LABORATORY Xenco

880-36200 Chain of Custody

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.2/3.0 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Page 13 of 14

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36200-1
SDG Number: 19-0112-49

Login Number: 36200
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/7/2023 3:03:15 PM

JOB DESCRIPTION

EDBU #37
19-0112-49

JOB NUMBER

880-36641-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
12/7/2023 3:03:15 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Laboratory Job ID: 880-36641-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-36641-1
Project/Site: EDBU #37 SDG: 19-0112-49

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Job ID: 880-36641-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36641-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/7/2023 9:28 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.5°C

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-68588 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Client Sample ID: TMW-19

Lab Sample ID: 880-36641-1
Date Collected: 12/06/23 10:38
Matrix: Water
Date Received: 12/07/23 09:28

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1520	F1	25.0		mg/L			12/07/23 15:00	50

Client Sample ID: TMW-20

Lab Sample ID: 880-36641-2
Date Collected: 12/06/23 14:07
Matrix: Water
Date Received: 12/07/23 09:28

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	289		5.00		mg/L			12/07/23 15:20	10

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68588/3
Matrix: Water
Analysis Batch: 68588

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/07/23 14:40	1

Lab Sample ID: LCS 880-68588/4
Matrix: Water
Analysis Batch: 68588

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	26.06		mg/L		104	90 - 110		

Lab Sample ID: LCSD 880-68588/5
Matrix: Water
Analysis Batch: 68588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.40		mg/L		102	90 - 110	3	20

Lab Sample ID: 880-36641-1 MS
Matrix: Water
Analysis Batch: 68588

Client Sample ID: TMW-19
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	1520	F1	1250	3078	F1	mg/L		124	90 - 110		

Lab Sample ID: 880-36641-1 MSD
Matrix: Water
Analysis Batch: 68588

Client Sample ID: TMW-19
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1520	F1	1250	3073	F1	mg/L		124	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36641-1	TMW-19	Total/NA	Water	300.0	
880-36641-2	TMW-20	Total/NA	Water	300.0	
MB 880-68588/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68588/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68588/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36641-1 MS	TMW-19	Total/NA	Water	300.0	
880-36641-1 MSD	TMW-19	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Client Sample ID: TMW-19

Lab Sample ID: 880-36641-1

Date Collected: 12/06/23 10:38
Matrix: Water
Date Received: 12/07/23 09:28

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			68588	12/07/23 15:00	CH	EET MID

Client Sample ID: TMW-20

Lab Sample ID: 880-36641-2

Date Collected: 12/06/23 14:07
Matrix: Water
Date Received: 12/07/23 09:28

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			68588	12/07/23 15:20	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-36641-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36641-1	TMW-19	Water	12/06/23 10:38	12/07/23 09:28
880-36641-2	TMW-20	Water	12/06/23 14:07	12/07/23 09:28

Page 296 of 733

36641

No. 3226

CHAIN-OF-CUSTODY

12/7/2023

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/6/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU 37

LAI PROJECT # 19-0112-49 COLLECTOR DSA/RN

Data Reported to Robert Nelson / Mark Larson

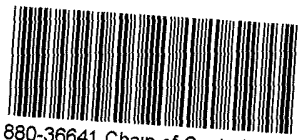
TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State
MNT / NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-19		12/6/23	1038	W	1				X		X	Direct bill to Apache
TMW-20		12/6/23	1407	W	1				X		X	

ANALYSES: BTEX ☐ MTBE ☐ TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL - MOD 8015 ☐ OIL - MOD 8015 ☐ VOC 8260 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ 8081 PESTICIDES ☐ 8082 PCBS ☐ 815(HERBICIDES ☐ TCLP - METALS (RCRA) ☐ TCLP VOC ☐ TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ TOTAL METALS (RCRA) ☐ OTHER LIST ☐ LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐ RCI ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ pH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ PECHLORATE ☐ CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐



TOTAL 2

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	12/7 9:28	[signature] 12/7/23 9:28
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY
RECEIVING TEMP 1.3/.5 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Page 13 of 14

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36641-1
SDG Number: 19-0112-49

Login Number: 36641
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/13/2023 5:25:36 PM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-36791-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
12/13/2023 5:25:36 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-36791-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Job ID: 880-36791-1

Laboratory: Eurofins Midland

Narrative

Job Narrative
880-36791-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/12/2023 8:51 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Client Sample ID: TMW-22

Date Collected: 12/11/23 10:47
Date Received: 12/12/23 08:51

Lab Sample ID: 880-36791-1

Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	268		5.00		mg/L			12/12/23 17:14	10

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-68938/3
Matrix: Water
Analysis Batch: 68938

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/12/23 16:54	1

Lab Sample ID: LCS 880-68938/4
Matrix: Water
Analysis Batch: 68938

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.61		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-68938/5
Matrix: Water
Analysis Batch: 68938

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.52		mg/L		102	90 - 110	0	20

Lab Sample ID: 880-36791-1 MS
Matrix: Water
Analysis Batch: 68938

Client Sample ID: TMW-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	268		250	528.5		mg/L		104	90 - 110		

Lab Sample ID: 880-36791-1 MSD
Matrix: Water
Analysis Batch: 68938

Client Sample ID: TMW-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	268		250	529.9		mg/L		105	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 68938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-36791-1	TMW-22	Total/NA	Water	300.0	
MB 880-68938/3	Method Blank	Total/NA	Water	300.0	
LCS 880-68938/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-68938/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-36791-1 MS	TMW-22	Total/NA	Water	300.0	
880-36791-1 MSD	TMW-22	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Client Sample ID: TMW-22
Date Collected: 12/11/23 10:47
Date Received: 12/12/23 08:51

Lab Sample ID: 880-36791-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL	10 mL	68938	12/12/23 17:14	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-36791-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-36791-1	TMW-22	Water	12/11/23 10:47	12/12/23 08:51

36791 No. 3227

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/11/2023 PAGE 1 OF 1
PO# _____ LAB WORK ORDER# _____
PROJECT LOCATION OR NAME EBDU #37
LAI PROJECT # 19-0112-49 COLLECTOR DSG

Data Reported to Mark Larson / Robert Nelson

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State
MNT / NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-22		12/11/23	1047	W	1				X		X	

TOTAL 1

RELINQUISHED BY (Signature) Brenda Bellino DATE/TIME 12/12 8:51 RECEIVED BY (Signature) [signature]
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)
RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature)
LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.3/3.5 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

880-36791 Chain of Custody

Received by OCD: 1/9/2025 8:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM
12/13/2023

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-36791-1
SDG Number: 19-0112-49

Login Number: 36791
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 12/19/2023 12:26:12 PM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-37049-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
12/19/2023 12:26:12 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-37049-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Qualifiers

HPLC/IC

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-37049-1
Project: EBDU #37

Job ID: 880-37049-1 Eurofins Midland

Job Narrative
880-37049-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/18/2023 10:42 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Client Sample ID: TMW-24
Date Collected: 12/15/23 13:40
Date Received: 12/18/23 10:42

Lab Sample ID: 880-37049-1
Matrix: Water

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	262		5.00		mg/L			12/18/23 18:03	10

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69322/3
Matrix: Water
Analysis Batch: 69322

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/18/23 17:43	1

Lab Sample ID: LCS 880-69322/4
Matrix: Water
Analysis Batch: 69322

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.54		mg/L		102	90 - 110		

Lab Sample ID: LCSD 880-69322/5
Matrix: Water
Analysis Batch: 69322

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.72		mg/L		103	90 - 110	1	20

Lab Sample ID: 880-37049-1 MS
Matrix: Water
Analysis Batch: 69322

Client Sample ID: TMW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	262		250	533.3		mg/L		108	90 - 110		

Lab Sample ID: 880-37049-1 MSD
Matrix: Water
Analysis Batch: 69322

Client Sample ID: TMW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	262		250	532.4		mg/L		108	90 - 110	0	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 69322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37049-1	TMW-24	Total/NA	Water	300.0	
MB 880-69322/3	Method Blank	Total/NA	Water	300.0	
LCS 880-69322/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-69322/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-37049-1 MS	TMW-24	Total/NA	Water	300.0	
880-37049-1 MSD	TMW-24	Total/NA	Water	300.0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Client Sample ID: TMW-24
Date Collected: 12/15/23 13:40
Date Received: 12/18/23 10:42

Lab Sample ID: 880-37049-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			69322	12/18/23 18:03	CH	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET MID

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37049-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37049-1	TMW-24	Water	12/15/23 13:40	12/18/23 10:42

Page 324 of 733

37049 No. 2355

CHAIN-OF-CUSTODY

12/19/2023

Larson & Associates, Inc.
Environmental Consultants
507 N Marienfeld Ste 202
Midland TX 79701
432-687 0901

DATE 12/15/2023 PAGE 1 OF 1

PO#

LAB WORK ORDER#

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR DSG/RN

Data Reported to Mark Larson / Robert Nelson

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State
MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐	TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐	HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TCLP METALS (RCRA) ☐	TCLP - PEST ☐	HERB ☐	Semi-VOC ☐	TCLP VOC ☐	TOTAL METALS (RCRA) ☐	OTHER LIST ☐	LEAD - TOTAL ☐	D W 200.8 ☐	TCLP ☐	RCI ☐	TOX ☐	FLASHPOINT ☐	TDS ☐	TSS ☐	% MOISTURE ☐	pH ☐	CYANIDE ☐	HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐	PECHLORATE ☐	CHLORIDE ☐	ANIONS ☐	ALKALINITY ☐	FIELD NOTES
TMW-24		12/15/23	1340		1				X																																				X	Direct Bill to Apache

880-37049 Chain of Custody

TOTAL 1

RELINQUISHED BY (Signature) DATE/TIME 12/15 1042 RECEIVED BY (Signature)

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

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

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 5.6/5.8 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

Page 13 of 14

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37049-1
SDG Number: 19-0112-49

Login Number: 37049
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Attachment D

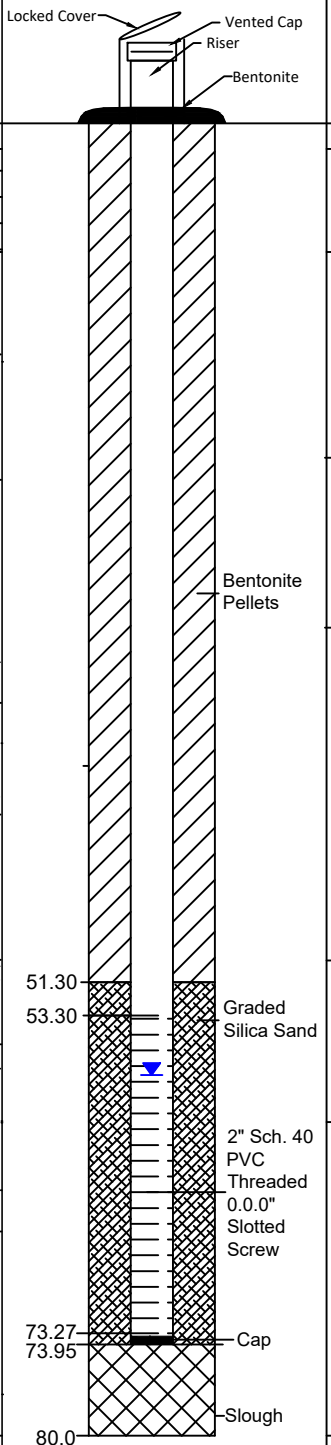
Boring Logs and Well Completion Records

BORING RECORD

Start: 11:26
Finish:

Surface Elevation: 3,421.56'
TOC Elevation: 3,424.35'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	8	Quartz Sand, 2.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	20	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown	SW	
	50	Moist @ 50'		
12/21/23 57.12'	55			
	60	Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		8
3		20
4		30
5		50
6		60
7		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'52.4141", 103°07'19.7965"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/29/23

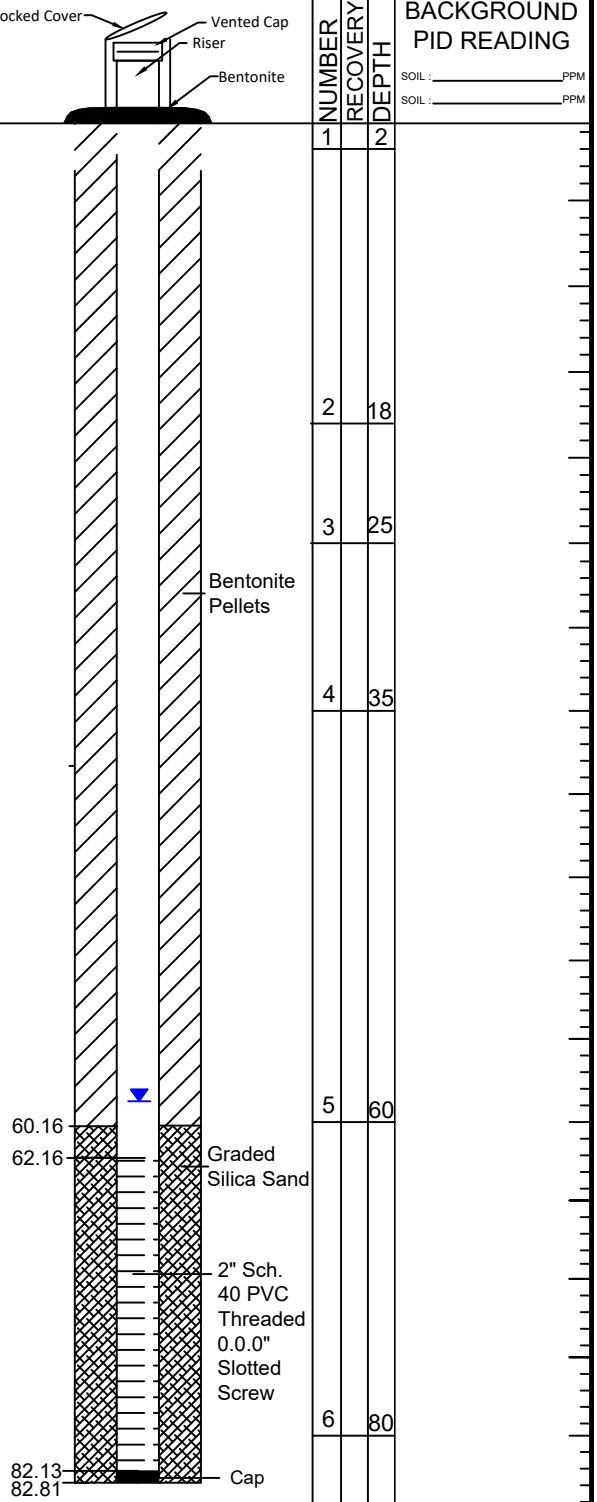
BORING NUMBER : TMW-11

BORING RECORD

Start: 09:25
Finish:

Surface Elevation: 3,424.30'
TOC Elevation: 3427.22'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	18	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	50	Moist @ 50'		
12/21/23 58.73'	60	Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		18
3		25
4		35
5		60
6		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'53.4598"N, 103°07'14.8709"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/30/23

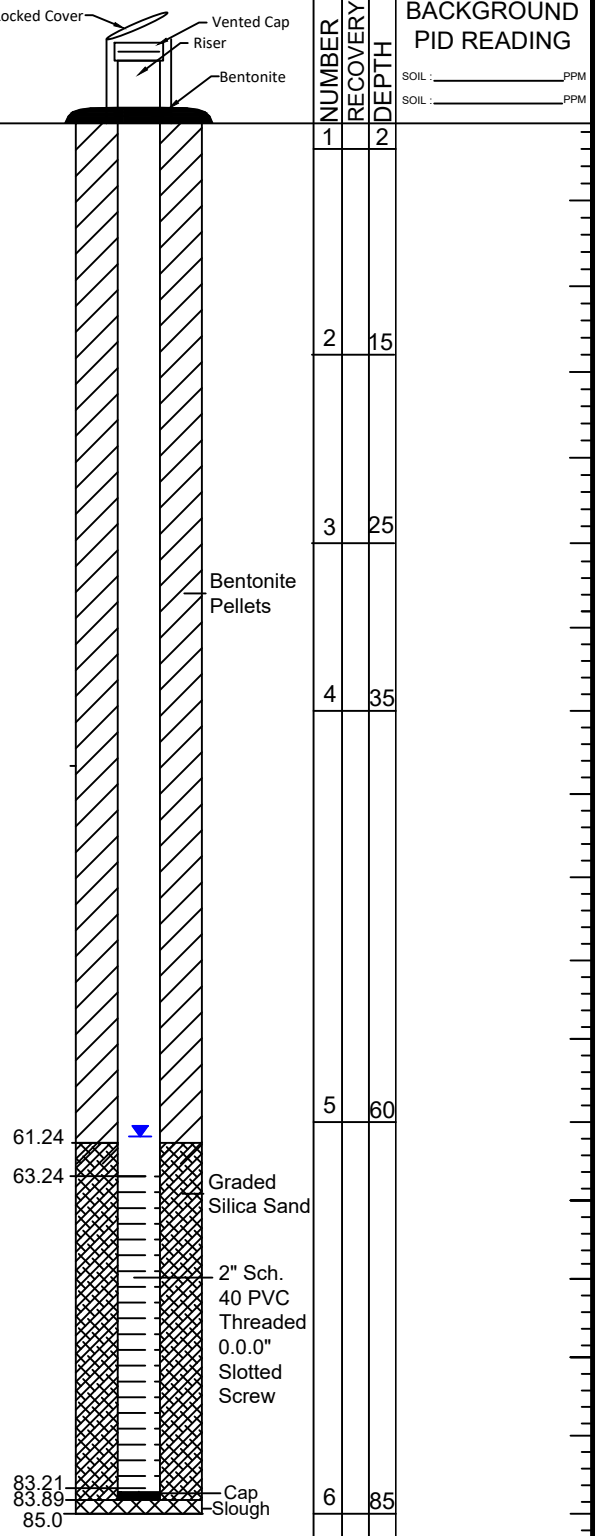
BORING NUMBER : TMW-12

BORING RECORD

Start: 09:25
Finish: 11:13 MST

Surface Elevation: 3,426.21'
TOC Elevation: 3428.98'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm		
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
	40		SW	
12/20/23 60.98'	60	Water Injected		
	85	TD: 85.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		35
5		60
6		85

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'51.4724", -103°07'10.5589"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/04/2023

BORING NUMBER : TMW-13

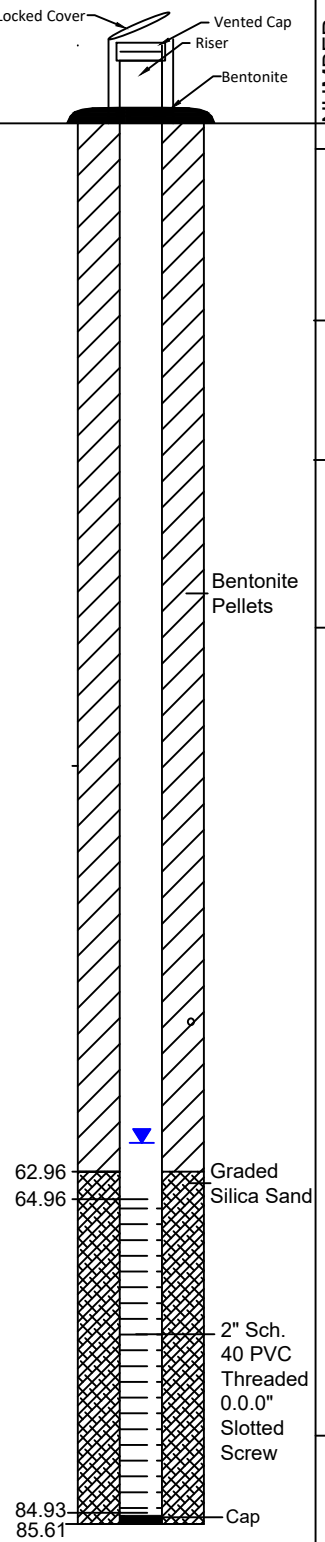
BORING RECORD

Start: 08:54
Finish: 10:15

Surface Elevation: 3,426.76'
TOC Elevation: 3,429.54'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	12	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
		7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
		Darker Color with depth, 7.5YR 5/6 Strong Brown		
	80	TD: 80.00'		

12/20/23
62.24'



NUMBER	RECOVERY	DEPTH
1		2
2		12
3		20
4		30
5		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'46.6967"N, 103°07'08.6721"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

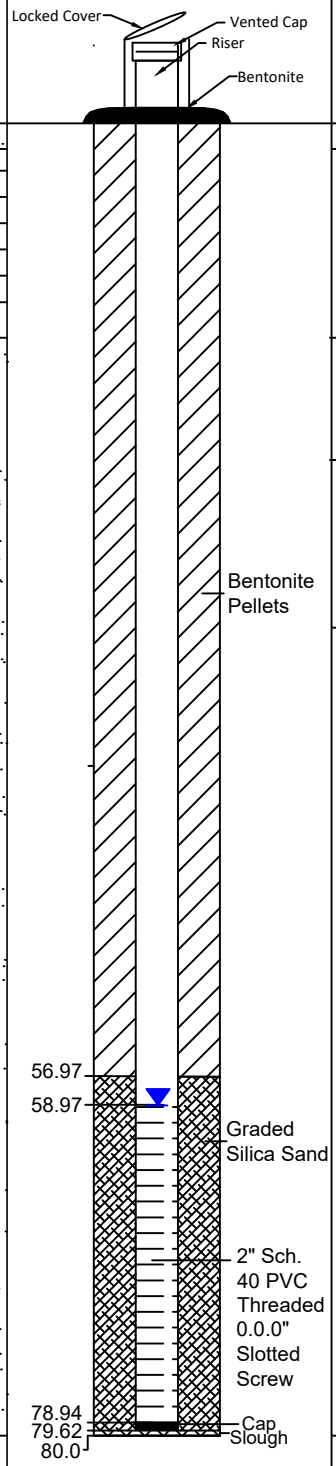
DRILL DATE : 12/01/2023

BORING NUMBER : TMW-14

BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Start:		
		Finish:		
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	13	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
	20	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm, Wet		
	30	Darker Color with depth, 7.5YR 5/6 Strong Brown		
12/20/23 59.00	60	Moist, Water Injected		
	80	TD: 80.00'		

Surface Elevation: 3,423.18'
TOC Elevation: 3,425.97'



NUMBER	RECOVERY	DEPTH
1		2
2		13
3		20
4		30
5		80

REMARKS

BACKGROUND PID READING

SOIL : _____ PPM

SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'44.9502"N, 103°07'11.7480"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/30/2023

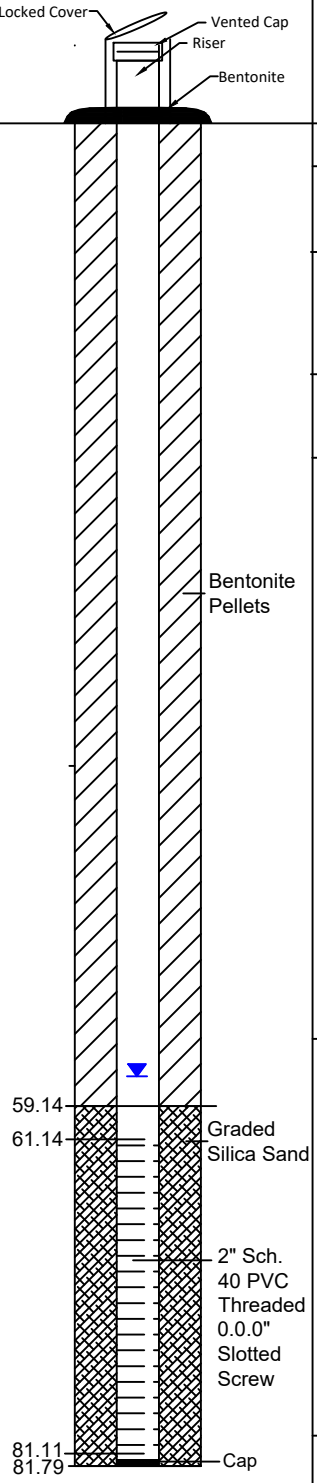
BORING NUMBER : TMW-15

BORING RECORD

Start: 09:35
Finish: 10:17

Surface Elevation: 3,420.73'
TOC Elecation: 3,423.65'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Calcihe Clast ≈ 10-20mm, Organic Material	Top Soil	
	3	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 5mm	Caliche	
	8	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	SW	
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown		
12/20/2023 57.27	55	Moist		
	60	Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		3
2		8
3		15
4		20
5		55
6		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'42.8747"N, 103°07'19.3738"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/29/2023

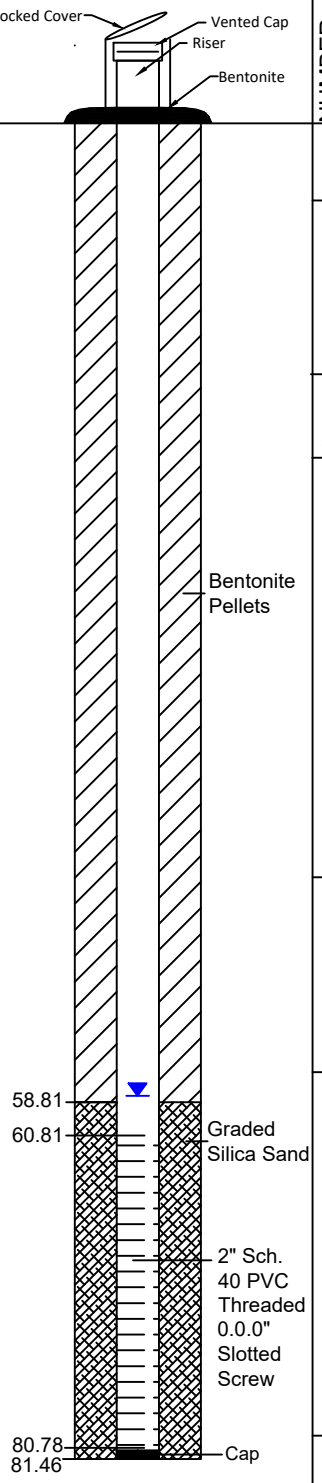
BORING NUMBER : TMW-16

BORING RECORD

Start: 10:15
Finish:

Surface Elevation: 3,422.52'
TOC Elecation: 3,425.68'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sandy Clay, Poorly Graded Sand with Clay, 10YR 5/4 Yellowish Brown, Quartz Clasts ≈ 0-10mm in size, Moderately Sorted, Well Rounded	CH	
	10	Caliche, 7.5YR 8/3 Pink, Clasts ≈0-10mm, Moderately Sorted, Well Rounded	Caliche	
	20	Quartz Sand, 7.5YR 8/2 Pinkish White, Well Sorted, Well Rounded	SW	
	25	Change in Color 7.5YR 6/8 Reddish Yellow		
	45	Change in Color 5YR 5/8 Yellowish Red		
12/20/2023 58.40'	55	Moist		
	60	Water Injected		
	80	TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		5
2		15
3		20
4		45
5		57
6		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'45.4199"N, 103°07'14.3198"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 11/28/2023

BORING NUMBER : TMW-17

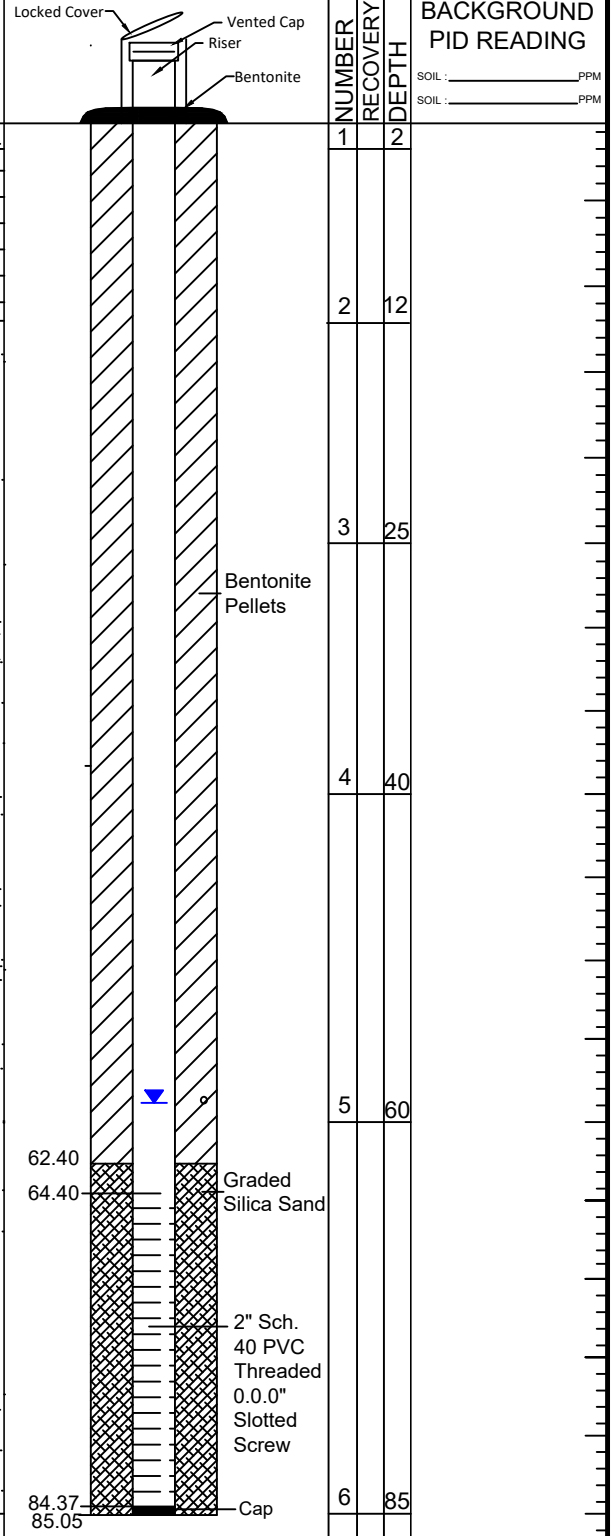
BORING RECORD

Start: 09:25
Finish: 10:25

Surface Elevation: 3,422.29'
TOC Elecation: 3,425.61'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS
	0		
	2	Topsoil, 10YR 5/3 Brown, Organic Material	Top Soil
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with	Caliche
	10		
	12	Depth, Well Rounded, Quartz Clast ≈ 5mm	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted	
	20		
	25	7.5YR 6/4 Light Brown, Very Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm	
	30		
	35		
	40	Darker Color with depth, 7.5YR 5/6, Strong Brown	SW
	45		
	50		
12/20/2023 58.83'	55		
	60	Water Injected	
	65		
	70		
	75		
	80		
	85	TD: 85.00'	

GRAPHIC LOG



NUMBER	RECOVERY	DEPTH
1		2
2		12
3		25
4		40
5		60
6		85

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'41.3327", -103°07'13.9784"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/05/2023

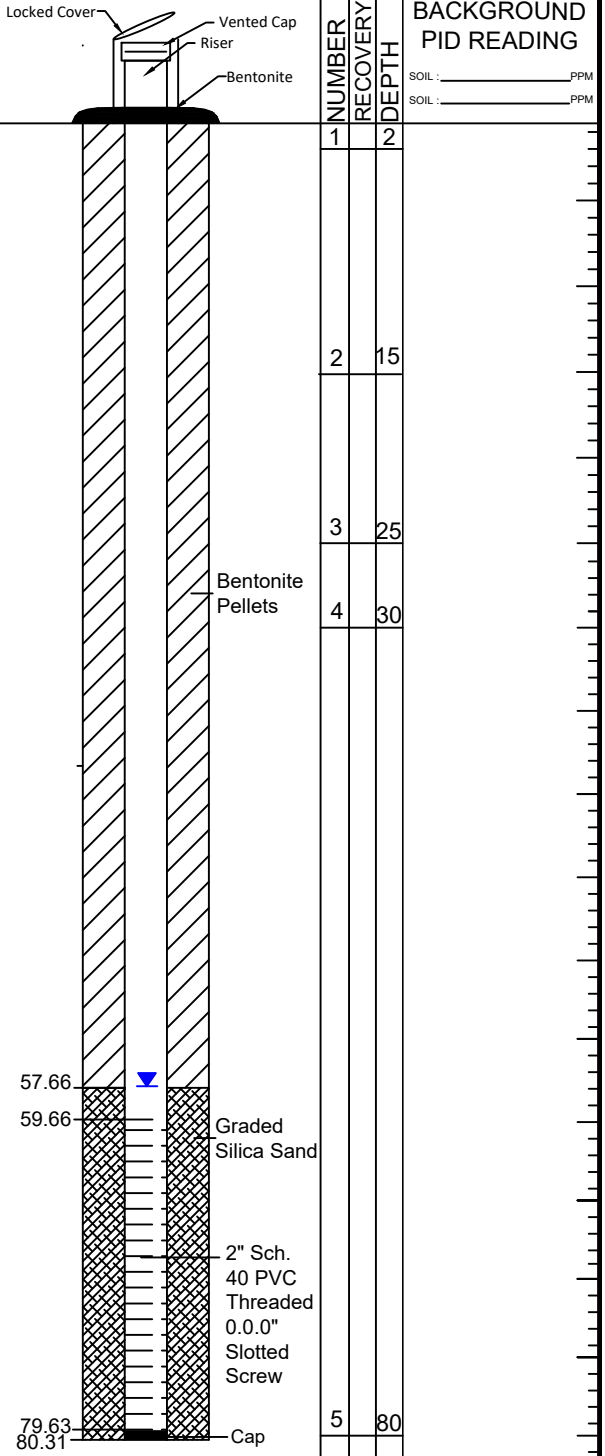
BORING NUMBER : TMW-18

BORING RECORD

Start: 12:15
Finish: 14:06

Surface Elevation: 3,420.79'
TOC Elecation: 3,423.79'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 2.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	5			
	10			
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	20			
	25	Densely Packed		
	30	Water Injected		
	35			
	40		SW	
	45			
	50			
12/20/2023 57.93'	55			
	60			
	65			
	70			
	75			
	80	TD: 80.00'		
	85			



NUMBER	RECOVERY	DEPTH	REMARKS
1		2	BACKGROUND PID READING
			SOIL : PPM
			SOIL : PPM
2		15	
3		25	
4		30	
5		80	

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'39.6650", -103°07'20.1318"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/05/2023

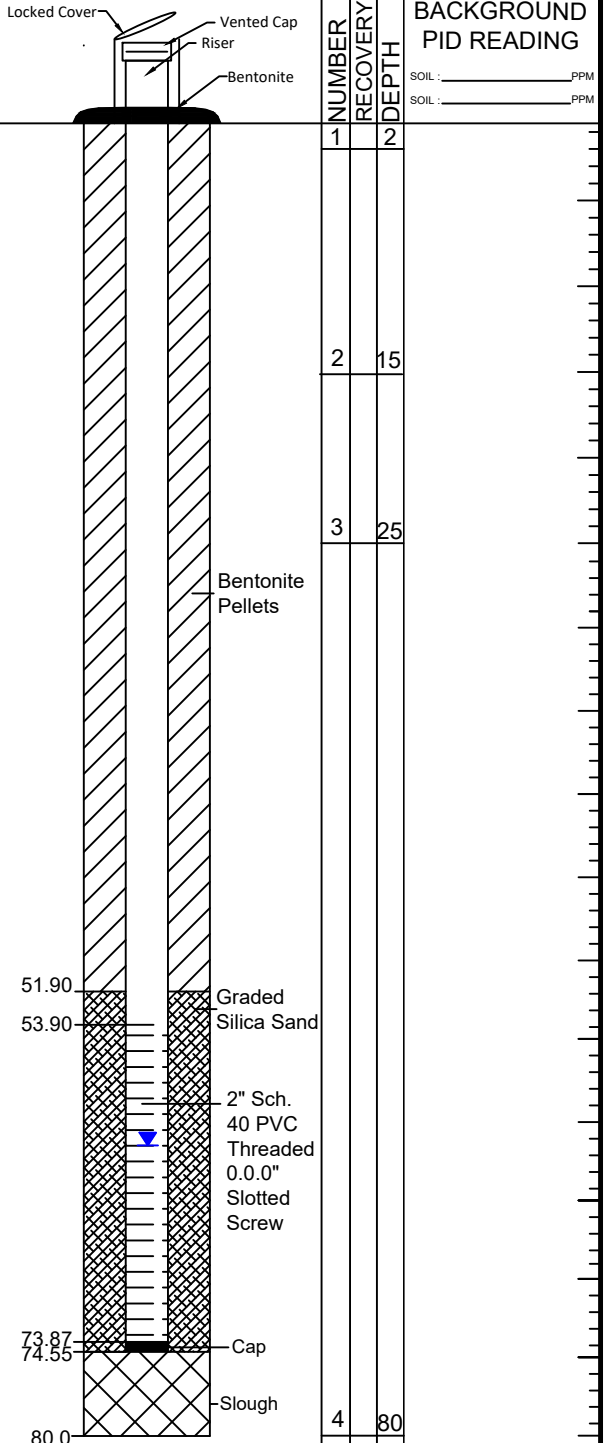
BORING NUMBER : TMW-19

BORING RECORD

Start: 09:35 MST
Finish: 11:25

Surface Elevation: 3,426.46'
TOC Elecation: 3,429.34'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	5			
	10			
	15	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm		
	20			
	25	Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted		
	30			
	35			
	40		SW	
	45			
	50			
	55			
12/20/23 62.38'	60	Water Injected		
	65			
	70			
	75			
	78			
	80	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
	85			
		TD: 80.00'		



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		80

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'43.1706", -103°07'07.6036"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

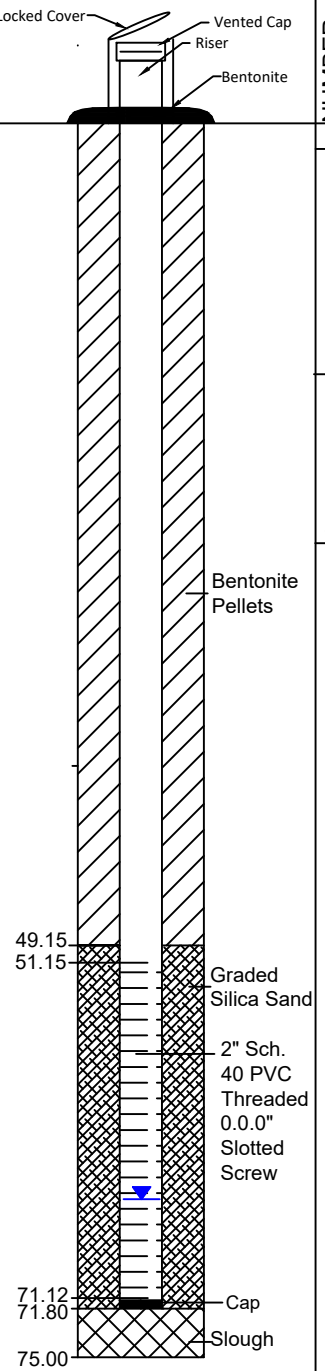
DRILL DATE : 12/06/2023

BORING NUMBER : TMW-20

BORING RECORD

Start: 09:15
Finish: 11:15
Surface Elevation: 3,429.87'
TOC Elecation: 3,432.20'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	USCS	GRAPHIC LOG
	0	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	2	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	20	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm	SW	
	45	Darker Color with depth, 7.5YR 5/6 Strong Brown, Well Sorted		
12/21/23 64.98'	60	Water Injected		
	75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
		TD: 75'		



NUMBER	RECOVERY	DEPTH	BACKGROUND PID READING
1		2	SOIL : PPM
2		15	SOIL : PPM
3		25	
4		80	

REMARKS

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'48.6833", -103°07'04.2879"
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

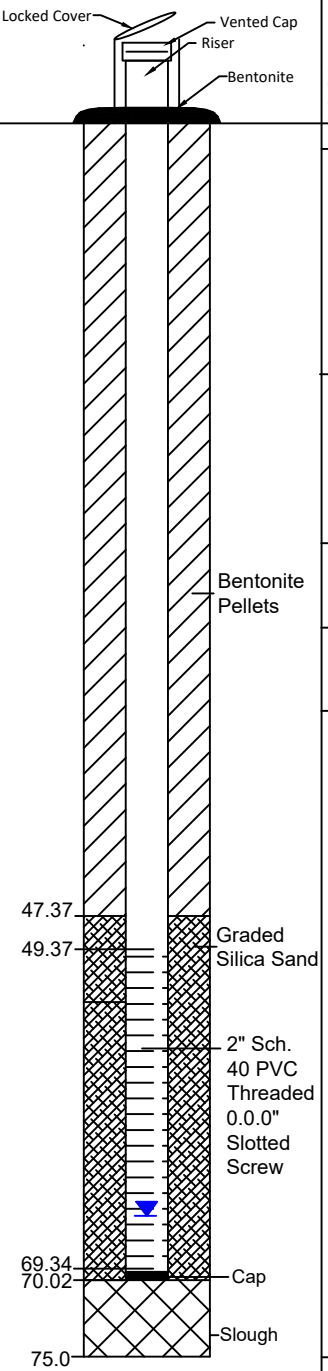
DRILL DATE : 12/07/2023
BORING NUMBER : TMW-21

BORING RECORD

Start: 13:26
Finish: 14:56

Surface Elevation: 3,431.29'
TOC Elecation: 3,434.17'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	20			
	25	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm		
	30			
	35	Darker Color with depth, 7.5YR 5/6 Strong Brown Water Injected at 35'		
	40			
	45		SW	
	50			
	55			
	60			
12/20/23 65.97'	65			
	70			
	73			
	75	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dry	RD	
	80			
		TD: 75.00'		
	85			



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		25
4		30
5		35
6		75

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'53.5612", -103°07'05.2315"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/07/2023

BORING NUMBER : TMW-22

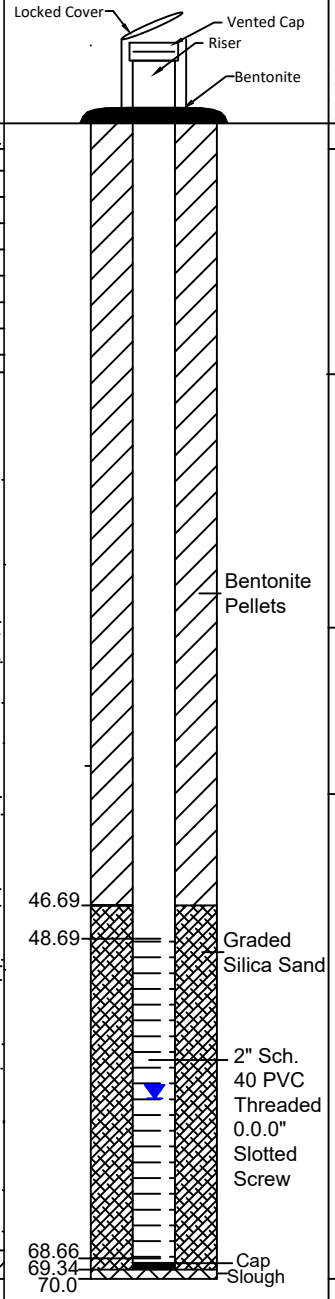
BORING RECORD

Start: 09:55
Finish: 11:55 MST

Surface Elevation: 3,421.28'
TOC Elecation: 3,424.23'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	15	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	30	7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clasts ≈1-2mm Darker Color with depth, 7.5YR 5/6 Strong Brown Water Injected at 40'	SW	
	68	Silty Clay (Redbed) 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Demo Dry	RD	
		TD: 70.00'		

12/20/2023
58.56'



NUMBER	RECOVERY	DEPTH
1		2
2		15
3		30
4		40
5		70

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'35.92"N, 103°07'14.06"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/13/2023

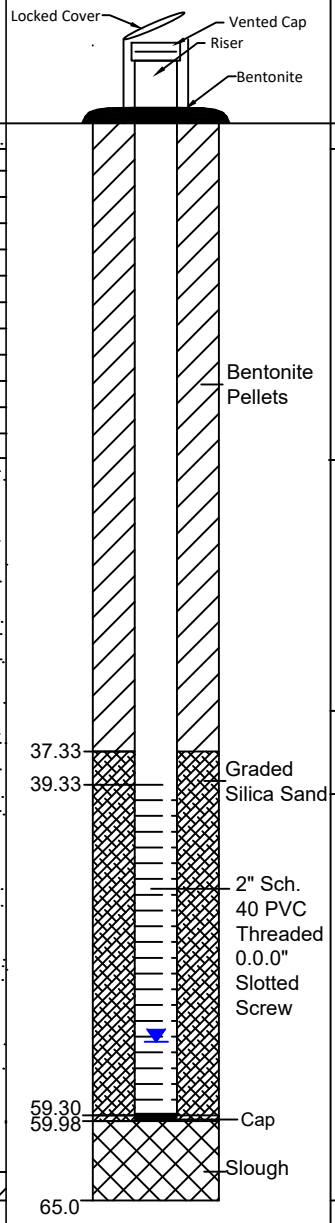
BORING NUMBER : TMW-23

BORING RECORD

Start: 13:45
Finish: 14:55

Surface Elevation: 3,418.54'
TOC Elecation: 3,421.74'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0			
	2	Topsoil, 10YR 4/3 Brown, Organic Material	Top Soil	
	5	Caliche, 7.5YR 8/3 Pink, Increasing Amount of Fine Grained Quartz Sand with Depth, Well Rounded, Quartz Clast ≈ 0.5mm	Caliche	
	10			
	15			
	20			
	25	Quartz Sand, 7.5YR 8/2 Pinkish White, Very Fine Grained Quartz Sand, Well Rounded, Well Sorted		
	30			
	35	Quartz Sand, 7.5YR 6/4 Light Brown, Fine Grained Quartz Sand, Well Rounded, Moderately Sorted, Quartz Clast ≈1-2mm Water Injected at 40'	SW	
	40			
	45			
	50			
12/20/23 56.21'	55			
	60			
	63			
	65	Silty Clay (Redbed), 5YR 4/6, Yellowish Red, Very Fine Grained Quartz Sand, Dona, Dry	RD	
	70	TD: 65.00'		
	75			
	80			
	85			



NUMBER	RECOVERY	DEPTH
1		2
2		20
3		35
4		40
5		65

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU # 37/ 32°28'36.33722"N 103°07'21.23108"W
LAI GEOLOGIST : R. Nelson
DRILLING CONTRACTOR : SDI
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 12/13/2023

BORING NUMBER : TMW-24

Appendix E

Monitoring Well Laboratory Reports

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 3/22/2024 9:58:33 AM

JOB DESCRIPTION

EBDU #37
19-01112-49

JOB NUMBER

880-40887-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
3/22/2024 9:58:33 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-40887-1
SDG: 19-01112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 14
QC Sample Results 15
QC Association Summary 19
Lab Chronicle 21
Certification Summary 25
Method Summary 26
Sample Summary 27
Chain of Custody 28
Receipt Checklists 29

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-40887-1
Project/Site: EBDU #37 SDG: 19-01112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-40887-1
Project: EBDU #37

Job ID: 880-40887-1 Eurofins Midland

Job Narrative
880-40887-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/15/2024 8:55 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C.

Receipt Exceptions
The following samples were submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): TMW-1 (880-40887-1), TMW-2 (880-40887-2), TMW-3 (880-40887-3), TMW-4 (880-40887-4), TMW-5 (880-40887-5), TMW-6 (880-40887-6), TMW-7 (880-40887-7), TMW-8 (880-40887-8), TMW-9 (880-40887-9), TMW-10 (880-40887-10), TMW-11 (880-40887-11), TMW-12 (880-40887-12), TMW-13 (880-40887-13), Windmill (880-40887-14) and Dup-01 (880-40887-15) Sample 15

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: Windmill (880-40887-14). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method 8021B: The laboratory control sample duplicate (LCSD) for analytical batch 880-75949 recovered outside control limits for the following analytes: o-Xylene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-75765 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-1

Date Collected: 03/14/24 09:54
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-1
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 21:52	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 21:52	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 21:52	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 21:52	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 21:52	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 21:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*70 - 130*		*03/19/24 21:52*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*		*03/19/24 21:52*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 21:52	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**136**		2.50		mg/L			03/15/24 18:06	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**551**		50.0		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-2

Date Collected: 03/14/24 10:42
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-2
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 22:13	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 22:13	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 22:13	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 22:13	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 22:13	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 22:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*		*03/19/24 22:13*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*		*03/19/24 22:13*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 22:13	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**249**		5.00		mg/L			03/15/24 18:12	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**992**		50.0		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-3

Date Collected: 03/14/24 10:20
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-3
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 22:33	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 22:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 22:33	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 22:33	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 22:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 22:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*		*03/19/24 22:33*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*		*03/19/24 22:33*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 22:33	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**234**		5.00		mg/L			03/15/24 18:18	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**959**		50.0		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-4

Date Collected: 03/14/24 12:49
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-4
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 22:54	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 22:54	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 22:54	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 22:54	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 22:54	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 22:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*		*03/19/24 22:54*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*		*03/19/24 22:54*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 22:54	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**580**		10.0		mg/L			03/15/24 18:24	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1750**		100		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-5

Date Collected: 03/14/24 13:03
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-5

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 23:14	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 23:14	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 23:14	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 23:14	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 23:14	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*		*03/19/24 23:14*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*		*03/19/24 23:14*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 23:14	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2980**	**F1**	25.0		mg/L			03/15/24 18:30	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**5360**		200		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-6

Date Collected: 03/14/24 13:16
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-6

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 23:35	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 23:35	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 23:35	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 23:35	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 23:35	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*03/19/24 23:35*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*03/19/24 23:35*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 23:35	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1500**		25.0		mg/L			03/15/24 18:49	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3280**		200		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-7

Date Collected: 03/14/24 12:35
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-7
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 23:55	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 23:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 23:55	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 23:55	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/19/24 23:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*		*03/19/24 23:55*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*		*03/19/24 23:55*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/19/24 23:55	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1740**		25.0		mg/L			03/15/24 18:55	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3690**		200		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-8

Date Collected: 03/14/24 11:00
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-8
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 00:16	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 00:16	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 00:16	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 00:16	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 00:16	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 00:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*		*03/20/24 00:16*	*1*
1,4-Difluorobenzene (Surr)	*87*		*70 - 130*		*03/20/24 00:16*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 00:16	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**655**		10.0		mg/L			03/15/24 19:13	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1830**		100		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-9

Date Collected: 03/14/24 10:03
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-9
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 00:36	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 00:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 00:36	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 00:36	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 00:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*03/20/24 00:36*	*1*
1,4-Difluorobenzene (Surr)	*78*		*70 - 130*		*03/20/24 00:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 00:36	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**29.3**		2.50		mg/L			03/15/24 19:20	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**373**		50.0		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-10

Date Collected: 03/14/24 09:44
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-10
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 00:57	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 00:57	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 00:57	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 00:57	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 00:57	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 00:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*79*		*70 - 130*		*03/20/24 00:57*	*1*
1,4-Difluorobenzene (Surr)	*86*		*70 - 130*		*03/20/24 00:57*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 00:57	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**17.0**		2.50		mg/L			03/15/24 19:26	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**405**		50.0		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-11

Date Collected: 03/14/24 11:14
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-11
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 02:20	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 02:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 02:20	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 02:20	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 02:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*03/20/24 02:20*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*03/20/24 02:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 02:20	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**318**		5.00		mg/L			03/15/24 19:32	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1090**		50.0		mg/L			03/15/24 20:09	1

Client Sample ID: TMW-12

Date Collected: 03/14/24 11:30
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-12
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 02:41	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 02:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 02:41	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 02:41	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 02:41	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*70 - 130*		*03/20/24 02:41*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*03/20/24 02:41*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 02:41	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**448**		5.00		mg/L			03/15/24 19:38	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1390**		100		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-13

Date Collected: 03/14/24 13:29
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-13

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 03:01	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 03:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 03:01	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 03:01	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 03:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 03:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*03/20/24 03:01*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*		*03/20/24 03:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 03:01	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1690**		25.0		mg/L			03/15/24 19:44	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3480**		200		mg/L			03/15/24 20:09	1

Client Sample ID: Windmill

Date Collected: 03/14/24 09:30
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-14

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 03:22	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 03:22	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 03:22	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 03:22	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 03:22	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 03:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*03/20/24 03:22*	*1*
1,4-Difluorobenzene (Surr)	*69*	*S1-*	*70 - 130*		*03/20/24 03:22*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 03:22	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**471**		5.00		mg/L			03/15/24 19:50	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1080**		50.0		mg/L			03/15/24 20:09	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: Dup-01

Date Collected: 03/14/24 00:00
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-15

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/20/24 03:42	1
Toluene	<0.00200	U	0.00200		mg/L			03/20/24 03:42	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/20/24 03:42	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/20/24 03:42	1
o-Xylene	<0.00200	U *+	0.00200		mg/L			03/20/24 03:42	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/20/24 03:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*70 - 130*		*03/20/24 03:42*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*03/20/24 03:42*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/20/24 03:42	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**328**		5.00		mg/L			03/19/24 08:16	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**986**		50.0		mg/L			03/15/24 20:09	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-40887-1	TMW-1	76	92										
880-40887-1 MS	TMW-1	112	100										
880-40887-1 MSD	TMW-1	117	112										
880-40887-2	TMW-2	82	88										
880-40887-3	TMW-3	81	87										
880-40887-4	TMW-4	82	84										
880-40887-5	TMW-5	81	86										
880-40887-6	TMW-6	78	90										
880-40887-7	TMW-7	80	92										
880-40887-8	TMW-8	83	87										
880-40887-9	TMW-9	95	78										
880-40887-10	TMW-10	79	86										
880-40887-11	TMW-11	78	90										
880-40887-12	TMW-12	77	90										
880-40887-13	TMW-13	78	89										
880-40887-14	Windmill	92	69 S1-										
880-40887-15	Dup-01	78	90										
LCS 880-75949/34	Lab Control Sample	112	90										
LCSD 880-75949/35	Lab Control Sample Dup	117	107										
MB 880-75818/5-A	Method Blank	71	92										
MB 880-75949/39	Method Blank	71	90										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-75818/5-A
Matrix: Water
Analysis Batch: 75949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 75818

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L		03/18/24 10:27	03/19/24 10:55	1
Toluene	<0.00200	U	0.00200		mg/L		03/18/24 10:27	03/19/24 10:55	1
Ethylbenzene	<0.00200	U	0.00200		mg/L		03/18/24 10:27	03/19/24 10:55	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L		03/18/24 10:27	03/19/24 10:55	1
o-Xylene	<0.00200	U	0.00200		mg/L		03/18/24 10:27	03/19/24 10:55	1
Xylenes, Total	<0.00400	U	0.00400		mg/L		03/18/24 10:27	03/19/24 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*	*03/18/24 10:27*	*03/19/24 10:55*	*1*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*	*03/18/24 10:27*	*03/19/24 10:55*	*1*

Lab Sample ID: MB 880-75949/39
Matrix: Water
Analysis Batch: 75949

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/19/24 21:31	1
Toluene	<0.00200	U	0.00200		mg/L			03/19/24 21:31	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/19/24 21:31	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/19/24 21:31	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/19/24 21:31	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/19/24 21:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*71*		*70 - 130*		*03/19/24 21:31*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*03/19/24 21:31*	*1*

Lab Sample ID: LCS 880-75949/34
Matrix: Water
Analysis Batch: 75949

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.08666		mg/L		87	70 - 130		
Toluene			0.100	0.09146		mg/L		91	70 - 130		
Ethylbenzene			0.100	0.1067		mg/L		107	70 - 130		
m,p-Xylenes			0.200	0.2117		mg/L		106	70 - 130		
o-Xylene			0.100	0.1070		mg/L		107	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*

Lab Sample ID: LCSD 880-75949/35
Matrix: Water
Analysis Batch: 75949

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.1043		mg/L		104	70 - 130	19	20

Eurofins Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: LCSD 880-75949/35
Matrix: Water
Analysis Batch: 75949

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			0.100	0.09786		mg/L		98	70 - 130	7	20
Ethylbenzene			0.100	0.1096		mg/L		110	70 - 130	3	20
m,p-Xylenes			0.200	0.2154		mg/L		108	70 - 130	2	20
o-Xylene			0.100	0.1307	*+	mg/L		131	70 - 130	20	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*107*		*70 - 130*

Lab Sample ID: 880-40887-1 MS
Matrix: Water
Analysis Batch: 75949

Client Sample ID: TMW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U	0.100	0.1035		mg/L		103	70 - 130
Toluene	<0.00200	U	0.100	0.1054		mg/L		105	70 - 130
Ethylbenzene	<0.00200	U	0.100	0.1257		mg/L		126	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.2430		mg/L		122	70 - 130
o-Xylene	<0.00200	U *+	0.100	0.1228		mg/L		123	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 880-40887-1 MSD
Matrix: Water
Analysis Batch: 75949

Client Sample ID: TMW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.1121		mg/L		112	70 - 130	8	25
Toluene	<0.00200	U	0.100	0.1080		mg/L		108	70 - 130	2	25
Ethylbenzene	<0.00200	U	0.100	0.1257		mg/L		126	70 - 130	0	25
m,p-Xylenes	<0.00400	U	0.200	0.2522		mg/L		126	70 - 130	4	25
o-Xylene	<0.00200	U *+	0.100	0.1274		mg/L		127	70 - 130	4	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*117*		*70 - 130*
1,4-Difluorobenzene (Surr)	*112*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-75676/3
Matrix: Water
Analysis Batch: 75676

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			03/19/24 05:58	1

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 880-75676/4
Matrix: Water
Analysis Batch: 75676

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	25.93		mg/L		104	90 - 110		

Lab Sample ID: LCSD 880-75676/5
Matrix: Water
Analysis Batch: 75676

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	25.97		mg/L		104	90 - 110	0	20

Lab Sample ID: MB 880-75765/3
Matrix: Water
Analysis Batch: 75765

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			03/15/24 16:46	1

Lab Sample ID: LCS 880-75765/4
Matrix: Water
Analysis Batch: 75765

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			25.0	24.00		mg/L		96	90 - 110		

Lab Sample ID: LCSD 880-75765/5
Matrix: Water
Analysis Batch: 75765

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	23.04		mg/L		92	90 - 110	4	20

Lab Sample ID: 880-40887-5 MS
Matrix: Water
Analysis Batch: 75765

Client Sample ID: TMW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	2980	F1	1250	4453	F1	mg/L		118	90 - 110		

Lab Sample ID: 880-40887-5 MSD
Matrix: Water
Analysis Batch: 75765

Client Sample ID: TMW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2980	F1	1250	4385	F1	mg/L		112	90 - 110	2	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-75768/1
Matrix: Water
Analysis Batch: 75768

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0		mg/L			03/15/24 20:09	1

Lab Sample ID: LCS 880-75768/2
Matrix: Water
Analysis Batch: 75768

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	981.0		mg/L		98	80 - 120		

Lab Sample ID: LCSD 880-75768/3
Matrix: Water
Analysis Batch: 75768

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	984.0		mg/L		98	80 - 120	0	10

Lab Sample ID: 880-40887-8 DU
Matrix: Water
Analysis Batch: 75768

Client Sample ID: TMW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1830			1798		mg/L				2	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

GC VOA

Prep Batch: 75818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-75818/5-A	Method Blank	Total/NA	Water	5035	

Analysis Batch: 75949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	8021B	
880-40887-2	TMW-2	Total/NA	Water	8021B	
880-40887-3	TMW-3	Total/NA	Water	8021B	
880-40887-4	TMW-4	Total/NA	Water	8021B	
880-40887-5	TMW-5	Total/NA	Water	8021B	
880-40887-6	TMW-6	Total/NA	Water	8021B	
880-40887-7	TMW-7	Total/NA	Water	8021B	
880-40887-8	TMW-8	Total/NA	Water	8021B	
880-40887-9	TMW-9	Total/NA	Water	8021B	
880-40887-10	TMW-10	Total/NA	Water	8021B	
880-40887-11	TMW-11	Total/NA	Water	8021B	
880-40887-12	TMW-12	Total/NA	Water	8021B	
880-40887-13	TMW-13	Total/NA	Water	8021B	
880-40887-14	Windmill	Total/NA	Water	8021B	
880-40887-15	Dup-01	Total/NA	Water	8021B	
MB 880-75818/5-A	Method Blank	Total/NA	Water	8021B	75818
MB 880-75949/39	Method Blank	Total/NA	Water	8021B	
LCS 880-75949/34	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-75949/35	Lab Control Sample Dup	Total/NA	Water	8021B	
880-40887-1 MS	TMW-1	Total/NA	Water	8021B	
880-40887-1 MSD	TMW-1	Total/NA	Water	8021B	

Analysis Batch: 76087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	Total BTEX	
880-40887-2	TMW-2	Total/NA	Water	Total BTEX	
880-40887-3	TMW-3	Total/NA	Water	Total BTEX	
880-40887-4	TMW-4	Total/NA	Water	Total BTEX	
880-40887-5	TMW-5	Total/NA	Water	Total BTEX	
880-40887-6	TMW-6	Total/NA	Water	Total BTEX	
880-40887-7	TMW-7	Total/NA	Water	Total BTEX	
880-40887-8	TMW-8	Total/NA	Water	Total BTEX	
880-40887-9	TMW-9	Total/NA	Water	Total BTEX	
880-40887-10	TMW-10	Total/NA	Water	Total BTEX	
880-40887-11	TMW-11	Total/NA	Water	Total BTEX	
880-40887-12	TMW-12	Total/NA	Water	Total BTEX	
880-40887-13	TMW-13	Total/NA	Water	Total BTEX	
880-40887-14	Windmill	Total/NA	Water	Total BTEX	
880-40887-15	Dup-01	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 75676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-15	Dup-01	Total/NA	Water	300.0	
MB 880-75676/3	Method Blank	Total/NA	Water	300.0	
LCS 880-75676/4	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

HPLC/IC (Continued)

Analysis Batch: 75676 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-75676/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 75765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	300.0	
880-40887-2	TMW-2	Total/NA	Water	300.0	
880-40887-3	TMW-3	Total/NA	Water	300.0	
880-40887-4	TMW-4	Total/NA	Water	300.0	
880-40887-5	TMW-5	Total/NA	Water	300.0	
880-40887-6	TMW-6	Total/NA	Water	300.0	
880-40887-7	TMW-7	Total/NA	Water	300.0	
880-40887-8	TMW-8	Total/NA	Water	300.0	
880-40887-9	TMW-9	Total/NA	Water	300.0	
880-40887-10	TMW-10	Total/NA	Water	300.0	
880-40887-11	TMW-11	Total/NA	Water	300.0	
880-40887-12	TMW-12	Total/NA	Water	300.0	
880-40887-13	TMW-13	Total/NA	Water	300.0	
880-40887-14	Windmill	Total/NA	Water	300.0	
MB 880-75765/3	Method Blank	Total/NA	Water	300.0	
LCS 880-75765/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-75765/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40887-5 MS	TMW-5	Total/NA	Water	300.0	
880-40887-5 MSD	TMW-5	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 75768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40887-1	TMW-1	Total/NA	Water	SM 2540C	
880-40887-2	TMW-2	Total/NA	Water	SM 2540C	
880-40887-3	TMW-3	Total/NA	Water	SM 2540C	
880-40887-4	TMW-4	Total/NA	Water	SM 2540C	
880-40887-5	TMW-5	Total/NA	Water	SM 2540C	
880-40887-6	TMW-6	Total/NA	Water	SM 2540C	
880-40887-7	TMW-7	Total/NA	Water	SM 2540C	
880-40887-8	TMW-8	Total/NA	Water	SM 2540C	
880-40887-9	TMW-9	Total/NA	Water	SM 2540C	
880-40887-10	TMW-10	Total/NA	Water	SM 2540C	
880-40887-11	TMW-11	Total/NA	Water	SM 2540C	
880-40887-12	TMW-12	Total/NA	Water	SM 2540C	
880-40887-13	TMW-13	Total/NA	Water	SM 2540C	
880-40887-14	Windmill	Total/NA	Water	SM 2540C	
880-40887-15	Dup-01	Total/NA	Water	SM 2540C	
MB 880-75768/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-75768/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-75768/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-40887-8 DU	TMW-8	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-1
Date Collected: 03/14/24 09:54
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 21:52	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 21:52	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 18:06	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-2
Date Collected: 03/14/24 10:42
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:13	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:13	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 18:12	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-3
Date Collected: 03/14/24 10:20
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:33	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 18:18	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-4
Date Collected: 03/14/24 12:49
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 22:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 22:54	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	75765	03/15/24 18:24	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-5
Date Collected: 03/14/24 13:03
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:14	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:14	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:30	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-6
Date Collected: 03/14/24 13:16
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:35	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:35	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-7
Date Collected: 03/14/24 12:35
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/19/24 23:55	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/19/24 23:55	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 18:55	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-8
Date Collected: 03/14/24 11:00
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:16	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:16	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	75765	03/15/24 19:13	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-9
Date Collected: 03/14/24 10:03
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:36	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 19:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-10
Date Collected: 03/14/24 09:44
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 00:57	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 00:57	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	75765	03/15/24 19:26	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Client Sample ID: TMW-11
Date Collected: 03/14/24 11:14
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 02:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 02:20	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:32	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-12
Date Collected: 03/14/24 11:30
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 02:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 02:41	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: TMW-13
Date Collected: 03/14/24 13:29
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:01	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	75765	03/15/24 19:44	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: Windmill
Date Collected: 03/14/24 09:30
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:22	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:22	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75765	03/15/24 19:50	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Client Sample ID: Dup-01
Date Collected: 03/14/24 00:00
Date Received: 03/15/24 08:55

Lab Sample ID: 880-40887-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	75949	03/20/24 03:42	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76087	03/20/24 03:42	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	75676	03/19/24 08:16	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	75768	03/15/24 20:09	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-40887-1
SDG: 19-01112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-40887-1	TMW-1	Water	03/14/24 09:54	03/15/24 08:55
880-40887-2	TMW-2	Water	03/14/24 10:42	03/15/24 08:55
880-40887-3	TMW-3	Water	03/14/24 10:20	03/15/24 08:55
880-40887-4	TMW-4	Water	03/14/24 12:49	03/15/24 08:55
880-40887-5	TMW-5	Water	03/14/24 13:03	03/15/24 08:55
880-40887-6	TMW-6	Water	03/14/24 13:16	03/15/24 08:55
880-40887-7	TMW-7	Water	03/14/24 12:35	03/15/24 08:55
880-40887-8	TMW-8	Water	03/14/24 11:00	03/15/24 08:55
880-40887-9	TMW-9	Water	03/14/24 10:03	03/15/24 08:55
880-40887-10	TMW-10	Water	03/14/24 09:44	03/15/24 08:55
880-40887-11	TMW-11	Water	03/14/24 11:14	03/15/24 08:55
880-40887-12	TMW-12	Water	03/14/24 11:30	03/15/24 08:55
880-40887-13	TMW-13	Water	03/14/24 13:29	03/15/24 08:55
880-40887-14	Windmill	Water	03/14/24 09:30	03/15/24 08:55
880-40887-15	Dup-01	Water	03/14/24 00:00	03/15/24 08:55

Page 369 of 733

887 No. 3070

CHAIN-OF-CUSTODY

3/22/2024

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 3/14/2024 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR AN & DSL

Data Reported to Mark Larson/Robert Nelson

TRRP report? ☐ Yes ☑ No

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

TIME ZONE
Time zone/State
MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-1		3/14/24	0954	W	5				X		X	Direct Bill to Apache
TMW-2			1042									
TMW-3			1020									
TMW-4			1249									
TMW-5			1303									
TMW-6			1316									
TMW-7			1235									
TMW-8			1100									
TMW-9			1003									
TMW-10			0944									
TMW-11			1114									
TMW-12			1130									
TMW-13			1329									
Windmill			0930									

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

880-40887 Chain of Custody

TOTAL 14

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	3/15 0855	[signature]
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 2.3/2.2 THERM# IR8 - 10
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED

Page 28 of 29

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-40887-1
SDG Number: 19-01112-49

Login Number: 40887
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 3/27/2024 10:54:02 AM

JOB DESCRIPTION

EDBU #37
19-0112-49

JOB NUMBER

880-40975-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
3/27/2024 10:54:02 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Laboratory Job ID: 880-40975-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 12
QC Sample Results 13
QC Association Summary 17
Lab Chronicle 19
Certification Summary 22
Method Summary 23
Sample Summary 24
Chain of Custody 25
Receipt Checklists 26

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-40975-1
Project/Site: EDBU #37 SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-40975-1
Project: EDBU #37

Job ID: 880-40975-1 Eurofins Midland

Job Narrative
880-40975-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/18/2024 9:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.3°C.

GC VOA
Method 8021B: Surrogate recovery for the following sample was outside control limits: (MB 880-76563/8). Evidence of matrix interferences is not obvious.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 880-76122 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

TMW-14 (880-40975-1), TMW-15 (880-40975-2), TMW-16 (880-40975-3), TMW-17 (880-40975-4), TMW-18 (880-40975-5), TMW-19 (880-40975-6), TMW-20 (880-40975-7), TMW-21 (880-40975-8), TMW-22 (880-40975-9), TMW-23 (880-40975-10), (880-40975-B-1 MS) and (880-40975-B-1 MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-14

Date Collected: 03/15/24 09:09
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-1

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 12:18	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 12:18	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 12:18	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 12:18	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 12:18	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 12:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*82*		*70 - 130*		*03/26/24 12:18*	*1*
1,4-Difluorobenzene (Surr)	*81*		*70 - 130*		*03/26/24 12:18*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 12:18	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1810**	**F1**	25.0		mg/L			03/20/24 17:19	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**2820**		200		mg/L			03/19/24 18:00	1

Client Sample ID: TMW-15

Date Collected: 03/15/24 09:30
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-2

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 12:45	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 12:45	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 12:45	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 12:45	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 12:45	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*03/26/24 12:45*	*1*
1,4-Difluorobenzene (Surr)	*79*		*70 - 130*		*03/26/24 12:45*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 12:45	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2160**		25.0		mg/L			03/20/24 17:38	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3400**		200		mg/L			03/19/24 18:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-16

Date Collected: 03/15/24 10:15
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-3

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 13:12	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 13:12	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 13:12	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 13:12	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 13:12	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*03/26/24 13:12*	*1*
1,4-Difluorobenzene (Surr)	*84*		*70 - 130*		*03/26/24 13:12*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 13:12	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43.0**		2.50		mg/L			03/20/24 17:44	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**380**		50.0		mg/L			03/19/24 18:00	1

Client Sample ID: TMW-17

Date Collected: 03/15/24 10:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-4

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 13:39	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 13:39	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 13:39	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 13:39	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 13:39	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 13:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*70 - 130*		*03/26/24 13:39*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*03/26/24 13:39*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 13:39	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5680**		25.0		mg/L			03/20/24 18:02	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**8930**		500		mg/L			03/19/24 18:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-18

Date Collected: 03/15/24 09:40
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-5

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 14:06	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 14:06	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 14:06	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 14:06	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 14:06	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 14:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*70 - 130*		*03/26/24 14:06*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*		*03/26/24 14:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 14:06	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**908**		10.0		mg/L			03/20/24 18:09	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1650**		100		mg/L			03/19/24 18:00	1

Client Sample ID: TMW-19

Date Collected: 03/15/24 10:35
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-6

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 14:32	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 14:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 14:32	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 14:32	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 14:32	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*03/26/24 14:32*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*		*03/26/24 14:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 14:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**553**		5.00		mg/L			03/20/24 18:15	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1070**		50.0		mg/L			03/19/24 18:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-20

Date Collected: 03/15/24 12:15
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-7
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 14:59	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 14:59	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 14:59	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 14:59	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 14:59	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 14:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*86*		*70 - 130*		*03/26/24 14:59*	*1*
1,4-Difluorobenzene (Surr)	*82*		*70 - 130*		*03/26/24 14:59*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 14:59	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**385**		5.00		mg/L			03/20/24 18:21	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**937**		50.0		mg/L			03/19/24 18:00	1

Client Sample ID: TMW-21

Date Collected: 03/15/24 12:29
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-8
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 15:26	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 15:26	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 15:26	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 15:26	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 15:26	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*03/26/24 15:26*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*		*03/26/24 15:26*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 15:26	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**310**		2.50		mg/L			03/20/24 18:27	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**902**		50.0		mg/L			03/19/24 18:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-22

Date Collected: 03/15/24 13:30
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-9
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 15:53	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 15:53	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 15:53	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 15:53	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 15:53	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 15:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*03/26/24 15:53*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*		*03/26/24 15:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 15:53	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**342**		5.00		mg/L			03/20/24 18:33	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**918**		50.0		mg/L			03/19/24 18:00	1

Client Sample ID: TMW-23

Date Collected: 03/15/24 12:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-10
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 16:20	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 16:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 16:20	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 16:20	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 16:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 16:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*03/26/24 16:20*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*03/26/24 16:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 16:20	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1020**		10.0		mg/L			03/20/24 18:39	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**2020**		100		mg/L			03/19/24 18:00	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-24

Date Collected: 03/15/24 11:45
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-11

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 18:08	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 18:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 18:08	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 18:08	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 18:08	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*		*03/26/24 18:08*	*1*
1,4-Difluorobenzene (Surr)	*89*		*70 - 130*		*03/26/24 18:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 18:08	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**330**		5.00		mg/L			03/20/24 19:28	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1060**		50.0		mg/L			03/19/24 18:00	1

Client Sample ID: Dup-2

Date Collected: 03/15/24 00:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-12

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 18:33	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 18:33	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 18:33	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 18:33	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 18:33	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 18:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*87*		*70 - 130*		*03/26/24 18:33*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*03/26/24 18:33*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			03/26/24 18:33	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1330**		10.0		mg/L			03/20/24 19:47	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**2530**		200		mg/L			03/19/24 18:00	1

Eurofins Midland

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-40975-1	TMW-14	82	81										
880-40975-1 MS	TMW-14	85	94										
880-40975-1 MSD	TMW-14	84	75										
880-40975-2	TMW-15	86	79										
880-40975-3	TMW-16	91	84										
880-40975-4	TMW-17	89	85										
880-40975-5	TMW-18	99	94										
880-40975-6	TMW-19	87	82										
880-40975-7	TMW-20	86	82										
880-40975-8	TMW-21	92	89										
880-40975-9	TMW-22	95	94										
880-40975-10	TMW-23	93	85										
880-40975-11	TMW-24	90	89										
880-40975-12	Dup-2	87	85										
LCS 880-76563/3	Lab Control Sample	80	93										
LCSD 880-76563/4	Lab Control Sample Dup	83	92										
MB 880-76563/8	Method Blank	54 S1-	85										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-76563/8
Matrix: Water
Analysis Batch: 76563

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			03/26/24 11:52	1
Toluene	<0.00200	U	0.00200		mg/L			03/26/24 11:52	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			03/26/24 11:52	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			03/26/24 11:52	1
o-Xylene	<0.00200	U	0.00200		mg/L			03/26/24 11:52	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			03/26/24 11:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*54*	*S1-*	*70 - 130*		*03/26/24 11:52*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*03/26/24 11:52*	*1*

Lab Sample ID: LCS 880-76563/3
Matrix: Water
Analysis Batch: 76563

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.1017		mg/L		102	70 - 130		
Toluene			0.100	0.1065		mg/L		107	70 - 130		
Ethylbenzene			0.100	0.1016		mg/L		102	70 - 130		
m,p-Xylenes			0.200	0.2051		mg/L		103	70 - 130		
o-Xylene			0.100	0.1056		mg/L		106	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*80*		*70 - 130*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*

Lab Sample ID: LCSD 880-76563/4
Matrix: Water
Analysis Batch: 76563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08710		mg/L		87	70 - 130	15	20
Toluene			0.100	0.09196		mg/L		92	70 - 130	15	20
Ethylbenzene			0.100	0.08790		mg/L		88	70 - 130	14	20
m,p-Xylenes			0.200	0.1814		mg/L		91	70 - 130	12	20
o-Xylene			0.100	0.09050		mg/L		91	70 - 130	15	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*70 - 130*
1,4-Difluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: 880-40975-1 MS
Matrix: Water
Analysis Batch: 76563

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U	0.100	0.08796		mg/L		87	70 - 130		
Toluene	<0.00200	U	0.100	0.09427		mg/L		94	70 - 130		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-40975-1 MS
Matrix: Water
Analysis Batch: 76563

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.08690		mg/L		87	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1747		mg/L		87	70 - 130
o-Xylene	<0.00200	U	0.100	0.09102		mg/L		91	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*85*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: 880-40975-1 MSD
Matrix: Water
Analysis Batch: 76563

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U	0.100	0.07976		mg/L		79	70 - 130	10	25
Toluene	<0.00200	U	0.100	0.08910		mg/L		88	70 - 130	6	25
Ethylbenzene	<0.00200	U	0.100	0.07970		mg/L		80	70 - 130	9	25
m,p-Xylenes	<0.00400	U	0.200	0.1630		mg/L		82	70 - 130	7	25
o-Xylene	<0.00200	U	0.100	0.08579		mg/L		86	70 - 130	6	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*84*		*70 - 130*
1,4-Difluorobenzene (Surr)	*75*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-76122/3
Matrix: Water
Analysis Batch: 76122

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			03/20/24 15:35	1

Lab Sample ID: LCS 880-76122/4
Matrix: Water
Analysis Batch: 76122

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			25.0	24.16		mg/L		97	90 - 110

Lab Sample ID: LCSD 880-76122/5
Matrix: Water
Analysis Batch: 76122

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	24.18		mg/L		97	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-40975-1 MS
Matrix: Water
Analysis Batch: 76122

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	1810	F1	1250	2879	F1	mg/L		85	90 - 110

Lab Sample ID: 880-40975-1 MSD
Matrix: Water
Analysis Batch: 76122

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	1810	F1	1250	2821	F1	mg/L		81	90 - 110	2	20

Lab Sample ID: MB 880-76126/3
Matrix: Water
Analysis Batch: 76126

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500	mg/L			03/20/24 19:10	1

Lab Sample ID: LCS 880-76126/4
Matrix: Water
Analysis Batch: 76126

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	25.0	24.61		mg/L		98	90 - 110

Lab Sample ID: LCSD 880-76126/5
Matrix: Water
Analysis Batch: 76126

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	25.0	24.59		mg/L		98	90 - 110	0	20

Lab Sample ID: 880-40975-11 MS
Matrix: Water
Analysis Batch: 76126

Client Sample ID: TMW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	330		250	578.5		mg/L		99	90 - 110

Lab Sample ID: 880-40975-11 MSD
Matrix: Water
Analysis Batch: 76126

Client Sample ID: TMW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	330		250	578.0		mg/L		99	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-76041/1
Matrix: Water
Analysis Batch: 76041

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0		mg/L			03/19/24 18:00	1

Lab Sample ID: LCS 880-76041/2
Matrix: Water
Analysis Batch: 76041

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	983.0		mg/L		98	80 - 120		

Lab Sample ID: LCSD 880-76041/3
Matrix: Water
Analysis Batch: 76041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1020		mg/L		102	80 - 120	4	10

Lab Sample ID: 880-40975-1 DU
Matrix: Water
Analysis Batch: 76041

Client Sample ID: TMW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2820			2824		mg/L				0	10

Lab Sample ID: 880-40975-11 DU
Matrix: Water
Analysis Batch: 76041

Client Sample ID: TMW-24
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1060			1091		mg/L				3	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

GC VOA

Analysis Batch: 76563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	8021B	
880-40975-2	TMW-15	Total/NA	Water	8021B	
880-40975-3	TMW-16	Total/NA	Water	8021B	
880-40975-4	TMW-17	Total/NA	Water	8021B	
880-40975-5	TMW-18	Total/NA	Water	8021B	
880-40975-6	TMW-19	Total/NA	Water	8021B	
880-40975-7	TMW-20	Total/NA	Water	8021B	
880-40975-8	TMW-21	Total/NA	Water	8021B	
880-40975-9	TMW-22	Total/NA	Water	8021B	
880-40975-10	TMW-23	Total/NA	Water	8021B	
880-40975-11	TMW-24	Total/NA	Water	8021B	
880-40975-12	Dup-2	Total/NA	Water	8021B	
MB 880-76563/8	Method Blank	Total/NA	Water	8021B	
LCS 880-76563/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-76563/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-40975-1 MS	TMW-14	Total/NA	Water	8021B	
880-40975-1 MSD	TMW-14	Total/NA	Water	8021B	

Analysis Batch: 76704

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	Total BTEX	
880-40975-2	TMW-15	Total/NA	Water	Total BTEX	
880-40975-3	TMW-16	Total/NA	Water	Total BTEX	
880-40975-4	TMW-17	Total/NA	Water	Total BTEX	
880-40975-5	TMW-18	Total/NA	Water	Total BTEX	
880-40975-6	TMW-19	Total/NA	Water	Total BTEX	
880-40975-7	TMW-20	Total/NA	Water	Total BTEX	
880-40975-8	TMW-21	Total/NA	Water	Total BTEX	
880-40975-9	TMW-22	Total/NA	Water	Total BTEX	
880-40975-10	TMW-23	Total/NA	Water	Total BTEX	
880-40975-11	TMW-24	Total/NA	Water	Total BTEX	
880-40975-12	Dup-2	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 76122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	300.0	
880-40975-2	TMW-15	Total/NA	Water	300.0	
880-40975-3	TMW-16	Total/NA	Water	300.0	
880-40975-4	TMW-17	Total/NA	Water	300.0	
880-40975-5	TMW-18	Total/NA	Water	300.0	
880-40975-6	TMW-19	Total/NA	Water	300.0	
880-40975-7	TMW-20	Total/NA	Water	300.0	
880-40975-8	TMW-21	Total/NA	Water	300.0	
880-40975-9	TMW-22	Total/NA	Water	300.0	
880-40975-10	TMW-23	Total/NA	Water	300.0	
MB 880-76122/3	Method Blank	Total/NA	Water	300.0	
LCS 880-76122/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-76122/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40975-1 MS	TMW-14	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-40975-1
Project/Site: EDBU #37 SDG: 19-0112-49

HPLC/IC (Continued)

Analysis Batch: 76122 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1 MSD	TMW-14	Total/NA	Water	300.0	

Analysis Batch: 76126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-11	TMW-24	Total/NA	Water	300.0	
880-40975-12	Dup-2	Total/NA	Water	300.0	
MB 880-76126/3	Method Blank	Total/NA	Water	300.0	
LCS 880-76126/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-76126/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-40975-11 MS	TMW-24	Total/NA	Water	300.0	
880-40975-11 MSD	TMW-24	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 76041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-40975-1	TMW-14	Total/NA	Water	SM 2540C	
880-40975-2	TMW-15	Total/NA	Water	SM 2540C	
880-40975-3	TMW-16	Total/NA	Water	SM 2540C	
880-40975-4	TMW-17	Total/NA	Water	SM 2540C	
880-40975-5	TMW-18	Total/NA	Water	SM 2540C	
880-40975-6	TMW-19	Total/NA	Water	SM 2540C	
880-40975-7	TMW-20	Total/NA	Water	SM 2540C	
880-40975-8	TMW-21	Total/NA	Water	SM 2540C	
880-40975-9	TMW-22	Total/NA	Water	SM 2540C	
880-40975-10	TMW-23	Total/NA	Water	SM 2540C	
880-40975-11	TMW-24	Total/NA	Water	SM 2540C	
880-40975-12	Dup-2	Total/NA	Water	SM 2540C	
MB 880-76041/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-76041/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-76041/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-40975-1 DU	TMW-14	Total/NA	Water	SM 2540C	
880-40975-11 DU	TMW-24	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-14
Date Collected: 03/15/24 09:09
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 12:18	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 12:18	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 17:19	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-15
Date Collected: 03/15/24 09:30
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 12:45	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 12:45	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 17:38	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-16
Date Collected: 03/15/24 10:15
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 13:12	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 13:12	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	76122	03/20/24 17:44	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-17
Date Collected: 03/15/24 10:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 13:39	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 13:39	SM	EET MID
Total/NA	Analysis	300.0		50	10 mL	10 mL	76122	03/20/24 18:02	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-18
Date Collected: 03/15/24 09:40
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:06	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76122	03/20/24 18:09	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-19
Date Collected: 03/15/24 10:35
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:32	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:15	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-20
Date Collected: 03/15/24 12:15
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 14:59	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 14:59	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:21	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-21
Date Collected: 03/15/24 12:29
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 15:26	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 15:26	SM	EET MID
Total/NA	Analysis	300.0		5	10 mL	10 mL	76122	03/20/24 18:27	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-22
Date Collected: 03/15/24 13:30
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 15:53	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 15:53	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76122	03/20/24 18:33	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: TMW-23
Date Collected: 03/15/24 12:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 16:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 16:20	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76122	03/20/24 18:39	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Client Sample ID: TMW-24

Date Collected: 03/15/24 11:45
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 18:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 18:08	SM	EET MID
Total/NA	Analysis	300.0		10	10 mL	10 mL	76126	03/20/24 19:28	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Client Sample ID: Dup-2

Date Collected: 03/15/24 00:00
Date Received: 03/18/24 09:00

Lab Sample ID: 880-40975-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	76563	03/26/24 18:33	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			76704	03/26/24 18:33	SM	EET MID
Total/NA	Analysis	300.0		20	10 mL	10 mL	76126	03/20/24 19:47	SMC	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	76041	03/19/24 18:00	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EDBU #37

Job ID: 880-40975-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-40975-1	TMW-14	Water	03/15/24 09:09	03/18/24 09:00
880-40975-2	TMW-15	Water	03/15/24 09:30	03/18/24 09:00
880-40975-3	TMW-16	Water	03/15/24 10:15	03/18/24 09:00
880-40975-4	TMW-17	Water	03/15/24 10:00	03/18/24 09:00
880-40975-5	TMW-18	Water	03/15/24 09:40	03/18/24 09:00
880-40975-6	TMW-19	Water	03/15/24 10:35	03/18/24 09:00
880-40975-7	TMW-20	Water	03/15/24 12:15	03/18/24 09:00
880-40975-8	TMW-21	Water	03/15/24 12:29	03/18/24 09:00
880-40975-9	TMW-22	Water	03/15/24 13:30	03/18/24 09:00
880-40975-10	TMW-23	Water	03/15/24 12:00	03/18/24 09:00
880-40975-11	TMW-24	Water	03/15/24 11:45	03/18/24 09:00
880-40975-12	Dup-2	Water	03/15/24 00:00	03/18/24 09:00

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 8:05:52 PM

40975 No. 3285

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 3/18/2024 PAGE 1 OF 1
PO# _____ LAB WORK ORDER# _____
PROJECT LOCATION OR NAME EBDU #37
LAI PROJECT # 19-0112-49 COLLECTOR RM + DSL

Data Reported to

TRRP report? ☐ Yes ☑ No

TIME ZONE: Time zone/State MST / NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl x3	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE x2	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ D W 200 8 ☐ OTHER LIST ☐	LEAD - TOTAL ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-14		3/15/24	0909	W	5	X			X		X														X		X			Direct Bill to Apache
TMW-15			0930																											
TMW-16			1015																											
TMW-17			1000																											
TMW-18			0940																											
TMW-19			1035																											
TMW-20			1215																											
TMW-21			1229																											
TMW-22			1330																											
TMW-23			1200																											
TMW-24			1145																											
Dup-2			-																											
TOTAL																														

880-40975 Chain of Custody

RELINQUISHED BY (Signature)	DATE/TIME 3/19/24 09:00	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.4/3.3 THERM# IR8 -10
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-40975-1
SDG Number: 19-0112-49

Login Number: 40975
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 1/2/2024 8:18:03 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-37226-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
1/2/2024 8:18:03 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-37226-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 16
QC Sample Results 17
QC Association Summary 21
Lab Chronicle 24
Certification Summary 28
Method Summary 29
Sample Summary 30
Chain of Custody 31
Receipt Checklists 33

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

GC VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project: EBDU #37

Job ID: 880-37226-1 Eurofins Midland

Job Narrative
880-37226-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/21/2023 9:42 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 8.5°C

Receipt Exceptions
The following samples were received and analyzed from an unpreserved bulk soil jar: TMW-17 (880-37226-1), TMW-16 (880-37226-2), TMW-19 (880-37226-3), TMW-24 (880-37226-4), TMW-23 (880-37226-5), Windmill (880-37226-6), TMW-20 (880-37226-7), TMW-21 (880-37226-8), TMW-22 (880-37226-9), TMW-18 (880-37226-10), TMW-15 (880-37226-11), TMW-13 (880-37226-12), TMW-14 (880-37226-13), TMW-6 (880-37226-14), TMW-5 (880-37226-15), TMW-4 (880-37226-16), TMW-7 (880-37226-17), TMW-8 (880-37226-18) and Dup-1 (880-37226-19).

GC VOA
Method 8021B: The surrogate recovery for the blank associated with analytical batch 880-69717 was outside the upper control limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 880-69667 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-17

Date Collected: 12/20/23 08:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-1

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U F2	0.00200		mg/L			12/23/23 21:06	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:06	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*12/23/23 21:06*	*1*
1,4-Difluorobenzene (Surr)	*93*		*70 - 130*		*12/23/23 21:06*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:06	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5850**		25.0		mg/L			12/23/23 00:07	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**10300**		500		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-16

Date Collected: 12/20/23 08:59
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-2

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:32	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*120*		*70 - 130*		*12/23/23 21:32*	*1*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*		*12/23/23 21:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85.5**		2.50		mg/L			12/23/23 00:31	5

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**495**		50.0		mg/L			12/22/23 12:48	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-19

Date Collected: 12/20/23 09:20
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-3
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 21:58	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*12/23/23 21:58*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*12/23/23 21:58*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 21:58	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**927**		10.0		mg/L			12/23/23 00:38	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1860**		100		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-24

Date Collected: 12/20/23 09:35
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-4
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 22:24	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*		*12/23/23 22:24*	*1*
1,4-Difluorobenzene (Surr)	*71*		*70 - 130*		*12/23/23 22:24*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 22:24	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**271**		5.00		mg/L			12/23/23 00:46	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1050**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-23

Date Collected: 12/20/23 09:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-5

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 22:51	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*12/23/23 22:51*	*1*
1,4-Difluorobenzene (Surr)	*90*		*70 - 130*		*12/23/23 22:51*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 22:51	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**895**		10.0		mg/L			12/23/23 00:54	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1980**		100		mg/L			12/22/23 12:48	1

Client Sample ID: Windmill

Date Collected: 12/20/23 09:15
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-6

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 23:17	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*12/23/23 23:17*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*		*12/23/23 23:17*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 23:17	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**409**		5.00		mg/L			12/23/23 01:18	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1010**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-20

Date Collected: 12/20/23 10:14
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-7
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 23:44	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*12/23/23 23:44*	*1*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*		*12/23/23 23:44*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/23/23 23:44	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**287**		5.00		mg/L			12/23/23 01:26	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**927**		50.0		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-21

Date Collected: 12/20/23 10:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-8
Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 00:10	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*12/24/23 00:10*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*12/24/23 00:10*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 00:10	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**262**		5.00		mg/L			12/23/23 01:33	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**885**		50.0		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-22

Date Collected: 12/20/23 10:44
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 00:36	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*12/24/23 00:36*	*1*
1,4-Difluorobenzene (Surr)	*74*		*70 - 130*		*12/24/23 00:36*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 00:36	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**270**		5.00		mg/L			12/23/23 01:41	10

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**939**		50.0		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-18

Date Collected: 12/20/23 11:25
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 01:03	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*		*12/24/23 01:03*	*1*
1,4-Difluorobenzene (Surr)	*103*		*70 - 130*		*12/24/23 01:03*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 01:03	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2050**		25.0		mg/L			12/23/23 01:49	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**6430**		200		mg/L			12/22/23 12:48	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-15

Lab Sample ID: 880-37226-11
Matrix: Water
Date Collected: 12/20/23 11:42
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 02:48	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*81*		*70 - 130*		*12/24/23 02:48*	*1*
1,4-Difluorobenzene (Surr)	*70*		*70 - 130*		*12/24/23 02:48*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 02:48	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2120**	**F1**	25.0		mg/L			12/23/23 01:57	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3870**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-13

Lab Sample ID: 880-37226-12
Matrix: Water
Date Collected: 12/20/23 12:16
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 03:15	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*123*		*70 - 130*		*12/24/23 03:15*	*1*
1,4-Difluorobenzene (Surr)	*68*	*S1-*	*70 - 130*		*12/24/23 03:15*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 03:15	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1730**		25.0		mg/L			12/23/23 02:20	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3680**		200		mg/L			12/22/23 12:48	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-14

Date Collected: 12/20/23 12:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-13

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 03:41	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*70 - 130*		*12/24/23 03:41*	*1*
1,4-Difluorobenzene (Surr)	*118*		*70 - 130*		*12/24/23 03:41*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 03:41	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2500**		25.0		mg/L			12/23/23 02:28	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**5140**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-6

Date Collected: 12/20/23 12:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-14

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 04:08	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*12/24/23 04:08*	*1*
1,4-Difluorobenzene (Surr)	*85*		*70 - 130*		*12/24/23 04:08*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 04:08	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1570**		25.0		mg/L			12/23/23 02:52	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3070**		200		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-5

Lab Sample ID: 880-37226-15
Matrix: Water
Date Collected: 12/20/23 12:43
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 04:34	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*70 - 130*		*12/24/23 04:34*	*1*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*		*12/24/23 04:34*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 04:34	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2320**		25.0		mg/L			12/23/23 03:00	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**4250**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-4

Lab Sample ID: 880-37226-16
Matrix: Water
Date Collected: 12/20/23 13:00
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:01	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*12/24/23 05:01*	*1*
1,4-Difluorobenzene (Surr)	*121*		*70 - 130*		*12/24/23 05:01*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:01	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**598**		10.0		mg/L			12/23/23 03:08	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1750**		100		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-7

Lab Sample ID: 880-37226-17
Matrix: Water
Date Collected: 12/20/23 13:13
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:27	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*112*		*70 - 130*		*12/24/23 05:27*	*1*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*		*12/24/23 05:27*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:27	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**1770**		25.0		mg/L			12/23/23 03:16	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**3720**		200		mg/L			12/22/23 12:48	1

Client Sample ID: TMW-8

Lab Sample ID: 880-37226-18
Matrix: Water
Date Collected: 12/20/23 13:32
Date Received: 12/21/23 09:42

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 05:54	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*12/24/23 05:54*	*1*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*		*12/24/23 05:54*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 05:54	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**709**		10.0		mg/L			12/23/23 03:23	20

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1840**		100		mg/L			12/22/23 12:48	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: Dup-1

Date Collected: 12/20/23 00:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19

Matrix: Water

Method: SW846 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Toluene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/24/23 06:20	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*70 - 130*		*12/24/23 06:20*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*		*12/24/23 06:20*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00400	U	0.00400		mg/L			12/24/23 06:20	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5830**		25.0		mg/L			12/23/23 03:31	50

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**10300**		500		mg/L			12/22/23 12:48	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)											
		BFB1	DFBZ1										
Lab Sample ID	Client Sample ID	(70-130)	(70-130)										
880-37226-1	TMW-17	92	93										
880-37226-1 MS	TMW-17	129	113										
880-37226-1 MSD	TMW-17	108	111										
880-37226-2	TMW-16	120	111										
880-37226-3	TMW-19	95	90										
880-37226-4	TMW-24	129	71										
880-37226-5	TMW-23	108	90										
880-37226-6	Windmill	114	95										
880-37226-7	TMW-20	112	108										
880-37226-8	TMW-21	107	85										
880-37226-9	TMW-22	96	74										
880-37226-10	TMW-18	121	103										
880-37226-11	TMW-15	81	70										
880-37226-12	TMW-13	123	68 S1-										
880-37226-13	TMW-14	113	118										
880-37226-14	TMW-6	103	85										
880-37226-15	TMW-5	119	100										
880-37226-16	TMW-4	114	121										
880-37226-17	TMW-7	112	94										
880-37226-18	TMW-8	101	98										
880-37226-19	Dup-1	116	102										
LCS 880-69717/3	Lab Control Sample	100	95										
LCSD 880-69717/4	Lab Control Sample Dup	121	108										
MB 880-69717/8	Method Blank	60 S1-	88										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-69717/8
Matrix: Water
Analysis Batch: 69717

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Toluene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Ethylbenzene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
m,p-Xylenes	<0.00400	U	0.00400		mg/L			12/23/23 20:40	1
o-Xylene	<0.00200	U	0.00200		mg/L			12/23/23 20:40	1
Xylenes, Total	<0.00400	U	0.00400		mg/L			12/23/23 20:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*60*	*S1-*	*70 - 130*		*12/23/23 20:40*	*1*
1,4-Difluorobenzene (Surr)	*88*		*70 - 130*		*12/23/23 20:40*	*1*

Lab Sample ID: LCS 880-69717/3
Matrix: Water
Analysis Batch: 69717

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.100	0.07869		mg/L		79	70 - 130		
Toluene			0.100	0.07281		mg/L		73	70 - 130		
Ethylbenzene			0.100	0.07420		mg/L		74	70 - 130		
m,p-Xylenes			0.200	0.1528		mg/L		76	70 - 130		
o-Xylene			0.100	0.07922		mg/L		79	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: LCSD 880-69717/4
Matrix: Water
Analysis Batch: 69717

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.100	0.08671		mg/L		87	70 - 130	10	20
Toluene			0.100	0.08545		mg/L		85	70 - 130	16	20
Ethylbenzene			0.100	0.09013		mg/L		90	70 - 130	19	20
m,p-Xylenes			0.200	0.1740		mg/L		87	70 - 130	13	20
o-Xylene			0.100	0.08666		mg/L		87	70 - 130	9	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*121*		*70 - 130*
1,4-Difluorobenzene (Surr)	*108*		*70 - 130*

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene	<0.00200	U F2	0.100	0.1037		mg/L		104	70 - 130		
Toluene	<0.00200	U	0.100	0.08379		mg/L		84	70 - 130		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.100	0.09322		mg/L		93	70 - 130
m,p-Xylenes	<0.00400	U	0.200	0.1651		mg/L		83	70 - 130
o-Xylene	<0.00200	U	0.100	0.1004		mg/L		100	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*129*		*70 - 130*
1,4-Difluorobenzene (Surr)	*113*		*70 - 130*

Lab Sample ID: 880-37226-1 MSD
Matrix: Water
Analysis Batch: 69717

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U F2	0.100	0.07590	F2	mg/L		76	70 - 130	31	25
Toluene	<0.00200	U	0.100	0.08334		mg/L		83	70 - 130	1	25
Ethylbenzene	<0.00200	U	0.100	0.08083		mg/L		81	70 - 130	14	25
m,p-Xylenes	<0.00400	U	0.200	0.1639		mg/L		82	70 - 130	1	25
o-Xylene	<0.00200	U	0.100	0.08708		mg/L		87	70 - 130	14	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*
1,4-Difluorobenzene (Surr)	*111*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-69667/3
Matrix: Water
Analysis Batch: 69667

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			12/22/23 23:43	1

Lab Sample ID: LCS 880-69667/4
Matrix: Water
Analysis Batch: 69667

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride			25.0	23.63		mg/L		95	90 - 110

Lab Sample ID: LCSD 880-69667/5
Matrix: Water
Analysis Batch: 69667

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			25.0	23.60		mg/L		94	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-37226-1 MS
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	5850		1250	6811	4	mg/L		77	90 - 110

Lab Sample ID: 880-37226-1 MSD
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	5850		1250	6795	4	mg/L		76	90 - 110	0	20

Lab Sample ID: 880-37226-11 MS
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2120	F1	1250	3322		mg/L		97	90 - 110

Lab Sample ID: 880-37226-11 MSD
Matrix: Water
Analysis Batch: 69667

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2120	F1	1250	3195	F1	mg/L		86	90 - 110	4	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-69658/1
Matrix: Water
Analysis Batch: 69658

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0		mg/L			12/22/23 12:48	1

Lab Sample ID: LCS 880-69658/2
Matrix: Water
Analysis Batch: 69658

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids			1000	970.0		mg/L		97	80 - 120

Lab Sample ID: LCSD 880-69658/3
Matrix: Water
Analysis Batch: 69658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	985.0		mg/L		99	80 - 120	2	10

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 880-37226-1 DU
Matrix: Water
Analysis Batch: 69658

Client Sample ID: TMW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	10300			10340		mg/L				0.6	10

Lab Sample ID: 880-37226-11 DU
Matrix: Water
Analysis Batch: 69658

Client Sample ID: TMW-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3870			3948		mg/L				2	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

GC VOA

Analysis Batch: 69717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	8021B	
880-37226-2	TMW-16	Total/NA	Water	8021B	
880-37226-3	TMW-19	Total/NA	Water	8021B	
880-37226-4	TMW-24	Total/NA	Water	8021B	
880-37226-5	TMW-23	Total/NA	Water	8021B	
880-37226-6	Windmill	Total/NA	Water	8021B	
880-37226-7	TMW-20	Total/NA	Water	8021B	
880-37226-8	TMW-21	Total/NA	Water	8021B	
880-37226-9	TMW-22	Total/NA	Water	8021B	
880-37226-10	TMW-18	Total/NA	Water	8021B	
880-37226-11	TMW-15	Total/NA	Water	8021B	
880-37226-12	TMW-13	Total/NA	Water	8021B	
880-37226-13	TMW-14	Total/NA	Water	8021B	
880-37226-14	TMW-6	Total/NA	Water	8021B	
880-37226-15	TMW-5	Total/NA	Water	8021B	
880-37226-16	TMW-4	Total/NA	Water	8021B	
880-37226-17	TMW-7	Total/NA	Water	8021B	
880-37226-18	TMW-8	Total/NA	Water	8021B	
880-37226-19	Dup-1	Total/NA	Water	8021B	
MB 880-69717/8	Method Blank	Total/NA	Water	8021B	
LCS 880-69717/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-69717/4	Lab Control Sample Dup	Total/NA	Water	8021B	
880-37226-1 MS	TMW-17	Total/NA	Water	8021B	
880-37226-1 MSD	TMW-17	Total/NA	Water	8021B	

Analysis Batch: 69798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	Total BTEX	
880-37226-2	TMW-16	Total/NA	Water	Total BTEX	
880-37226-3	TMW-19	Total/NA	Water	Total BTEX	
880-37226-4	TMW-24	Total/NA	Water	Total BTEX	
880-37226-5	TMW-23	Total/NA	Water	Total BTEX	
880-37226-6	Windmill	Total/NA	Water	Total BTEX	
880-37226-7	TMW-20	Total/NA	Water	Total BTEX	
880-37226-8	TMW-21	Total/NA	Water	Total BTEX	
880-37226-9	TMW-22	Total/NA	Water	Total BTEX	
880-37226-10	TMW-18	Total/NA	Water	Total BTEX	
880-37226-11	TMW-15	Total/NA	Water	Total BTEX	
880-37226-12	TMW-13	Total/NA	Water	Total BTEX	
880-37226-13	TMW-14	Total/NA	Water	Total BTEX	
880-37226-14	TMW-6	Total/NA	Water	Total BTEX	
880-37226-15	TMW-5	Total/NA	Water	Total BTEX	
880-37226-16	TMW-4	Total/NA	Water	Total BTEX	
880-37226-17	TMW-7	Total/NA	Water	Total BTEX	
880-37226-18	TMW-8	Total/NA	Water	Total BTEX	
880-37226-19	Dup-1	Total/NA	Water	Total BTEX	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

HPLC/IC

Analysis Batch: 69667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	300.0	
880-37226-2	TMW-16	Total/NA	Water	300.0	
880-37226-3	TMW-19	Total/NA	Water	300.0	
880-37226-4	TMW-24	Total/NA	Water	300.0	
880-37226-5	TMW-23	Total/NA	Water	300.0	
880-37226-6	Windmill	Total/NA	Water	300.0	
880-37226-7	TMW-20	Total/NA	Water	300.0	
880-37226-8	TMW-21	Total/NA	Water	300.0	
880-37226-9	TMW-22	Total/NA	Water	300.0	
880-37226-10	TMW-18	Total/NA	Water	300.0	
880-37226-11	TMW-15	Total/NA	Water	300.0	
880-37226-12	TMW-13	Total/NA	Water	300.0	
880-37226-13	TMW-14	Total/NA	Water	300.0	
880-37226-14	TMW-6	Total/NA	Water	300.0	
880-37226-15	TMW-5	Total/NA	Water	300.0	
880-37226-16	TMW-4	Total/NA	Water	300.0	
880-37226-17	TMW-7	Total/NA	Water	300.0	
880-37226-18	TMW-8	Total/NA	Water	300.0	
880-37226-19	Dup-1	Total/NA	Water	300.0	
MB 880-69667/3	Method Blank	Total/NA	Water	300.0	
LCS 880-69667/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-69667/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-37226-1 MS	TMW-17	Total/NA	Water	300.0	
880-37226-1 MSD	TMW-17	Total/NA	Water	300.0	
880-37226-11 MS	TMW-15	Total/NA	Water	300.0	
880-37226-11 MSD	TMW-15	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 69658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37226-1	TMW-17	Total/NA	Water	SM 2540C	
880-37226-2	TMW-16	Total/NA	Water	SM 2540C	
880-37226-3	TMW-19	Total/NA	Water	SM 2540C	
880-37226-4	TMW-24	Total/NA	Water	SM 2540C	
880-37226-5	TMW-23	Total/NA	Water	SM 2540C	
880-37226-6	Windmill	Total/NA	Water	SM 2540C	
880-37226-7	TMW-20	Total/NA	Water	SM 2540C	
880-37226-8	TMW-21	Total/NA	Water	SM 2540C	
880-37226-9	TMW-22	Total/NA	Water	SM 2540C	
880-37226-10	TMW-18	Total/NA	Water	SM 2540C	
880-37226-11	TMW-15	Total/NA	Water	SM 2540C	
880-37226-12	TMW-13	Total/NA	Water	SM 2540C	
880-37226-13	TMW-14	Total/NA	Water	SM 2540C	
880-37226-14	TMW-6	Total/NA	Water	SM 2540C	
880-37226-15	TMW-5	Total/NA	Water	SM 2540C	
880-37226-16	TMW-4	Total/NA	Water	SM 2540C	
880-37226-17	TMW-7	Total/NA	Water	SM 2540C	
880-37226-18	TMW-8	Total/NA	Water	SM 2540C	
880-37226-19	Dup-1	Total/NA	Water	SM 2540C	
MB 880-69658/1	Method Blank	Total/NA	Water	SM 2540C	

QC Association Summary

Client: Larson & Associates, Inc. Job ID: 880-37226-1
Project/Site: EBDU #37 SDG: 19-0112-49

General Chemistry (Continued)

Analysis Batch: 69658 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 880-69658/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-69658/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-37226-1 DU	TMW-17	Total/NA	Water	SM 2540C	
880-37226-11 DU	TMW-15	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-17
Date Collected: 12/20/23 08:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:06	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:06	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 00:07	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-16
Date Collected: 12/20/23 08:59
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:32	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:32	AJ	EET MID
Total/NA	Analysis	300.0		5	50 mL	50 mL	69667	12/23/23 00:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-19
Date Collected: 12/20/23 09:20
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 21:58	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 21:58	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:38	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-24
Date Collected: 12/20/23 09:35
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:24	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:24	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 00:46	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-23
Date Collected: 12/20/23 09:45
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 22:51	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 22:51	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 00:54	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: Windmill
Date Collected: 12/20/23 09:15
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:17	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:17	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:18	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-20
Date Collected: 12/20/23 10:14
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/23/23 23:44	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/23/23 23:44	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:26	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-21
Date Collected: 12/20/23 10:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:10	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:10	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:33	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-22
Date Collected: 12/20/23 10:44
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 00:36	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 00:36	AJ	EET MID
Total/NA	Analysis	300.0		10	50 mL	50 mL	69667	12/23/23 01:41	CH	EET MID
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-18
Date Collected: 12/20/23 11:25
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 01:03	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 01:03	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:49	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-15
Date Collected: 12/20/23 11:42
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 02:48	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 02:48	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 01:57	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-13
Date Collected: 12/20/23 12:16
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-12
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:15	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:15	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:20	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-14
Date Collected: 12/20/23 12:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-13
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 03:41	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 03:41	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:28	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-6
Date Collected: 12/20/23 12:30
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:08	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:08	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 02:52	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-5
Date Collected: 12/20/23 12:43
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 04:34	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 04:34	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:00	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Eurofins Midland

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Client Sample ID: TMW-4

Date Collected: 12/20/23 13:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:01	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:01	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:08	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-7

Date Collected: 12/20/23 13:13
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:27	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:27	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:16	CH	EET MID
Total/NA	Analysis	SM 2540C		1	25 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: TMW-8

Date Collected: 12/20/23 13:32
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 05:54	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 05:54	AJ	EET MID
Total/NA	Analysis	300.0		20	50 mL	50 mL	69667	12/23/23 03:23	CH	EET MID
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Client Sample ID: Dup-1

Date Collected: 12/20/23 00:00
Date Received: 12/21/23 09:42

Lab Sample ID: 880-37226-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	5 mL	5 mL	69717	12/24/23 06:20	MNR	EET MID
Total/NA	Analysis	Total BTEX		1			69798	12/24/23 06:20	AJ	EET MID
Total/NA	Analysis	300.0		50	50 mL	50 mL	69667	12/23/23 03:31	CH	EET MID
Total/NA	Analysis	SM 2540C		1	10 mL	200 mL	69658	12/22/23 12:48	SMC	EET MID

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	EET MID
Total BTEX	Total BTEX Calculation	TAL SOP	EET MID
300.0	Anions, Ion Chromatography	EPA	EET MID
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
5030B	Purge and Trap	SW846	EET MID

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37226-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37226-1	TMW-17	Water	12/20/23 08:45	12/21/23 09:42
880-37226-2	TMW-16	Water	12/20/23 08:59	12/21/23 09:42
880-37226-3	TMW-19	Water	12/20/23 09:20	12/21/23 09:42
880-37226-4	TMW-24	Water	12/20/23 09:35	12/21/23 09:42
880-37226-5	TMW-23	Water	12/20/23 09:45	12/21/23 09:42
880-37226-6	Windmill	Water	12/20/23 09:15	12/21/23 09:42
880-37226-7	TMW-20	Water	12/20/23 10:14	12/21/23 09:42
880-37226-8	TMW-21	Water	12/20/23 10:30	12/21/23 09:42
880-37226-9	TMW-22	Water	12/20/23 10:44	12/21/23 09:42
880-37226-10	TMW-18	Water	12/20/23 11:25	12/21/23 09:42
880-37226-11	TMW-15	Water	12/20/23 11:42	12/21/23 09:42
880-37226-12	TMW-13	Water	12/20/23 12:16	12/21/23 09:42
880-37226-13	TMW-14	Water	12/20/23 12:00	12/21/23 09:42
880-37226-14	TMW-6	Water	12/20/23 12:30	12/21/23 09:42
880-37226-15	TMW-5	Water	12/20/23 12:43	12/21/23 09:42
880-37226-16	TMW-4	Water	12/20/23 13:00	12/21/23 09:42
880-37226-17	TMW-7	Water	12/20/23 13:13	12/21/23 09:42
880-37226-18	TMW-8	Water	12/20/23 13:32	12/21/23 09:42
880-37226-19	Dup-1	Water	12/20/23 00:00	12/21/23 09:42

Page 427 of 733

37226 No. 2884

CHAIN-OF-CUSTODY

1/2/2024

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/20/2023 PAGE 1 OF 2

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME. EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR. RW/DSG

Data Reported to Mark Larson/Robert Nelson

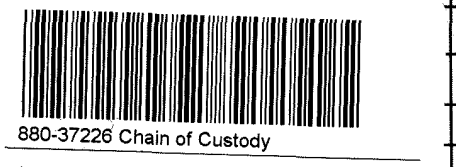
TRRP report? ☐ Yes ☑ No

TIME ZONE Time zone/State: MST/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
TMW-17		12/20/23	0845	W	5				X	X		Direct Bill to Apache
TMW-16			0859									
TMW-19			0920									
TMW-24			0935									
TMW-23			0945									
windmill			0915									
TMW-20			1014									
TMW-21			1030									
TMW-22			1044									
TMW-18			1125									
TMW-15			1142									
TMW-13			1216									
TMW-14			1200									
TMW-6			1230									
TMW-5			1243									
TOTAL												

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



RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	12/21 942	[signature]
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 8.3/8.5 THERM#: IR8
CUSTODY SEALS - ☐ BROKEN ☑ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Page 31 of 33

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Page 428 of 733

37226 No. 2885

CHAIN-OF-CUSTODY

1/2/2024

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to: Mark Larson / Robert Nelson

DATE 12/20/23 PAGE 2 OF 2

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-6112-49 COLLECTOR RN MS

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State: MST/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-4		12/20/23	1300	W	5				X		X												X				X		Direct Bill to
TMW-7		"	1313	"	"				"		"												"				"		Apache
TMW-8		"	1332	"	"				"		"												"				"		
Dup-1		"	—	"	"				"		"												"				"		
TOTAL																													

Loc: 880
37226

RELINQUISHED BY (Signature) Pamela Battle DATE/TIME 12/21 942 RECEIVED BY (Signature)

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

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

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 8.3/8.5 THERM# _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Page 32 of 33

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37226-1
SDG Number: 19-0112-49

Login Number: 37226
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Refer to Job Narrative for details.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 1/2/2024 12:48:10 PM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-37238-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



Generated
1/2/2024 12:48:10 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-37238-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Surrogate Summary 11
QC Sample Results 12
QC Association Summary 16
Lab Chronicle 18
Certification Summary 20
Method Summary 21
Sample Summary 22
Chain of Custody 23
Receipt Checklists 25

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*3	ISTD response or retention time outside acceptable limits.
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-37238-1
Project: EBDU #37

Job ID: 880-37238-1 Eurofins Midland

Job Narrative
880-37238-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/21/2023 1:49 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.5°C

GC/MS VOA
Method 8260C: Internal standard (ISTD) response for 1,4-Dichlorobenzene-d4 for the following samples in analytical batch 860-136702 was outside acceptance criteria: TMW-10 (880-37238-1), TMW-1 (880-37238-2) and TMW-9 (880-37238-3). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-10

Date Collected: 12/21/23 08:35
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-1

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:32	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*63 - 144*		*12/27/23 12:32*	*1*
4-Bromofluorobenzene (Surr)	*123*	**3*	*74 - 124*		*12/27/23 12:32*	*1*
Dibromofluoromethane (Surr)	*102*		*75 - 131*		*12/27/23 12:32*	*1*
Toluene-d8 (Surr)	*120*		*80 - 120*		*12/27/23 12:32*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 12:32	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**114**		0.500		mg/L			12/23/23 07:45	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**666**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-1

Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:53	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*		*12/27/23 12:53*	*1*
4-Bromofluorobenzene (Surr)	*121*	**3*	*74 - 124*		*12/27/23 12:53*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/27/23 12:53*	*1*
Toluene-d8 (Surr)	*119*		*80 - 120*		*12/27/23 12:53*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 12:53	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**156**		0.500		mg/L			12/23/23 07:58	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-1
Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	662		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-9
Date Collected: 12/21/23 09:26
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-3
Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 13:13	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 144*		*12/27/23 13:13*	*1*
4-Bromofluorobenzene (Surr)	*125*	*S1+ *3*	*74 - 124*		*12/27/23 13:13*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 131*		*12/27/23 13:13*	*1*
Toluene-d8 (Surr)	*117*		*80 - 120*		*12/27/23 13:13*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/27/23 13:13	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.3		0.500		mg/L			12/23/23 08:10	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	404		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-3
Date Collected: 12/21/23 09:36
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-4
Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 15:48	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 144*		*12/28/23 15:48*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 15:48*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 131*		*12/28/23 15:48*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*12/28/23 15:48*	*1*

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-3
Date Collected: 12/21/23 09:36
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-4
Matrix: Water

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 15:48	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**242**		0.500		mg/L			12/23/23 08:23	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1020**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-2
Date Collected: 12/21/23 09:56
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-5
Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:09	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*63 - 144*		*12/28/23 16:09*	*1*
4-Bromofluorobenzene (Surr)	*88*		*74 - 124*		*12/28/23 16:09*	*1*
Dibromofluoromethane (Surr)	*100*		*75 - 131*		*12/28/23 16:09*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:09*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:09	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**264**		0.500		mg/L			12/23/23 08:35	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1100**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-11
Date Collected: 12/21/23 10:11
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6
Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:30	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-11

Date Collected: 12/21/23 10:11
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*63 - 144*		*12/28/23 16:30*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 16:30*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/28/23 16:30*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:30*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:30	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**350**		0.500		mg/L			12/23/23 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1190**		10.0		mg/L			12/26/23 17:40	1

Client Sample ID: TMW-12

Date Collected: 12/21/23 10:29
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-7

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 16:50	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*63 - 144*		*12/28/23 16:50*	*1*
4-Bromofluorobenzene (Surr)	*87*		*74 - 124*		*12/28/23 16:50*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*12/28/23 16:50*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 16:50*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 16:50	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**463**		0.500		mg/L			12/23/23 09:13	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1520**		20.0		mg/L			12/26/23 17:40	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: Dup-2

Date Collected: 12/21/23 00:00
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-8

Matrix: Water

Method: SW846 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 17:11	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*63 - 144*		*12/28/23 17:11*	*1*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*		*12/28/23 17:11*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*12/28/23 17:11*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/28/23 17:11*	*1*

Method: TAL SOP Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.0100	U	0.0100		mg/L			12/28/23 17:11	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**265**		0.500		mg/L			12/23/23 09:01	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	**1010**		10.0		mg/L			12/26/23 17:40	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(63-144)	(74-124)	(75-131)	(80-120)
880-37238-1	TMW-10	92	123 *3	102	120
880-37238-1 MS	TMW-10	114	90	99	99
880-37238-2	TMW-1	96	121 *3	101	119
880-37238-3	TMW-9	98	125 S1+ *3	101	117
880-37238-4	TMW-3	106	89	105	99
880-37238-5	TMW-2	103	88	100	100
880-37238-6	TMW-11	107	89	99	100
880-37238-7	TMW-12	98	87	98	100
880-37238-8	Dup-2	99	89	99	101
LCS 860-136702/3	Lab Control Sample	111	86	95	96
LCS 860-138343/3	Lab Control Sample	91	96	99	94
LCSD 860-136702/4	Lab Control Sample Dup	110	89	98	97
LCSD 860-138343/4	Lab Control Sample Dup	96	94	104	96
MB 860-136702/8	Method Blank	89	121 *3	98	117
MB 860-138343/8	Method Blank	95	88	96	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-136702/8
Matrix: Water
Analysis Batch: 136702

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Toluene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/27/23 12:12	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/27/23 12:12	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/27/23 12:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*63 - 144*		*12/27/23 12:12*	*1*
4-Bromofluorobenzene (Surr)	*121*	**3*	*74 - 124*		*12/27/23 12:12*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*12/27/23 12:12*	*1*
Toluene-d8 (Surr)	*117*		*80 - 120*		*12/27/23 12:12*	*1*

Lab Sample ID: LCS 860-136702/3
Matrix: Water
Analysis Batch: 136702

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			0.0500	0.04541		mg/L		91	75 - 125		
Toluene			0.0500	0.04036		mg/L		81	70 - 130		
Ethylbenzene			0.0500	0.04206		mg/L		84	75 - 125		
m,p-Xylenes			0.0500	0.04026		mg/L		81	75 - 125		
o-Xylene			0.0500	0.04314		mg/L		86	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*63 - 144*
4-Bromofluorobenzene (Surr)	*86*		*74 - 124*
Dibromofluoromethane (Surr)	*95*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 120*

Lab Sample ID: LCSD 860-136702/4
Matrix: Water
Analysis Batch: 136702

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0500	0.04397		mg/L		88	75 - 125	3	25
Toluene			0.0500	0.03959		mg/L		79	70 - 130	2	25
Ethylbenzene			0.0500	0.04133		mg/L		83	75 - 125	2	25
m,p-Xylenes			0.0500	0.03911		mg/L		78	75 - 125	3	25
o-Xylene			0.0500	0.04234		mg/L		85	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 144*
4-Bromofluorobenzene (Surr)	*89*		*74 - 124*
Dibromofluoromethane (Surr)	*98*		*75 - 131*
Toluene-d8 (Surr)	*97*		*80 - 120*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 880-37238-1 MS
Matrix: Water
Analysis Batch: 136702

Client Sample ID: TMW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00100	U	0.0500	0.05456		mg/L		109	66 - 142
Toluene	<0.00100	U	0.0500	0.05081		mg/L		102	59 - 139
Ethylbenzene	<0.00100	U	0.0500	0.05310		mg/L		106	75 - 125
m,p-Xylenes	<0.0100	U	0.0500	0.05001		mg/L		100	75 - 125
o-Xylene	<0.00100	U	0.0500	0.05414		mg/L		108	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*63 - 144*
4-Bromofluorobenzene (Surr)	*90*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 860-138343/8
Matrix: Water
Analysis Batch: 138343

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Toluene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			12/28/23 12:17	1
o-Xylene	<0.00100	U	0.00100		mg/L			12/28/23 12:17	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			12/28/23 12:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*63 - 144*		*12/28/23 12:17*	*1*
4-Bromofluorobenzene (Surr)	*88*		*74 - 124*		*12/28/23 12:17*	*1*
Dibromofluoromethane (Surr)	*96*		*75 - 131*		*12/28/23 12:17*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/28/23 12:17*	*1*

Lab Sample ID: LCS 860-138343/3
Matrix: Water
Analysis Batch: 138343

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene			0.0500	0.06051		mg/L		121	75 - 125
Toluene			0.0500	0.05702		mg/L		114	70 - 130
Ethylbenzene			0.0500	0.05760		mg/L		115	75 - 125
m,p-Xylenes			0.0500	0.05797		mg/L		116	75 - 125
o-Xylene			0.0500	0.05664		mg/L		113	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*63 - 144*
4-Bromofluorobenzene (Surr)	*96*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*94*		*80 - 120*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-138343/4
Matrix: Water
Analysis Batch: 138343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			0.0500	0.04994		mg/L		100	75 - 125	19	25
Toluene			0.0500	0.04755		mg/L		95	70 - 130	18	25
Ethylbenzene			0.0500	0.04807		mg/L		96	75 - 125	18	25
m,p-Xylenes			0.0500	0.04812		mg/L		96	75 - 125	19	25
o-Xylene			0.0500	0.04772		mg/L		95	75 - 125	17	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*63 - 144*
4-Bromofluorobenzene (Surr)	*94*		*74 - 124*
Dibromofluoromethane (Surr)	*104*		*75 - 131*
Toluene-d8 (Surr)	*96*		*80 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 860-136466/3
Matrix: Water
Analysis Batch: 136466

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

Analyte		MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride		<0.500	U	0.500		mg/L			12/22/23 17:14	1

Lab Sample ID: MB 860-136466/47
Matrix: Water
Analysis Batch: 136466

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

Analyte		MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride		<0.500	U	0.500		mg/L			12/23/23 02:30	1

Lab Sample ID: LCS 860-136466/48
Matrix: Water
Analysis Batch: 136466

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			5.00	4.826		mg/L		97	90 - 110		

Lab Sample ID: LCSD 860-136466/49
Matrix: Water
Analysis Batch: 136466

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			5.00	4.755		mg/L		95	90 - 110	1	20

Lab Sample ID: LLCS 860-136466/7
Matrix: Water
Analysis Batch: 136466

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

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			0.500	0.5214		mg/L		104	50 - 150		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 860-136563/1
Matrix: Water
Analysis Batch: 136563

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5.00	U	5.00		mg/L			12/26/23 17:40	1

Lab Sample ID: LCS 860-136563/2
Matrix: Water
Analysis Batch: 136563

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1107		mg/L		111	80 - 120		

Lab Sample ID: LCSD 860-136563/3
Matrix: Water
Analysis Batch: 136563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1108		mg/L		111	80 - 120	0	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

GC/MS VOA

Analysis Batch: 136702

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	8260C	
880-37238-2	TMW-1	Total/NA	Water	8260C	
880-37238-3	TMW-9	Total/NA	Water	8260C	
MB 860-136702/8	Method Blank	Total/NA	Water	8260C	
LCS 860-136702/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-136702/4	Lab Control Sample Dup	Total/NA	Water	8260C	
880-37238-1 MS	TMW-10	Total/NA	Water	8260C	

Analysis Batch: 138343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-4	TMW-3	Total/NA	Water	8260C	
880-37238-5	TMW-2	Total/NA	Water	8260C	
880-37238-6	TMW-11	Total/NA	Water	8260C	
880-37238-7	TMW-12	Total/NA	Water	8260C	
880-37238-8	Dup-2	Total/NA	Water	8260C	
MB 860-138343/8	Method Blank	Total/NA	Water	8260C	
LCS 860-138343/3	Lab Control Sample	Total/NA	Water	8260C	
LCSD 860-138343/4	Lab Control Sample Dup	Total/NA	Water	8260C	

Analysis Batch: 138894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	Total BTEX	
880-37238-2	TMW-1	Total/NA	Water	Total BTEX	
880-37238-3	TMW-9	Total/NA	Water	Total BTEX	
880-37238-4	TMW-3	Total/NA	Water	Total BTEX	
880-37238-5	TMW-2	Total/NA	Water	Total BTEX	
880-37238-6	TMW-11	Total/NA	Water	Total BTEX	
880-37238-7	TMW-12	Total/NA	Water	Total BTEX	
880-37238-8	Dup-2	Total/NA	Water	Total BTEX	

HPLC/IC

Analysis Batch: 136466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	300.0	
880-37238-2	TMW-1	Total/NA	Water	300.0	
880-37238-3	TMW-9	Total/NA	Water	300.0	
880-37238-4	TMW-3	Total/NA	Water	300.0	
880-37238-5	TMW-2	Total/NA	Water	300.0	
880-37238-6	TMW-11	Total/NA	Water	300.0	
880-37238-7	TMW-12	Total/NA	Water	300.0	
880-37238-8	Dup-2	Total/NA	Water	300.0	
MB 860-136466/3	Method Blank	Total/NA	Water	300.0	
MB 860-136466/47	Method Blank	Total/NA	Water	300.0	
LCS 860-136466/48	Lab Control Sample	Total/NA	Water	300.0	
LCSD 860-136466/49	Lab Control Sample Dup	Total/NA	Water	300.0	
LLCS 860-136466/7	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

General Chemistry

Analysis Batch: 136563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-37238-1	TMW-10	Total/NA	Water	SM 2540C	
880-37238-2	TMW-1	Total/NA	Water	SM 2540C	
880-37238-3	TMW-9	Total/NA	Water	SM 2540C	
880-37238-4	TMW-3	Total/NA	Water	SM 2540C	
880-37238-5	TMW-2	Total/NA	Water	SM 2540C	
880-37238-6	TMW-11	Total/NA	Water	SM 2540C	
880-37238-7	TMW-12	Total/NA	Water	SM 2540C	
880-37238-8	Dup-2	Total/NA	Water	SM 2540C	
MB 860-136563/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 860-136563/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 860-136563/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-10
Date Collected: 12/21/23 08:35
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:32	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:32	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:45	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-1
Date Collected: 12/21/23 08:58
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 12:53	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 12:53	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 07:58	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-9
Date Collected: 12/21/23 09:26
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	136702	12/27/23 13:13	NA	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/27/23 13:13	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:10	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-3
Date Collected: 12/21/23 09:36
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 15:48	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:23	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-2
Date Collected: 12/21/23 09:56
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:09	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:35	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Client Sample ID: TMW-11

Date Collected: 12/21/23 10:11
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:30	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 08:48	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: TMW-12

Date Collected: 12/21/23 10:29
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 16:50	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:13	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	50 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Client Sample ID: Dup-2

Date Collected: 12/21/23 00:00
Date Received: 12/21/23 13:49

Lab Sample ID: 880-37238-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	138343	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	Total BTEX		1			138894	12/28/23 17:11	AN	EET HOU
Total/NA	Analysis	300.0		1			136466	12/23/23 09:01	WP	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	136563	12/26/23 17:40	SA	EET HOU

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-23-53	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Water	Total BTEX

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	EET HOU
Total BTEX	Total BTEX Calculation	TAL SOP	EET HOU
300.0	Anions, Ion Chromatography	EPA	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET HOU
5030C	Purge and Trap	SW846	EET HOU

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-37238-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-37238-1	TMW-10	Water	12/21/23 08:35	12/21/23 13:49
880-37238-2	TMW-1	Water	12/21/23 08:58	12/21/23 13:49
880-37238-3	TMW-9	Water	12/21/23 09:26	12/21/23 13:49
880-37238-4	TMW-3	Water	12/21/23 09:36	12/21/23 13:49
880-37238-5	TMW-2	Water	12/21/23 09:56	12/21/23 13:49
880-37238-6	TMW-11	Water	12/21/23 10:11	12/21/23 13:49
880-37238-7	TMW-12	Water	12/21/23 10:29	12/21/23 13:49
880-37238-8	Dup-2	Water	12/21/23 00:00	12/21/23 13:49

Page 452 of 733

37238

No. 2886

CHAIN-OF-CUSTODY

1/2/2024

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE 12/21/2023 PAGE 1 OF 1

PO# _____ LAB WORK ORDER# _____

PROJECT LOCATION OR NAME EABU #37

LAI PROJECT # 19-0112-49 COLLECTOR AN/ASG

Data Reported to

TRRP report? ☐ Yes ☒ No

TIME ZONE Time zone/State: MNT/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D W 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-10		12/21/23	0835	W	5				X		X												X			X			Direct Bill
TMW-1			0858	W	5				X		X												X			X			to APACHE
TMW-9			0924	W	5				X		X												X			X			
TMW-3			0936	W	5				X		X												X			X			
TMW-2			0956	W	5				X		X												X			X			
TMW-11			1011	W	5				X		X												X			X			
TMW-12			1029	W	5				X		X												X			X			
DUP-2		↓	—	W	5				X		X												X			X			
											BTEX																		

880-37238 Chain of Custody

TOTAL 8

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
	12/21/23 1349	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY XENCO

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

LABORATORY USE ONLY:
RECEIVING TEMP 5.3/5.5 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Page 23 of 26

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM

Eurofins Midland
1211 W Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-8753.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 880-37238-1
Address: 4145 Greenbriar Dr	Due Date Requested: 12/25/2023			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: EBDU #37	Project #: 88000515			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C/5030C BTEX	Total_BTEX	2540C_Calcd	300_ORGFM_28D/ Chloride	Special Instructions/Note:
TMW-10 (880-37238-1)	12/21/23	08.35 Mountain		Water			X	X	X	X	
TMW-1 (880-37238-2)	12/21/23	08:58 Mountain		Water			X	X	X	X	
TMW-9 (880-37238-3)	12/21/23	09:26 Mountain		Water			X	X	X	X	
TMW-3 (880-37238-4)	12/21/23	09:36 Mountain		Water			X	X	X	X	
TMW-2 (880-37238-5)	12/21/23	09:56 Mountain		Water			X	X	X	X	
TMW-11 (880-37238-6)	12/21/23	10:11 Mountain		Water			X	X	X	X	
TMW-12 (880-37238-7)	12/21/23	10:29 Mountain		Water			X	X	X	X	
Dup-2 (880-37238-8)	12/21/23	Mountain		Water			X	X	X	X	

Temp 3.0 IR ID HOU-369
C/F -0.0
Corrected Temp. 3.0

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
FedEx			Fedex		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 12/22 12:21 pm	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1
SDG Number: 19-0112-49

Login Number: 37238
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-37238-1
SDG Number: 19-0112-49

Login Number: 37238
List Number: 2
Creator: Garcia, Yailet

List Source: Eurofins Houston
List Creation: 12/22/23 03:42 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Appendix F

Windmill Laboratory Report

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 4/30/2024 4:30:51 PM

JOB DESCRIPTION

Apache/EBDU 37
19-0112-49

JOB NUMBER

880-41793-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
4/30/2024 4:30:51 PM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Laboratory Job ID: 880-41793-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 6
Client Sample Results 7
Surrogate Summary 10
QC Sample Results 11
QC Association Summary 22
Lab Chronicle 25
Certification Summary 26
Method Summary 27
Sample Summary 28
Chain of Custody 29
Receipt Checklists 35

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-41793-1
Project/Site: Apache/EBDU 37 SDG: 19-0112-49

Qualifiers

GC/MS VOA

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

GC/MS Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

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

HPLC/IC

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

Metals

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

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-41793-1
Project: Apache/EBDU 37

Job ID: 880-41793-1 Eurofins Midland

Job Narrative
880-41793-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 4/3/2024 2:48 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C.

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA
Method 8270E_QQQ: Three surrogates are used for this analysis. The laboratory's SOP allows one base of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: Windwill (880-41793-1). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

PCBs
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300_ORGFM_28D: The followings samples were analyzed at a dilution for Chloride due to the Matrix Conductivity Threshold (MCT) of the instrument: Windwill (880-41793-1), (860-71138-B-1), (860-71138-B-1 MS) and (860-71138-B-1 MSD). The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 420.4_NP: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 860-154711 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method SM4500_H+: This analysis is normally performed in the field and has a method-defined holding time of 15 minutes. The following sample has been qualified with the "HF" flag to indicate analysis was performed in the laboratory outside the 15 minute timeframe: Windwill (880-41793-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Client Sample ID: Windwill
Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
1,1,2,2-Tetrachloroethane	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,1,2-Trichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,1-Dichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,1-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,2,4-Trichlorobenzene	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
1,2-Dichlorobenzene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,2-Dichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
1,2-Dichloropropane	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
1,4-Dichlorobenzene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Benzene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Carbon tetrachloride	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
Chloroform	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
cis-1,2-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			04/08/24 12:45	1
Methylene Chloride	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
o-Xylene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Styrene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Tetrachloroethene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Toluene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
trans-1,2-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 12:45	1
Trichloroethene	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
Vinyl chloride	<0.00200	U	0.00200		mg/L			04/08/24 12:45	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			04/08/24 12:45	1
1,2-Dibromoethane	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1
MTBE	<0.00500	U	0.00500		mg/L			04/08/24 12:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*63 - 144*		*04/08/24 12:45*	*1*
4-Bromofluorobenzene (Surr)	*103*		*74 - 124*		*04/08/24 12:45*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*04/08/24 12:45*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/08/24 12:45*	*1*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
2-Methylnaphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Acenaphthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Acenaphthylene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Anthracene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Benzo[a]anthracene	<0.0286	U	0.0286		ug/L		04/04/24 16:00	04/12/24 16:15	1
Benzo[a]pyrene	<0.0571	U	0.0571		ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[b]fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[g,h,i]perylene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/16/24 00:21	1
Benzo[k]fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/16/24 00:21	1
Chrysene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Dibenz(a,h)anthracene	<0.114	U	0.114		ug/L		04/04/24 16:00	04/16/24 00:21	1
Fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Fluorene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Client Sample ID: Windwill
Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1
Matrix: Water

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Indeno[1,2,3-cd]pyrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/16/24 00:21	1
Naphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Phenanthrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Pyrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/12/24 16:15	1
Atrazine	<0.500	U	0.500		ug/L		04/04/24 16:00	04/12/24 16:15	1
Pentachlorophenol	<1.14	U	1.14		ug/L		04/04/24 16:00	04/12/24 16:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*88*		*43 - 130*	*04/04/24 16:00*	*04/12/24 16:15*	*1*
2-Fluorobiphenyl (Surr)	*86*		*43 - 130*	*04/04/24 16:00*	*04/16/24 00:21*	*1*
Nitrobenzene-d5 (Surr)	*83*		*37 - 133*	*04/04/24 16:00*	*04/12/24 16:15*	*1*
Nitrobenzene-d5 (Surr)	*142*	*S1+*	*37 - 133*	*04/04/24 16:00*	*04/16/24 00:21*	*1*
p-Terphenyl-d14 (Surr)	*78*		*47 - 130*	*04/04/24 16:00*	*04/12/24 16:15*	*1*
p-Terphenyl-d14 (Surr)	*96*		*47 - 130*	*04/04/24 16:00*	*04/16/24 00:21*	*1*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.000260	U	0.000260		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1221	<0.000520	U	0.000520		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1232	<0.000520	U	0.000520		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1242	<0.000260	U	0.000260		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1248	<0.000520	U	0.000520		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1254	<0.000520	U	0.000520		mg/L		04/04/24 21:01	04/05/24 16:32	1
PCB-1260	<0.000260	U	0.000260		mg/L		04/04/24 21:01	04/05/24 16:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*52 - 134*	*04/04/24 21:01*	*04/05/24 16:32*	*1*
DCB Decachlorobiphenyl (Surr)	*41*		*28 - 94*	*04/04/24 21:01*	*04/05/24 16:32*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<1.00	U	1.00		mg/L			04/25/24 16:53	1
Nitrate as N	**2.78**		0.100		mg/L			04/04/24 19:41	1
Nitrite as N	<0.100	U	0.100		mg/L			04/04/24 19:41	1
Sulfate	**56.5**		0.500		mg/L			04/04/24 19:41	1
Chloride	**440**		2.50		mg/L			04/04/24 19:24	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0200	U	0.0200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Antimony	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1
Arsenic	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1
Barium	**0.218**		0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1
Beryllium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Boron	**0.154**		0.0100		mg/L		04/08/24 10:30	04/08/24 17:36	1
Cadmium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Chromium	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1
Cobalt	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Copper	**0.00509**		0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1
Iron	<0.100	U	0.100		mg/L		04/08/24 10:30	04/08/24 17:36	1
Lead	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1

Eurofins Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Client Sample ID: Windwill

Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1

Matrix: Water

Method: SW846 6020B - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Molybdenum	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Nickel	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Selenium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Silver	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Thallium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 17:36	1
Uranium	**0.00315**		0.00100		mg/L		04/08/24 10:30	04/08/24 17:36	1
Zinc	**0.00465**		0.00400		mg/L		04/08/24 10:30	04/08/24 17:36	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	U	0.000200		mg/L		04/08/24 23:16	04/09/24 17:16	1

General Chemistry

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total (EPA 420.4)	<0.0100	U F1	0.0100		mg/L			04/12/24 11:33	1
Cyanide, Total (EPA Kelada 01)	<0.00500	U	0.00500		mg/L			04/11/24 11:25	1
Total Dissolved Solids (SM 2540C)	**1000**		50.0		mg/L			04/04/24 20:44	1
pH (SM 4500 H+ B)	**7.3**	**HF**	0.01		S.U.			04/04/24 20:18	1
Temperature (SM 4500 H+ B)	**22.0**	**HF**	0.01		Deg. C			04/04/24 20:18	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(63-144)	(74-124)	(75-131)	(80-120)
880-41793-1	Windwill	105	103	98	99
LCS 860-153663/3	Lab Control Sample	100	105	99	100
LCSD 860-153663/4	Lab Control Sample Dup	100	102	99	98
MB 860-153663/10	Method Blank	106	102	99	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(43-130)	(37-133)	(47-130)
880-41793-1	Windwill	88	83	78
880-41793-1	Windwill	86	142 S1+	96
LCS 860-153448/2-A	Lab Control Sample	86	95	90
LCSD 860-153448/3-A	Lab Control Sample Dup	92	101	104
MB 860-153448/1-A	Method Blank	92	94	96

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
NBZ = Nitrobenzene-d5 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(52-134)	(28-94)
880-41793-1	Windwill	70	41
LCS 860-153141/4-A	Lab Control Sample	72	40
LCSD 860-153141/5-A	Lab Control Sample Dup	77	43
MB 860-153141/1-A	Method Blank	71	42

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-153663/10
Matrix: Water
Analysis Batch: 153663

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
1,1,2,2-Tetrachloroethane	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,1,2-Trichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,1-Dichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,1-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,2,4-Trichlorobenzene	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
1,2-Dichlorobenzene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,2-Dichloroethane	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
1,2-Dichloropropane	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
1,4-Dichlorobenzene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Benzene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Carbon tetrachloride	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
Chloroform	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
cis-1,2-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Ethylbenzene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
m,p-Xylenes	<0.0100	U	0.0100		mg/L			04/08/24 10:41	1
Methylene Chloride	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
o-Xylene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Styrene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Tetrachloroethene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Toluene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
trans-1,2-Dichloroethene	<0.00100	U	0.00100		mg/L			04/08/24 10:41	1
Trichloroethene	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
Vinyl chloride	<0.00200	U	0.00200		mg/L			04/08/24 10:41	1
Xylenes, Total	<0.0100	U	0.0100		mg/L			04/08/24 10:41	1
1,2-Dibromoethane	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1
MTBE	<0.00500	U	0.00500		mg/L			04/08/24 10:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 144*		*04/08/24 10:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*		*04/08/24 10:41*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*04/08/24 10:41*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/08/24 10:41*	*1*

Lab Sample ID: LCS 860-153663/3
Matrix: Water
Analysis Batch: 153663

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1-Trichloroethane			0.0500	0.05193		mg/L		104	70 - 130		
1,1,2,2-Tetrachloroethane			0.0500	0.05345		mg/L		107	74 - 125		
1,1,2-Trichloroethane			0.0500	0.05090		mg/L		102	75 - 130		
1,1-Dichloroethane			0.0500	0.05092		mg/L		102	71 - 130		
1,1-Dichloroethene			0.0500	0.05549		mg/L		111	50 - 150		
1,2,4-Trichlorobenzene			0.0500	0.05211		mg/L		104	75 - 135		
1,2-Dichlorobenzene			0.0500	0.05026		mg/L		101	75 - 125		
1,2-Dichloroethane			0.0500	0.04960		mg/L		99	72 - 130		
1,2-Dichloropropane			0.0500	0.04806		mg/L		96	74 - 125		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-153663/3
Matrix: Water
Analysis Batch: 153663

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dichlorobenzene			0.0500	0.04974		mg/L		99	75 - 125		
Benzene			0.0500	0.04930		mg/L		99	75 - 125		
Carbon tetrachloride			0.0500	0.04790		mg/L		96	70 - 125		
Chloroform			0.0500	0.04981		mg/L		100	70 - 121		
cis-1,2-Dichloroethene			0.0500	0.05158		mg/L		103	75 - 125		
Ethylbenzene			0.0500	0.05097		mg/L		102	75 - 125		
m,p-Xylenes			0.0500	0.05079		mg/L		102	75 - 125		
Methylene Chloride			0.0500	0.04779		mg/L		96	71 - 125		
o-Xylene			0.0500	0.05061		mg/L		101	75 - 125		
Styrene			0.0500	0.04926		mg/L		99	75 - 125		
Tetrachloroethene			0.0500	0.05132		mg/L		103	71 - 125		
Toluene			0.0500	0.04963		mg/L		99	75 - 130		
trans-1,2-Dichloroethene			0.0500	0.05266		mg/L		105	75 - 125		
Trichloroethene			0.0500	0.05056		mg/L		101	75 - 135		
Vinyl chloride			0.0500	0.05348		mg/L		107	60 - 140		
1,2-Dibromoethane			0.0500	0.04969		mg/L		99	73 - 125		
MTBE			0.0500	0.05189		mg/L		104	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 144*
4-Bromofluorobenzene (Surr)	*105*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 860-153663/4
Matrix: Water
Analysis Batch: 153663

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			0.0500	0.04893		mg/L		98	70 - 130	6	25
1,1,2,2-Tetrachloroethane			0.0500	0.04965		mg/L		99	74 - 125	7	25
1,1,2-Trichloroethane			0.0500	0.04916		mg/L		98	75 - 130	3	25
1,1-Dichloroethane			0.0500	0.04906		mg/L		98	71 - 130	4	25
1,1-Dichloroethene			0.0500	0.05105		mg/L		102	50 - 150	8	25
1,2,4-Trichlorobenzene			0.0500	0.04764		mg/L		95	75 - 135	9	25
1,2-Dichlorobenzene			0.0500	0.04581		mg/L		92	75 - 125	9	25
1,2-Dichloroethane			0.0500	0.04886		mg/L		98	72 - 130	2	25
1,2-Dichloropropane			0.0500	0.04683		mg/L		94	74 - 125	3	25
1,4-Dichlorobenzene			0.0500	0.04502		mg/L		90	75 - 125	10	25
Benzene			0.0500	0.04757		mg/L		95	75 - 125	4	25
Carbon tetrachloride			0.0500	0.04459		mg/L		89	70 - 125	7	25
Chloroform			0.0500	0.04804		mg/L		96	70 - 121	4	25
cis-1,2-Dichloroethene			0.0500	0.04959		mg/L		99	75 - 125	4	25
Ethylbenzene			0.0500	0.04784		mg/L		96	75 - 125	6	25
m,p-Xylenes			0.0500	0.04759		mg/L		95	75 - 125	6	25
Methylene Chloride			0.0500	0.04531		mg/L		91	71 - 125	5	25
o-Xylene			0.0500	0.04767		mg/L		95	75 - 125	6	25
Styrene			0.0500	0.04700		mg/L		94	75 - 125	5	25

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-153663/4
Matrix: Water
Analysis Batch: 153663

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tetrachloroethene			0.0500	0.04748		mg/L		95	71 - 125	8	25
Toluene			0.0500	0.04702		mg/L		94	75 - 130	5	25
trans-1,2-Dichloroethene			0.0500	0.05018		mg/L		100	75 - 125	5	25
Trichloroethene			0.0500	0.04854		mg/L		97	75 - 135	4	25
Vinyl chloride			0.0500	0.05079		mg/L		102	60 - 140	5	25
1,2-Dibromoethane			0.0500	0.04810		mg/L		96	73 - 125	3	25
MTBE			0.0500	0.05101		mg/L		102	65 - 135	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*63 - 144*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*98*		*80 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 860-153448/1-A
Matrix: Water
Analysis Batch: 154192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153448

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
2-Methylnaphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Acenaphthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Acenaphthylene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Anthracene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Benzo[a]anthracene	<0.0286	U	0.0286		ug/L		04/04/24 16:00	04/10/24 20:26	1
Benzo[a]pyrene	<0.0571	U	0.0571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Benzo[b]fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Benzo[g,h,i]perylene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Benzo[k]fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Chrysene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Dibenz(a,h)anthracene	<0.114	U	0.114		ug/L		04/04/24 16:00	04/10/24 20:26	1
Fluoranthene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Fluorene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Indeno[1,2,3-cd]pyrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Naphthalene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Phenanthrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Pyrene	<0.571	U	0.571		ug/L		04/04/24 16:00	04/10/24 20:26	1
Atrazine	<0.500	U	0.500		ug/L		04/04/24 16:00	04/10/24 20:26	1
Pentachlorophenol	<1.14	U	1.14		ug/L		04/04/24 16:00	04/10/24 20:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl (Surr)	*92*		*43 - 130*	*04/04/24 16:00*	*04/10/24 20:26*	*1*
Nitrobenzene-d5 (Surr)	*94*		*37 - 133*	*04/04/24 16:00*	*04/10/24 20:26*	*1*
p-Terphenyl-d14 (Surr)	*96*		*47 - 130*	*04/04/24 16:00*	*04/10/24 20:26*	*1*

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 860-153448/2-A
Matrix: Water
Analysis Batch: 154192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153448

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1-Methylnaphthalene			2.86	2.454		ug/L		86	52 - 130		
2-Methylnaphthalene			2.86	2.398		ug/L		84	25 - 175		
Acenaphthene			2.86	2.352		ug/L		82	60 - 132		
Acenaphthylene			2.86	2.722		ug/L		95	54 - 126		
Anthracene			2.86	2.146		ug/L		75	43 - 135		
Benzo[a]anthracene			2.86	3.391		ug/L		119	42 - 133		
Benzo[a]pyrene			2.86	2.685		ug/L		94	32 - 148		
Benzo[b]fluoranthene			2.86	3.247		ug/L		114	42 - 140		
Benzo[g,h,i]perylene			2.86	1.891		ug/L		66	25 - 195		
Benzo[k]fluoranthene			2.86	2.950		ug/L		103	25 - 146		
Chrysene			2.86	2.529		ug/L		89	47 - 130		
Dibenz(a,h)anthracene			2.86	2.082		ug/L		73	32 - 200		
Fluoranthene			2.86	2.646		ug/L		93	43 - 130		
Fluorene			2.86	2.424		ug/L		85	70 - 120		
Indeno[1,2,3-cd]pyrene			2.86	1.961		ug/L		69	29 - 151		
Naphthalene			2.86	2.612		ug/L		91	36 - 120		
Phenanthrene			2.86	2.415		ug/L		85	65 - 120		
Pyrene			2.86	2.594		ug/L		91	70 - 130		
Atrazine			2.86	2.577		ug/L		90	70 - 130		
Pentachlorophenol			2.86	1.929		ug/L		68	38 - 152		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*86*		*43 - 130*
Nitrobenzene-d5 (Surr)	*95*		*37 - 133*
p-Terphenyl-d14 (Surr)	*90*		*47 - 130*

Lab Sample ID: LCSD 860-153448/3-A
Matrix: Water
Analysis Batch: 154192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153448

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1-Methylnaphthalene			2.86	2.561		ug/L		90	52 - 130	4	30
2-Methylnaphthalene			2.86	2.402		ug/L		84	25 - 175	0	30
Acenaphthene			2.86	2.394		ug/L		84	60 - 132	2	30
Acenaphthylene			2.86	3.010		ug/L		105	54 - 126	10	30
Anthracene			2.86	2.547		ug/L		89	43 - 135	17	30
Benzo[a]anthracene			2.86	3.582		ug/L		125	42 - 133	5	30
Benzo[a]pyrene			2.86	2.928		ug/L		102	32 - 148	9	30
Benzo[b]fluoranthene			2.86	3.222		ug/L		113	42 - 140	1	30
Benzo[g,h,i]perylene			2.86	2.300		ug/L		81	25 - 195	20	30
Benzo[k]fluoranthene			2.86	3.282		ug/L		115	25 - 146	11	30
Chrysene			2.86	2.660		ug/L		93	47 - 130	5	30
Dibenz(a,h)anthracene			2.86	2.367		ug/L		83	32 - 200	13	30
Fluoranthene			2.86	2.982		ug/L		104	43 - 130	12	30
Fluorene			2.86	2.609		ug/L		91	70 - 120	7	30
Indeno[1,2,3-cd]pyrene			2.86	2.301		ug/L		81	29 - 151	16	30
Naphthalene			2.86	2.565		ug/L		90	36 - 120	2	30
Phenanthrene			2.86	2.636		ug/L		92	65 - 120	9	30

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 860-153448/3-A
Matrix: Water
Analysis Batch: 154192

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153448

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pyrene			2.86	2.821		ug/L		99	70 - 130	8	30
Atrazine			2.86	2.784		ug/L		97	70 - 130	8	30
Pentachlorophenol			2.86	2.160		ug/L		76	38 - 152	11	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*92*		*43 - 130*
Nitrobenzene-d5 (Surr)	*101*		*37 - 133*
p-Terphenyl-d14 (Surr)	*104*		*47 - 130*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 860-153141/1-A
Matrix: Water
Analysis Batch: 153438

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153141

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.000262	U	0.000262		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1221	<0.000524	U	0.000524		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1232	<0.000524	U	0.000524		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1242	<0.000262	U	0.000262		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1248	<0.000524	U	0.000524		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1254	<0.000524	U	0.000524		mg/L		04/03/24 18:17	04/05/24 11:06	1
PCB-1260	<0.000262	U	0.000262		mg/L		04/03/24 18:17	04/05/24 11:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*52 - 134*	*04/03/24 18:17*	*04/05/24 11:06*	*1*
DCB Decachlorobiphenyl (Surr)	*42*		*28 - 94*	*04/03/24 18:17*	*04/05/24 11:06*	*1*

Lab Sample ID: LCS 860-153141/4-A
Matrix: Water
Analysis Batch: 153438

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153141

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016			0.00520	0.005895		mg/L		113	43 - 130
PCB-1260			0.00520	0.004034		mg/L		78	50 - 95

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*72*		*52 - 134*
DCB Decachlorobiphenyl (Surr)	*40*		*28 - 94*

Lab Sample ID: LCSD 860-153141/5-A
Matrix: Water
Analysis Batch: 153438

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153141

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
PCB-1016			0.00525	0.005950		mg/L		113	43 - 130	1	20
PCB-1260			0.00525	0.004268		mg/L		81	50 - 95	6	20

Eurofins Midland

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 860-153141/5-A
Matrix: Water
Analysis Batch: 153438

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153141

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	*77*		*52 - 134*
DCB Decachlorobiphenyl (Surr)	*43*		*28 - 94*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 400-669273/53
Matrix: Water
Analysis Batch: 669273

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<1.00	U	1.00		mg/L			04/25/24 12:13	1

Lab Sample ID: LCS 400-669273/54
Matrix: Water
Analysis Batch: 669273

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			10.0	9.997		mg/L		100	90 - 110		

Lab Sample ID: LCSD 400-669273/55
Matrix: Water
Analysis Batch: 669273

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			10.0	9.940		mg/L		99	90 - 110	1	15

Lab Sample ID: MB 880-77357/3
Matrix: Water
Analysis Batch: 77357

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<0.500	U	0.500		mg/L			04/04/24 12:19	1
Chloride	<0.500	U	0.500		mg/L			04/04/24 12:19	1

Lab Sample ID: LCS 880-77357/4
Matrix: Water
Analysis Batch: 77357

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			25.0	24.28		mg/L		97	90 - 110		
Chloride			25.0	25.03		mg/L		100	90 - 110		

Lab Sample ID: LCSD 880-77357/5
Matrix: Water
Analysis Batch: 77357

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			25.0	24.46		mg/L		98	90 - 110	1	20
Chloride			25.0	24.95		mg/L		100	90 - 110	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 880-77358/3
Matrix: Water
Analysis Batch: 77358

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.100	U	0.100		mg/L			04/04/24 12:19	1
Nitrite as N	<0.100	U	0.100		mg/L			04/04/24 12:19	1

Lab Sample ID: LCS 880-77358/4
Matrix: Water
Analysis Batch: 77358

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			5.00	4.974		mg/L		99	90 - 110		
Nitrite as N			5.00	5.063		mg/L		101	90 - 110		

Lab Sample ID: LCSD 880-77358/5
Matrix: Water
Analysis Batch: 77358

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			5.00	4.967		mg/L		99	90 - 110	0	20
Nitrite as N			5.00	5.049		mg/L		101	90 - 110	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 860-153717/1-A
Matrix: Water
Analysis Batch: 153799

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153717

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.0200	U	0.0200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Antimony	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1
Arsenic	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1
Barium	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1
Beryllium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Boron	<0.0100	U	0.0100		mg/L		04/08/24 10:30	04/08/24 16:42	1
Cadmium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Chromium	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1
Cobalt	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Copper	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1
Iron	<0.100	U	0.100		mg/L		04/08/24 10:30	04/08/24 16:42	1
Lead	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Manganese	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Molybdenum	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Nickel	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Selenium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Silver	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Thallium	<0.00200	U	0.00200		mg/L		04/08/24 10:30	04/08/24 16:42	1
Uranium	<0.00100	U	0.00100		mg/L		04/08/24 10:30	04/08/24 16:42	1
Zinc	<0.00400	U	0.00400		mg/L		04/08/24 10:30	04/08/24 16:42	1

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 860-153717/2-A
Matrix: Water
Analysis Batch: 153799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153717

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.500	0.4977		mg/L		100	80 - 120
Antimony	0.100	0.09738		mg/L		97	80 - 120
Arsenic	0.100	0.09919		mg/L		99	80 - 120
Barium	0.100	0.09745		mg/L		97	80 - 120
Beryllium	0.100	0.09822		mg/L		98	80 - 120
Boron	0.100	0.09577		mg/L		96	80 - 120
Cadmium	0.100	0.09956		mg/L		100	80 - 120
Chromium	0.100	0.1005		mg/L		101	80 - 120
Cobalt	0.100	0.09972		mg/L		100	80 - 120
Copper	0.100	0.09952		mg/L		100	80 - 120
Iron	0.500	0.5145		mg/L		103	80 - 120
Lead	0.100	0.09749		mg/L		97	80 - 120
Manganese	0.100	0.09918		mg/L		99	80 - 120
Molybdenum	0.100	0.09914		mg/L		99	80 - 120
Nickel	0.100	0.09964		mg/L		100	80 - 120
Selenium	0.100	0.09675		mg/L		97	80 - 120
Silver	0.0500	0.04944		mg/L		99	80 - 120
Thallium	0.100	0.09858		mg/L		99	80 - 120
Uranium	0.0249	0.02495		mg/L		100	80 - 120
Zinc	0.100	0.09938		mg/L		99	80 - 120

Lab Sample ID: LCSD 860-153717/3-A
Matrix: Water
Analysis Batch: 153799

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153717

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.500	0.4962		mg/L		99	80 - 120	0	20
Antimony	0.100	0.09982		mg/L		100	80 - 120	2	20
Arsenic	0.100	0.09960		mg/L		100	80 - 120	0	20
Barium	0.100	0.09735		mg/L		97	80 - 120	0	20
Beryllium	0.100	0.09948		mg/L		99	80 - 120	1	20
Boron	0.100	0.09964		mg/L		100	80 - 120	4	20
Cadmium	0.100	0.1002		mg/L		100	80 - 120	1	20
Chromium	0.100	0.1006		mg/L		101	80 - 120	0	20
Cobalt	0.100	0.09981		mg/L		100	80 - 120	0	20
Copper	0.100	0.09957		mg/L		100	80 - 120	0	20
Iron	0.500	0.5113		mg/L		102	80 - 120	1	20
Lead	0.100	0.09835		mg/L		98	80 - 120	1	20
Manganese	0.100	0.09927		mg/L		99	80 - 120	0	20
Molybdenum	0.100	0.09951		mg/L		100	80 - 120	0	20
Nickel	0.100	0.09984		mg/L		100	80 - 120	0	20
Selenium	0.100	0.09643		mg/L		96	80 - 120	0	20
Silver	0.0500	0.04992		mg/L		100	80 - 120	1	20
Thallium	0.100	0.09997		mg/L		100	80 - 120	1	20
Uranium	0.0249	0.02525		mg/L		102	80 - 120	1	20
Zinc	0.100	0.09918		mg/L		99	80 - 120	0	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 860-153844/1-A
Matrix: Water
Analysis Batch: 154012

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 153844

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	U	0.000200		mg/L		04/08/24 23:16	04/09/24 16:50	1

Lab Sample ID: LCS 860-153844/2-A
Matrix: Water
Analysis Batch: 154012

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 153844

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00200	0.002040		mg/L		102	80 - 120		

Lab Sample ID: LCSD 860-153844/3-A
Matrix: Water
Analysis Batch: 154012

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 153844

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00200	0.002039		mg/L		102	80 - 120	0	20

Method: 420.4 - Phenolics, Total Recoverable

Lab Sample ID: MB 860-154711/16
Matrix: Water
Analysis Batch: 154711

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0100	U	0.0100		mg/L			04/12/24 10:55	1

Lab Sample ID: LCS 860-154711/17
Matrix: Water
Analysis Batch: 154711

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenols, Total			0.100	0.09790		mg/L		98	90 - 110		

Lab Sample ID: LCSD 860-154711/18
Matrix: Water
Analysis Batch: 154711

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenols, Total			0.100	0.1020		mg/L		102	90 - 110	4	20

Lab Sample ID: 880-41793-1 MS
Matrix: Water
Analysis Batch: 154711

Client Sample ID: Windwill
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenols, Total	<0.0100	U F1	0.100	<0.0100	U F1	mg/L		0	90 - 110		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: 420.4 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: 880-41793-1 MSD
Matrix: Water
Analysis Batch: 154711

Client Sample ID: Windwill
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenols, Total	<0.0100	U F1	0.100	<0.0100	U F1	mg/L		0	90 - 110	NC	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 860-154355/24
Matrix: Water
Analysis Batch: 154355

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00500	U	0.00500		mg/L			04/11/24 10:30	1

Lab Sample ID: MB 860-154355/65
Matrix: Water
Analysis Batch: 154355

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.00500	U	0.00500		mg/L			04/11/24 12:26	1

Lab Sample ID: LCS 860-154355/26
Matrix: Water
Analysis Batch: 154355

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			0.100	0.09006		mg/L		90	90 - 110		

Lab Sample ID: LCSD 860-154355/67
Matrix: Water
Analysis Batch: 154355

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			0.100	0.1073		mg/L		107	90 - 110	2	20

Lab Sample ID: LLCS 860-154355/25
Matrix: Water
Analysis Batch: 154355

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

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			0.0100	0.01167		mg/L		117	50 - 150		

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 880-77416/1
Matrix: Water
Analysis Batch: 77416

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<25.0	U	25.0		mg/L			04/04/24 20:44	1

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 880-77416/2
Matrix: Water
Analysis Batch: 77416

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	998.0		mg/L		100	80 - 120		

Lab Sample ID: LCSD 880-77416/3
Matrix: Water
Analysis Batch: 77416

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1000		mg/L		100	80 - 120	0	10

Lab Sample ID: 880-41793-1 DU
Matrix: Water
Analysis Batch: 77416

Client Sample ID: Windwill
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1000			1003		mg/L				0	10

Method: SM 4500 H+ B - pH

Lab Sample ID: 880-41793-1 DU
Matrix: Water
Analysis Batch: 77415

Client Sample ID: Windwill
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.3	HF		7.3		S.U.				0.1	10
Temperature	22.0	HF		22.1		Deg. C				0.5	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

GC/MS VOA

Analysis Batch: 153663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8260D	
MB 860-153663/10	Method Blank	Total/NA	Water	8260D	
LCS 860-153663/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 860-153663/4	Lab Control Sample Dup	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 153448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3511	
MB 860-153448/1-A	Method Blank	Total/NA	Water	3511	
LCS 860-153448/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 860-153448/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 154192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 860-153448/1-A	Method Blank	Total/NA	Water	8270E	153448
LCS 860-153448/2-A	Lab Control Sample	Total/NA	Water	8270E	153448
LCSD 860-153448/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	153448

Analysis Batch: 154487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8270E	153448

Analysis Batch: 154867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8270E	153448

GC Semi VOA

Prep Batch: 153141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3511	
MB 860-153141/1-A	Method Blank	Total/NA	Water	3511	
LCS 860-153141/4-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 860-153141/5-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 153438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	8082A	153141
MB 860-153141/1-A	Method Blank	Total/NA	Water	8082A	153141
LCS 860-153141/4-A	Lab Control Sample	Total/NA	Water	8082A	153141
LCSD 860-153141/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	153141

HPLC/IC

Analysis Batch: 77357

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 880-77357/3	Method Blank	Total/NA	Water	300.0	
LCS 880-77357/4	Lab Control Sample	Total/NA	Water	300.0	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

HPLC/IC (Continued)

Analysis Batch: 77357 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 880-77357/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 77358

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 880-77358/3	Method Blank	Total/NA	Water	300.0	
LCS 880-77358/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-77358/5	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 669273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	300.0	
MB 400-669273/53	Method Blank	Total/NA	Water	300.0	
LCS 400-669273/54	Lab Control Sample	Total/NA	Water	300.0	
LCSD 400-669273/55	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Prep Batch: 153717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	3010A	
MB 860-153717/1-A	Method Blank	Total/NA	Water	3010A	
LCS 860-153717/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 860-153717/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 153799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	6020B	153717
MB 860-153717/1-A	Method Blank	Total/NA	Water	6020B	153717
LCS 860-153717/2-A	Lab Control Sample	Total/NA	Water	6020B	153717
LCSD 860-153717/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	153717

Prep Batch: 153844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	7470A	
MB 860-153844/1-A	Method Blank	Total/NA	Water	7470A	
LCS 860-153844/2-A	Lab Control Sample	Total/NA	Water	7470A	
LCSD 860-153844/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	

Analysis Batch: 154012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	7470A	153844
MB 860-153844/1-A	Method Blank	Total/NA	Water	7470A	153844
LCS 860-153844/2-A	Lab Control Sample	Total/NA	Water	7470A	153844
LCSD 860-153844/3-A	Lab Control Sample Dup	Total/NA	Water	7470A	153844

General Chemistry

Analysis Batch: 77415

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	SM 4500 H+ B	
880-41793-1 DU	Windwill	Total/NA	Water	SM 4500 H+ B	

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

General Chemistry

Analysis Batch: 77416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	SM 2540C	
MB 880-77416/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 880-77416/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 880-77416/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
880-41793-1 DU	Windwill	Total/NA	Water	SM 2540C	

Analysis Batch: 154355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	Kelada 01	
MB 860-154355/24	Method Blank	Total/NA	Water	Kelada 01	
MB 860-154355/65	Method Blank	Total/NA	Water	Kelada 01	
LCS 860-154355/26	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 860-154355/67	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
LLCS 860-154355/25	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 154711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	420.4	
MB 860-154711/16	Method Blank	Total/NA	Water	420.4	
LCS 860-154711/17	Lab Control Sample	Total/NA	Water	420.4	
LCSD 860-154711/18	Lab Control Sample Dup	Total/NA	Water	420.4	
880-41793-1 MS	Windwill	Total/NA	Water	420.4	
880-41793-1 MSD	Windwill	Total/NA	Water	420.4	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Client Sample ID: Windwill
Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	5 mL	5 mL	153663	04/08/24 12:45	NA	EET HOU
Total/NA	Prep	3511			35.00 mL	2.00 mL	153448	04/04/24 16:00	DR	EET HOU
Total/NA	Analysis	8270E		1	1 mL	1 mL	154487	04/12/24 16:15	EM	EET HOU
Total/NA	Prep	3511			35.00 mL	2.00 mL	153448	04/04/24 16:00	DR	EET HOU
Total/NA	Analysis	8270E		1	1 mL	1 mL	154867	04/16/24 00:21	EM	EET HOU
Total/NA	Prep	3511			48.1 mL	5 mL	153141	04/04/24 21:01	DS	EET HOU
Total/NA	Analysis	8082A		1			153438	04/05/24 16:32	WP	EET HOU
Total/NA	Analysis	300.0		5	10 mL	10 mL	77357	04/04/24 19:24	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	77357	04/04/24 19:41	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	77358	04/04/24 19:41	SMC	EET MID
Total/NA	Analysis	300.0		1	10 mL	10 mL	669273	04/25/24 16:53	LHB	EET PEN
Total/NA	Prep	3010A			50 mL	50 mL	153717	04/08/24 10:30	MD	EET HOU
Total/NA	Analysis	6020B		1			153799	04/08/24 17:36	SHZ	EET HOU
Total/NA	Prep	7470A			50 mL	50 mL	153844	04/08/24 23:16	AGR	EET HOU
Total/NA	Analysis	7470A		1			154012	04/09/24 17:16	SHZ	EET HOU
Total/NA	Analysis	420.4		1	10 mL	10 mL	154711	04/12/24 11:33	ADL	EET HOU
Total/NA	Analysis	Kelada 01		1	50 mL	50 mL	154355	04/11/24 11:25	ADL	EET HOU
Total/NA	Analysis	SM 2540C		1	100 mL	200 mL	77416	04/04/24 20:44	SMC	EET MID
Total/NA	Analysis	SM 4500 H+ B		1			77415	04/04/24 20:18	SMC	EET MID

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-23-26	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
420.4		Water	Phenols, Total
6020B	3010A	Water	Uranium
8270E	3511	Water	1-Methylnaphthalene

Laboratory: Eurofins Pensacola

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

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-24
ANAB	ISO/IEC 17025	L2471	02-22-26
Arkansas DEQ	State	88-00689	08-01-24
California	State	2510	06-30-24
Florida	NELAP	E81010	06-30-24
Georgia	State	E81010(FL)	06-30-24
Illinois	NELAP	200041	10-09-24
Kansas	NELAP	E-10253	10-31-24
Kentucky (UST)	State	53	06-30-24
Louisiana (All)	NELAP	30976	06-30-24
Louisiana (DW)	State	LA017	12-31-24
North Carolina (WW/SW)	State	314	12-31-24
Oklahoma	NELAP	9810	08-31-24
Pennsylvania	NELAP	68-00467	01-31-25
South Carolina	State	96026	06-30-24
Tennessee	State	TN02907	06-30-24
Texas	NELAP	T104704286	09-30-24
US Fish & Wildlife	US Federal Programs	A22340	06-30-24
USDA	US Federal Programs	FLGNV23001	01-08-26
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-24
West Virginia DEP	State	136	03-31-25

Method Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET HOU
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET HOU
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET HOU
300.0	Anions, Ion Chromatography	EPA	EET MID
300.0	Anions, Ion Chromatography	EPA	EET PEN
6020B	Metals (ICP/MS)	SW846	EET HOU
7470A	Mercury (CVAA)	SW846	EET HOU
420.4	Phenolics, Total Recoverable	EPA	EET HOU
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET MID
SM 4500 H+ B	pH	SM	EET MID
3010A	Preparation, Total Metals	SW846	EET HOU
3511	Microextraction of Organic Compounds	SW846	EET HOU
5030C	Purge and Trap	SW846	EET HOU
7470A	Preparation, Mercury	SW846	EET HOU

Protocol References:

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

EET MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-41793-1	Windwill	Water	04/03/24 10:15	04/03/24 14:48

Page 485 of 733

No. 3238

CHAIN OF CUSTODY

880-41793 Chain of Custody

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE. 4/3/2024 PAGE 1 OF 1

PO#

LAB WORK ORDER#

PROJECT LOCATION OR NAME Apache/EBDU 37

LAI PROJECT # 19-0112-49 COLLECTOR MK

Data Reported to Mark Larson/Robert Nelson

TRRP report? ☐ Yes ☒ No

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

TIME ZONE
Time zone/State Mtn/NM

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
Wind mill		4/3/24	10:15	W	17							See attached 3103 parameters Bill Apache Corp (Bruce Baker)

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

TOTAL 1

RELINQUISHED BY (Signature)	DATE/TIME 2:48 4/3	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.6/3.5 THERM# IR8 - 10
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

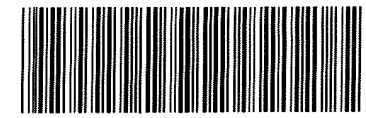
Received by OCD: 1/9/2025 8:05:52 PM

Page 29 of 37

Released to Imaging: 1/9/2025 4:04:07 PM

4/30/2024

Released to Imaging: 1/9/2025 4:04:07 PM



20.6.2.2202 - 20.6.2.2999: [RESERVED]
[12-1-95, 20 6 2 2202 - 20 6 2 2999 NMAC - Rn, 20 NMAC 6 2 II 2202-3100, 1-15-01]

20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:
[12-1-95, 20 6 2 3000 NMAC - Rn, 20 NMAC 6 2 III, 1-15-01]

20.6.2.3001 - 20.6.2.3100: [RESERVED]
[12-1-95, 20 6 2 3001 - 20 6 2 3100 NMAC - Rn, 20 NMAC 6 2 II 2202-3100, 1-15-01]

20.6.2.3101 PURPOSE:

A. The purpose of Sections 20 6 2.3000 through 20 6 2 3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards Sections 20 6 2 3000 through 20 6 2 3114 NMAC are written so that in general.

(1) if the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

(2) if the existing concentration of any water contaminant in ground water exceeds the standard of Section 20 6 2 3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

B. Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources

C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations
[2-18-77; 20 6.2 3101 NMAC - Rn, 20 NMAC 6 2 III 3101, 1-15-01]

20.6.2.3102: [RESERVED]
[12-1-95, 20 6.2 3102 NMAC - Rn, 20 NMAC 6.2 III 3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection E of Section 20 6 2 3109 NMAC Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U S environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total nonfiltered concentrations of the contaminants If the secretary determines that there is a reasonable probability of facilitated contaminant transport by colloids or organic macromolecules, or that proper filtration procedures are not being followed, the discharger may be required to test for both filtered and nonfiltered portions of inorganic contaminants to develop appropriate protocol for monitoring contaminants that have the potential to migrate through the aquifer.

A. Human Health Standards

(1) Numerical Standards

(a)	Antimony (Sb) (CAS 7440-36-0)	0 006 mg/l
(b)	Arsenic (As) (CAS 7440-38-2)	0 01 mg/l
(c)	Barium (Ba) (CAS 7440-39-3)	2 mg/l
(d)	Beryllium (be) (CAS 7440-41-7)	0 004 mg/l
(e)	Cadmium (Cd) (CAS 7440-43-9)	0 005 mg/l
(f)	Chromium (Cr) (CAS 7440-47-3)	0 05 mg/l

Received by OCD: 1/9/2025 8:05:52 PM Page 486 of 738

41793

(g)	Cyanide (CN) (CAS 57-12-5)	0 2 mg/l
(h)	Fluoride (F) (CAS 16984-48-8)	1 6 mg/l
(i)	Lead (Pb) (CAS 7439-92-1)	0 015 mg/l
(j)	Total Mercury (Hg) (CAS 7439-97-6)	0 002 mg/l
(k)	Nitrate (NO_3 as N) (CAS 14797-55-8)	10 0 mg/l
(l)	Nitrite (NO_2 as N) (CAS 10102-44-0)	1 0 mg/l
(m)	Selenium (Se) (CAS 7782-49-2)	0 05 mg/l
(n)	Silver (Ag) (CAS 7440-224)	0 05 mg/l
(o)	Thallium (Tl) (CAS 7440-28-0)	0 002 mg/l
(p)	Uranium (U) (CAS 7440-61-1)	0 03 mg/l
(q)	Radioactivity Combined Radium-226 (CAS 13982-63-3) and Radium-228 (CAS 15262-20-1)	5 pCi/l
(r)	Benzene (CAS 71-43-2)	.0 005 mg/l
(s)	Polychlorinated biphenyls (PCB's) (CAS 1336-36-3)	0 0005 mg/l
(t)	Toluene (CAS 108-88-3)	1 mg/l
(u)	Carbon Tetrachloride (CAS 56-23-5)	. 0 005 mg/l
(v)	1,2-dichloroethane (EDC) (CAS 107-06-2)	.0 005 mg/l
(w)	1,1-dichloroethylene (1,1-DCE) (CAS 75-35-4)	0 007 mg/l
(x)	tetrachloroethylene (PCE) (CAS 127-18-4).	0 005 mg/l
(y)	trichloroethylene (TCE) (CAS 79-01-6).	0 005 mg/l
(z)	ethylbenzene (CAS 100-41-4)	0 7 mg/l
(aa)	total xylenes (CAS 1330-20-7)	0 62 mg/l
(bb)	methylene chloride (CAS 75-09-2)	0 005 mg/l
(cc)	chloroform (CAS 67-66-3)	0 1 mg/l
(dd)	1,1-dichloroethane (CAS 75-34-3)	0 025 mg/l
(ee)	ethylene dibromide (EDB) (CAS 106-93-4)	0 00005 mg/l
(ff)	1,1,1-trichloroethane (CAS 71-55-6)	0 2 mg/l
(gg)	1,1,2-trichloroethane (CAS 79-00-5)	0.005 mg/l
(hh)	1,1,2,2-tetrachloroethane (CAS 79-34-5)	0 01 mg/l
(ii)	vinyl chloride (CAS 75-01-4)	0 002 mg/l
(jj)	PAHs total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes	0 03 mg/l
(kk)	benzo-a-pyrene (CAS 50-32-8).	0 0002 mg/l
(ll)	cis-1,2-dichloroethene (CAS 156-59-2)	0 07 mg/l
(mm)	trans-1,2-dichloroethene (CAS 156-60-5)	0 1 mg/l
(nn)	1,2-dichloropropane (PDC) (CAS 78-87-5)	0 005 mg/l
(oo)	styrene (CAS 100-42-5)	0 1 mg/l
(pp)	1,2-dichlorobenzene (CAS 95-50-1)	0 6 mg/l
(qq)	1,4-dichlorobenzene (CAS 106-46-7)	0 075 mg/l
(rr)	1,2,4-trichlorobenzene (CAS 120-82-1)	0 07 mg/l
(ss)	pentachlorophenol (CAS 87-86-5)	0 001 mg/l
(tt)	atrazine (CAS 1912-24-9)	0 003 mg/l

(2) Standards for Toxic Pollutants. A toxic pollutant shall not be present at a concentration shown by credible scientific data and other evidence appropriate under the Water Quality Act, currently available to the public, to have potential for causing one or more of the following effects upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains: (1) unreasonably threatens to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring, or (2) creates a lifetime risk of more than one cancer per 100,000 exposed persons

(3) Standards for Non-Aqueous Phase Liquids. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

B. Other Standards for Domestic Water Supply

(1)	Chloride (Cl) (CAS 16887-00-6)	250.0 mg/l
(2)	Copper (Cu) (CAS 7440-50-8)	1 0 mg/l
(3)	Iron (Fe) (CAS 7439-89-6)	1 0 mg/l

4/30/2024 Page 32 of 37 Released to Imaging: 1/9/2025 4:04:07 PM
Loc: 880
41793

(4)	Manganese (Mn) (CAS 7439-96-5)	0 2 mg/l
(5)	Phenols	0 005 mg/l
(6)	Sulfate (SO_4) (CAS 14808-79-8)	600 0 mg/l
(7)	Total Dissolved Solids (TDS) TDS	1000 0 mg/l
(8)	Zinc (Zn) (CAS 7440-66-6)	10 0 mg/l
(9)	pH	between 6 and 9
(10)	Methyl tertiary-butyl ether (MTBE) (CAS 1634-04-4)	0 1 mg/l

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1)	Aluminum (Al) (CAS 7429-90-5)	5 0 mg/l
(2)	Boron (B) (CAS 7440-42-8)	0 75 mg/l
(3)	Cobalt (Co) (CAS 7440-48-4)	0 05 mg/l
(4)	Molybdenum (Mo) (CAS 7439-98-7)	1 0 mg/l
(5)	Nickel (Ni) (CAS 7440-02-0)	0.2 mg/l

D. For purposes of application of the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylene chloride, EDB, 1,1,2-trichloroethane and benzo-a-pyrene, to past and current water discharges (as of July 1, 2017), the new standards will not become effective until July 1, 2020 With regard to sites for which the secretary has approved an abatement completion report as of the effective date of this rule pursuant to 20 6 2 4112 NMAC, the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylene chloride, EDB, 1,1,2-trichloroethane and benzo-a-pyrene shall not apply unless the secretary notifies the responsible person that the site is a source of these contaminants in ground water that pose a hazard to public health

[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95, 20 6 2 3103 NMAC - Rn, 20 NMAC 6.2.III 3103, 1-15-01; A, 9-26-04, A, 12-21-18]

[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary When a permit has been issued, discharges must be consistent with the terms and conditions of the permit In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20 6 2 3111 NMAC, regarding transfers

[2-18-77, 12-24-87, 12-1-95, Rn & A, 20.6.2 3104 NMAC - 20 NMAC 6.2.III 3104, 1-15-01, A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply,

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section,

Received by OCD: 1/9/2025 8:05:52 PM Page 488 of 738

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 8:05:52 PM

Eurofins Midland
1211 W. Florida Ave
Midland, TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Taylor, Holly	Carrier Tracking No(s):	COC No: 880-9762.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly.Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Texas		Job #: 880-41793-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/10/2024			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Apache/EBDU 37	Project #: 88000254			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	903.0/PrecSep_21 Rad 226	904.0/PrecSep_0 Rad 228	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
Windwill (880-41793-1)	4/3/24	10:15 Mountain		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
			Richard Thornley	APR 3 4 2024 0805	ETA STL
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Custody Seal No.:

Page 490 of 733

Eurofins Midland
1211 W Florida Ave
Midland TX 79701
Phone: 432-704-5440

Chain of Custody Record

eurofins | Environment Testing

4/30/2024

Client Information (Sub Contract Lab)	Sampler	Lab PM: Taylor Holly	Carrier Tracking No(s):	COC No: 880-9763.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Holly Taylor@et.eurofinsus.com	State of Origin: New Mexico	Page: Page 1 of 1
Company: Eurofins Environment Testing South Centr		Accreditations Required (See note): NELAP Texas		Job #: 880-41793-1
Address: 4145 Greenbriar Dr	Due Date Requested: 4/9/2024			
City: Stafford	TAT Requested (days):			
State, Zip: TX, 77477				
Phone: 281-240-4200(Tel)	PO #:			
Email:	WO #:			
Project Name: Apache/EBDU 37	Project #: 88000254			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Total Number of containers	Perform MS/MSD (Yes or No)	Kelada_01/ Cyanide	6020B/3010A Metals (19) + U	7470A/7470A_Prep Mercury	8260D/5030C Full List VOCs	8082A/3511 Standard PCBs	8270E_QQQ/3511 (MOD) Polycyclic Aromatic Hydrocarbons (	420.4_NP	Special Instructions/Note:
Windwill (880-41793-1)	4/3/24	10.15 Mountain		Water			X	X	X	X	X	X	X	PAH + Atrizine, Pentachlorophenol

Hcl 368
3.9
3.4

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing South Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing South Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing South Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing South Central, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1				Jeremiah Baker	4/4/2024 9:27	EX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Page 34 of 37

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-1
SDG Number: 19-0112-49

Login Number: 41793
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-1
SDG Number: 19-0112-49

Login Number: 41793
List Number: 2
Creator: Baker, Jeremiah

List Source: Eurofins Houston
List Creation: 04/04/24 12:52 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-1
SDG Number: 19-0112-49

Login Number: 41793
List Number: 4
Creator: Earnest, Tamantha

List Source: Eurofins Pensacola
List Creation: 04/22/24 03:02 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.0°C IR8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 5/3/2024 10:38:04 AM

JOB DESCRIPTION

Apache/EBDU 37
19-0112-49

JOB NUMBER

880-41793-2

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
5/3/2024 10:38:04 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Laboratory Job ID: 880-41793-2
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
Tracer Carrier Summary 7
QC Sample Results 8
QC Association Summary 9
Lab Chronicle 10
Certification Summary 11
Method Summary 12
Sample Summary 13
Chain of Custody 14
Receipt Checklists 18

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-41793-2
Project/Site: Apache/EBDU 37 SDG: 19-0112-49

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-41793-2
Project: Apache/EBDU 37

Job ID: 880-41793-2 Eurofins Midland

Job Narrative
880-41793-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 4/3/2024 2:48 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.5°C.

Gas Flow Proportional Counter
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Client Sample ID: Windwill

Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1

Matrix: Water

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.344		0.154	0.157	1.00	0.159	pCi/L	04/08/24 10:35	04/30/24 09:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*04/08/24 10:35*	*04/30/24 09:42*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.601		0.402	0.406	1.00	0.596	pCi/L	04/08/24 10:40	04/28/24 11:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*30 - 110*	*04/08/24 10:40*	*04/28/24 11:39*	*1*
Y Carrier	*70.3*		*30 - 110*	*04/08/24 10:40*	*04/28/24 11:39*	*1*

Tracer/Carrier Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
880-41793-1	Windwill	90.5
LCS 160-655852/2-A	Lab Control Sample	94.0
MB 160-655852/1-A	Method Blank	102

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
880-41793-1	Windwill	90.5	70.3
LCS 160-655853/2-A	Lab Control Sample	94.0	86.0
MB 160-655853/1-A	Method Blank	102	89.3

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-655852/1-A
Matrix: Water
Analysis Batch: 659273

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 655852

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.07913	U	0.0935	0.0938	1.00	0.152	pCi/L	04/08/24 10:35	04/30/24 09:41	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*04/08/24 10:35*	*04/30/24 09:41*	*1*

Lab Sample ID: LCS 160-655852/2-A
Matrix: Water
Analysis Batch: 659273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 655852

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.865		1.14	1.00	0.146	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.0*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-655853/1-A
Matrix: Water
Analysis Batch: 659062

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 655853

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.08801	U	0.276	0.276	1.00	0.490	pCi/L	04/08/24 10:40	04/28/24 11:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*102*		*30 - 110*	*04/08/24 10:40*	*04/28/24 11:39*	*1*
Y Carrier	*89.3*		*30 - 110*	*04/08/24 10:40*	*04/28/24 11:39*	*1*

Lab Sample ID: LCS 160-655853/2-A
Matrix: Water
Analysis Batch: 659062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 655853

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.99	9.634		1.28	1.00	0.435	pCi/L	107	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.0*		*30 - 110*
Y Carrier	*86.0*		*30 - 110*

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Rad

Prep Batch: 655852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	PrecSep-21	
MB 160-655852/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-655852/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 655853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-41793-1	Windwill	Total/NA	Water	PrecSep_0	
MB 160-655853/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-655853/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Client Sample ID: Windwill
Date Collected: 04/03/24 10:15
Date Received: 04/03/24 14:48

Lab Sample ID: 880-41793-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.46 mL	1.0 g	655852	04/08/24 10:35	KAK	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	659273	04/30/24 09:42	SCB	EET SL
Total/NA	Prep	PrecSep_0			999.46 mL	1.0 g	655853	04/08/24 10:40	KAK	EET SL
Total/NA	Analysis	904.0		1			659062	04/28/24 11:39	SCB	EET SL

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-08-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-24
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-24
Connecticut	State	PH-0241	03-31-25
Florida	NELAP	E87689	06-30-24
HI - RadChem Recognition	State	n/a	06-30-24
Illinois	NELAP	200023	11-30-24
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-24
Kentucky (DW)	State	KY90125	12-31-24
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-24
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-24
Louisiana (DW)	State	LA011	12-31-24
Maryland	State	310	09-30-24
Massachusetts	State	M-MO054	06-30-24
MI - RadChem Recognition	State	9005	06-30-24
Missouri	State	780	06-30-25
Nevada	State	MO00054	07-31-24
New Jersey	NELAP	MO002	06-30-24
New Mexico	State	MO00054	06-30-24
New York	NELAP	11616	03-31-25
North Carolina (DW)	State	29700	07-31-24
North Dakota	State	R-207	06-30-24
Oklahoma	NELAP	9997	08-31-24
Oregon	NELAP	4157	09-01-24
Pennsylvania	NELAP	68-00540	02-28-25
South Carolina	State	85002001	06-30-24
Texas	NELAP	T104704193	07-31-24
US Fish & Wildlife	US Federal Programs	058448	07-31-24
USDA	US Federal Programs	P330-17-00028	05-18-26
Utah	NELAP	MO00054	07-31-24
Virginia	NELAP	10310	06-15-25
Washington	State	C592	08-30-24
West Virginia DEP	State	381	10-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: Apache/EBDU 37

Job ID: 880-41793-2
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-41793-1	Windwill	Water	04/03/24 10:15	04/03/24 14:48

Page 507 of 733

Received by OCD: 1/9/2025 8:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

5/3/2024

No. 3238

880-41793 Chain of Custody

CHAIN OF CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

DATE: 4/3/2024 PAGE 1 OF 1

PO#

LAB WORK ORDER#

PROJECT LOCATION OR NAME Apache/EBDU 37

LAI PROJECT # 19-0112-49 COLLECTOR MK

Data Reported to Mark Larson/Robert Nelson

TRRP report? ☐ Yes ☒ No

TIME ZONE
Time zone/State Mtn/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES	FIELD NOTES
Wind mill		4/3/24	10:15	W	17							See attached 3103 parameters Bill Apache Corp (Bruce Baker)

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

TOTAL 1

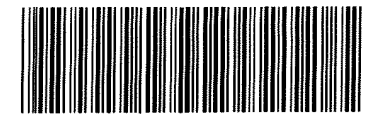
RELINQUISHED BY (Signature)	DATE/TIME 2:48 4/3	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.6/3.5 THERM# IR8 - 10
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

Released to Imaging: 1/9/2025 4:04:07 PM



20.6.2.2202 - 20.6.2.2999: [RESERVED]
[12-1-95, 20 6 2 2202 - 20 6 2 2999 NMAC - Rn, 20 NMAC 6 2 II 2202-3100, 1-15-01]

20.6.2.3000 PERMITTING AND GROUND WATER STANDARDS:
[12-1-95, 20 6 2 3000 NMAC - Rn, 20 NMAC 6 2 III, 1-15-01]

20.6.2.3001 - 20.6.2.3100: [RESERVED]
[12-1-95, 20 6 2 3001 - 20 6 2 3100 NMAC - Rn, 20 NMAC 6 2 II 2202-3100, 1-15-01]

20.6.2.3101 PURPOSE:

A. The purpose of Sections 20 6 2.3000 through 20 6 2 3114 NMAC controlling discharges onto or below the surface of the ground is to protect all ground water of the state of New Mexico which has an existing concentration of 10,000 mg/l or less TDS, for present and potential future use as domestic and agricultural water supply, and to protect those segments of surface waters which are gaining because of ground water inflow, for uses designated in the New Mexico Water Quality Standards Sections 20 6 2 3000 through 20 6 2 3114 NMAC are written so that in general.

(1) if the existing concentration of any water contaminant in ground water is in conformance with the standard of 20.6.2.3103 NMAC, degradation of the ground water up to the limit of the standard will be allowed; and

(2) if the existing concentration of any water contaminant in ground water exceeds the standard of Section 20 6 2 3103 NMAC, no degradation of the ground water beyond the existing concentration will be allowed.

B. Ground water standards are numbers that represent the pH range and maximum concentrations of water contaminants in the ground water which still allow for the present and future use of ground water resources

C. The standards are not intended as maximum ranges and concentrations for use, and nothing herein contained shall be construed as limiting the use of waters containing higher ranges and concentrations
[2-18-77; 20 6.2 3101 NMAC - Rn, 20 NMAC 6 2 III 3101, 1-15-01]

20.6.2.3102: [RESERVED]
[12-1-95, 20 6.2 3102 NMAC - Rn, 20 NMAC 6.2 III 3102, 1-15-01]

20.6.2.3103 STANDARDS FOR GROUND WATER OF 10,000 mg/l TDS CONCENTRATION OR LESS: The following standards are the allowable pH range and the maximum allowable concentration in ground water for the contaminants specified unless the existing condition exceeds the standard or unless otherwise provided in Subsection E of Section 20 6 2 3109 NMAC Regardless of whether there is one contaminant or more than one contaminant present in ground water, when an existing pH or concentration of any water contaminant exceeds the standard specified in Subsection A, B, or C of this section, the existing pH or concentration shall be the allowable limit, provided that the discharge at such concentrations will not result in concentrations at any place of withdrawal for present or reasonably foreseeable future use in excess of the standards of this section These standards shall apply to the dissolved portion of the contaminants specified with a definition of dissolved being that given in the publication "*methods for chemical analysis of water and waste of the U S environmental protection agency*," with the exception that standards for mercury, organic compounds and non-aqueous phase liquids shall apply to the total nonfiltered concentrations of the contaminants If the secretary determines that there is a reasonable probability of facilitated contaminant transport by colloids or organic macromolecules, or that proper filtration procedures are not being followed, the discharger may be required to test for both filtered and nonfiltered portions of inorganic contaminants to develop appropriate protocol for monitoring contaminants that have the potential to migrate through the aquifer.

A. Human Health Standards

(1) Numerical Standards

(a)	Antimony (Sb) (CAS 7440-36-0)	0 006 mg/l
(b)	Arsenic (As) (CAS 7440-38-2)	0 01 mg/l
(c)	Barium (Ba) (CAS 7440-39-3)	2 mg/l
(d)	Beryllium (be) (CAS 7440-41-7)	0 004 mg/l
(e)	Cadmium (Cd) (CAS 7440-43-9)	0 005 mg/l
(f)	Chromium (Cr) (CAS 7440-47-3)	0 05 mg/l

Received by OCD: 1/9/2025 8:05:52 PM Page 508 of 738

Released to Imaging: 1/9/2025 4:04:07 PM

91793

(g)	Cyanide (CN) (CAS 57-12-5)	0 2 mg/l
(h)	Fluoride (F) (CAS 16984-48-8)	1 6 mg/l
(i)	Lead (Pb) (CAS 7439-92-1)	0 015 mg/l
(j)	Total Mercury (Hg) (CAS 7439-97-6)	0 002 mg/l
(k)	Nitrate (NO_3 as N) (CAS 14797-55-8)	10 0 mg/l
(l)	Nitrite (NO_2 as N) (CAS 10102-44-0)	1 0 mg/l
(m)	Selenium (Se) (CAS 7782-49-2)	0 05 mg/l
(n)	Silver (Ag) (CAS 7440-224)	0 05 mg/l
(o)	Thallium (Tl) (CAS 7440-28-0)	0 002 mg/l
(p)	Uranium (U) (CAS 7440-61-1)	0 03 mg/l
(q)	Radioactivity Combined Radium-226 (CAS 13982-63-3) and Radium-228 (CAS 15262-20-1)	5 pCi/l
(r)	Benzene (CAS 71-43-2)	.0 005 mg/l
(s)	Polychlorinated biphenyls (PCB's) (CAS 1336-36-3)	0 0005 mg/l
(t)	Toluene (CAS 108-88-3)	1 mg/l
(u)	Carbon Tetrachloride (CAS 56-23-5)	. 0 005 mg/l
(v)	1,2-dichloroethane (EDC) (CAS 107-06-2)	.0 005 mg/l
(w)	1,1-dichloroethylene (1,1-DCE) (CAS 75-35-4)	0 007 mg/l
(x)	tetrachloroethylene (PCE) (CAS 127-18-4).	0 005 mg/l
(y)	trichloroethylene (TCE) (CAS 79-01-6).	0 005 mg/l
(z)	ethylbenzene (CAS 100-41-4)	0 7 mg/l
(aa)	total xylenes (CAS 1330-20-7)	0 62 mg/l
(bb)	methylene chloride (CAS 75-09-2)	0 005 mg/l
(cc)	chloroform (CAS 67-66-3)	0 1 mg/l
(dd)	1,1-dichloroethane (CAS 75-34-3)	0 025 mg/l
(ee)	ethylene dibromide (EDB) (CAS 106-93-4)	0 00005 mg/l
(ff)	1,1,1-trichloroethane (CAS 71-55-6)	0 2 mg/l
(gg)	1,1,2-trichloroethane (CAS 79-00-5)	0.005 mg/l
(hh)	1,1,2,2-tetrachloroethane (CAS 79-34-5)	0 01 mg/l
(ii)	vinyl chloride (CAS 75-01-4)	0 002 mg/l
(jj)	PAHs total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes	0 03 mg/l
(kk)	benzo-a-pyrene (CAS 50-32-8).	0 0002 mg/l
(ll)	cis-1,2-dichloroethene (CAS 156-59-2)	0 07 mg/l
(mm)	trans-1,2-dichloroethene (CAS 156-60-5)	0 1 mg/l
(nn)	1,2-dichloropropane (PDC) (CAS 78-87-5)	0 005 mg/l
(oo)	styrene (CAS 100-42-5)	0 1 mg/l
(pp)	1,2-dichlorobenzene (CAS 95-50-1)	0 6 mg/l
(qq)	1,4-dichlorobenzene (CAS 106-46-7)	0 075 mg/l
(rr)	1,2,4-trichlorobenzene (CAS 120-82-1)	0 07 mg/l
(ss)	pentachlorophenol (CAS 87-86-5)	0 001 mg/l
(tt)	atrazine (CAS 1912-24-9)	0 003 mg/l

(2) Standards for Toxic Pollutants. A toxic pollutant shall not be present at a concentration shown by credible scientific data and other evidence appropriate under the Water Quality Act, currently available to the public, to have potential for causing one or more of the following effects upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains: (1) unreasonably threatens to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring, or (2) creates a lifetime risk of more than one cancer per 100,000 exposed persons

(3) Standards for Non-Aqueous Phase Liquids. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

B. Other Standards for Domestic Water Supply

(1)	Chloride (Cl) (CAS 16887-00-6)	250.0 mg/l
(2)	Copper (Cu) (CAS 7440-50-8)	1 0 mg/l
(3)	Iron (Fe) (CAS 7439-89-6)	1 0 mg/l

Received by OCD: 1/9/2025 8:05:52 PM

(4)	Manganese (Mn) (CAS 7439-96-5)	0 2 mg/l
(5)	Phenols	0 005 mg/l
(6)	Sulfate (SO_4) (CAS 14808-79-8)	600 0 mg/l
(7)	Total Dissolved Solids (TDS) TDS	1000 0 mg/l
(8)	Zinc (Zn) (CAS 7440-66-6)	10 0 mg/l
(9)	pH	between 6 and 9
(10)	Methyl tertiary-butyl ether (MTBE) (CAS 1634-04-4)	0 1 mg/l

C. Standards for Irrigation Use - Ground water shall meet the standards of Subsection A, B, and C of this section unless otherwise provided.

(1)	Aluminum (Al) (CAS 7429-90-5)	5 0 mg/l
(2)	Boron (B) (CAS 7440-42-8)	0 75 mg/l
(3)	Cobalt (Co) (CAS 7440-48-4)	0 05 mg/l
(4)	Molybdenum (Mo) (CAS 7439-98-7)	1 0 mg/l
(5)	Nickel (Ni) (CAS 7440-02-0)	0.2 mg/l

D. For purposes of application of the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylene chloride, EDB, 1,1,2-trichloroethane and benzo-a-pyrene, shall not become effective until July 1, 2020 With regard to sites for which the secretary has approved an abatement completion report as of the effective date of this rule pursuant to 20 6 2 4112 NMAC, the amended numeric standards for arsenic, cadmium, lead, combined radium-226 & radium-228, benzene, PCBs, carbon tetrachloride, EDC, PCE, TCE, ethylbenzene, methylene chloride, EDB, 1,1,2-trichloroethane and benzo-a-pyrene shall not apply unless the secretary notifies the responsible person that the site is a source of these contaminants in ground water that pose a hazard to public health
[2-18-77, 1-29-82, 11-17-83, 3-3-86, 12-1-95, 20 6 2 3103 NMAC - Rn, 20 NMAC 6.2.III 3103, 1-15-01; A, 9-26-04, A, 12-21-18]
[Note: For purposes of application of the amended numeric uranium standard to past and current water discharges (as of 9-26-04), the new standard will not become effective until June 1, 2007.]

20.6.2.3104 DISCHARGE PERMIT REQUIRED: Unless otherwise provided by this Part, no person shall cause or allow effluent or leachate to discharge so that it may move directly or indirectly into ground water unless he is discharging pursuant to a discharge permit issued by the secretary When a permit has been issued, discharges must be consistent with the terms and conditions of the permit In the event of a transfer of the ownership, control, or possession of a facility for which a discharge permit is in effect, the transferee shall have authority to discharge under such permit, provided that the transferee has complied with Section 20 6 2 3111 NMAC, regarding transfers
[2-18-77, 12-24-87, 12-1-95, Rn & A, 20.6.2 3104 NMAC - 20 NMAC 6.2.III 3104, 1-15-01, A, 12-1-01]

20.6.2.3105 EXEMPTIONS FROM DISCHARGE PERMIT REQUIREMENT: Sections 20 6 2 3104 and 20 6 2 3106 NMAC do not apply to the following

A. Effluent or leachate which conforms to all the standards in Subsections A, B, and C of Section 20 6 2 3103 NMAC and has a total nitrogen concentration of 10 mg/l or less. To determine conformance, samples may be taken by the agency before the effluent or leachate is discharged so that it may move directly or indirectly into ground water; provided that if the discharge is by seepage through non-natural or altered natural materials, the agency may take samples of the solution before or after seepage If for any reason the agency does not have access to obtain the appropriate samples, this exemption shall not apply,

B. Effluent which is regulated pursuant to 20 7 3 NMAC, "Liquid Waste Disposal and Treatment" regulations,

C. Water used for irrigated agriculture, for watering of lawns, trees, gardens or shrubs, or for irrigation for a period not to exceed five years for the revegetation of any disturbed land area, unless that water is received directly from any sewerage system,

D. Discharges resulting from the transport or storage of water diverted, provided that the water diverted has not had added to it after the point of diversion any effluent received from a sewerage system, that the source of the water diverted was not mine workings, and that the secretary has not determined that a hazard to public health may result;

E. Effluent which is discharged to a watercourse which is naturally perennial; discharges to dry arroyos and ephemeral streams are not exempt from the discharge permit requirement, except as otherwise provided in this section,

Loc: 880
41793

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-2
SDG Number: 19-0112-49

Login Number: 41793
List Number: 1
Creator: Rodriguez, Leticia

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-41793-2
SDG Number: 19-0112-49

Login Number: 41793
List Number: 3
Creator: Thornley, Richard W

List Source: Eurofins St. Louis
List Creation: 04/04/24 03:25 PM

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark J Larson
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Generated 5/8/2024 10:26:17 AM

JOB DESCRIPTION

EBDU #37
19-0112-49

JOB NUMBER

880-43023-1

Eurofins Midland
1211 W. Florida Ave
Midland TX 79701

Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Midland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization

Holly Taylor

Generated
5/8/2024 10:26:17 AM

Authorized for release by
Holly Taylor, Project Manager
Holly.Taylor@et.eurofinsus.com
(806)794-1296

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Laboratory Job ID: 880-43023-1
SDG: 19-0112-49

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Client Sample Results 6
QC Sample Results 7
QC Association Summary 8
Lab Chronicle 9
Certification Summary 10
Method Summary 11
Sample Summary 12
Chain of Custody 13
Receipt Checklists 14

Released to Imaging: 1/9/2025 4:04:07 PM

Definitions/Glossary

Client: Larson & Associates, Inc. Job ID: 880-43023-1
Project/Site: EBDU #37 SDG: 19-0112-49

Qualifiers

Metals

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc. Job ID: 880-43023-1
Project: EBDU #37

Job ID: 880-43023-1 Eurofins Midland

Job Narrative
880-43023-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 5/3/2024 8:24 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.4°C.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Client Sample Results

Client: Larson & Associates, Inc. Job ID: 880-43023-1
Project/Site: EBDU #37 SDG: 19-0112-49

Client Sample ID: Windmill — Lab Sample ID: 880-43023-1

Date Collected: 05/02/24 13:09 **Matrix: Water**
Date Received: 05/03/24 08:24

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.220		0.00400		mg/L		05/07/24 12:00	05/07/24 18:39	1

Client Sample ID: TMW -1 — Lab Sample ID: 880-43023-2

Date Collected: 05/02/24 13:18 **Matrix: Water**
Date Received: 05/03/24 08:24

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.445		0.00400		mg/L		05/07/24 12:00	05/07/24 18:54	1

Client Sample ID: TMW -3 — Lab Sample ID: 880-43023-3

Date Collected: 05/02/24 13:28 **Matrix: Water**
Date Received: 05/03/24 08:24

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0299		0.00400		mg/L		05/07/24 12:00	05/07/24 18:56	1

Client Sample ID: TMW -21 — Lab Sample ID: 880-43023-4

Date Collected: 05/02/24 13:45 **Matrix: Water**
Date Received: 05/03/24 08:24

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0470		0.00400		mg/L		05/07/24 12:00	05/07/24 18:58	1

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: LLCS 860-158872/4-A
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 158872

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Barium			0.00400	0.003274	J	mg/L		82	50 - 150		

Lab Sample ID: MB 860-158841/1-B
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 158872

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00400	U	0.00400		mg/L		05/07/24 12:00	05/07/24 18:33	1

Lab Sample ID: LCS 860-158841/2-B
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 158872

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Barium			0.100	0.09549		mg/L		95	85 - 115		

Lab Sample ID: LCSD 860-158841/3-B
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 158872

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium			0.100	0.09538		mg/L		95	85 - 115	0	20

Lab Sample ID: 880-43023-1 MS
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Windmill
Prep Type: Dissolved
Prep Batch: 158872

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Barium	0.220		0.100	0.3177		mg/L		98	70 - 130		

Lab Sample ID: 880-43023-1 MSD
Matrix: Water
Analysis Batch: 158963

Client Sample ID: Windmill
Prep Type: Dissolved
Prep Batch: 158872

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.220		0.100	0.3228		mg/L		103	70 - 130	2	20

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Metals

Filtration Batch: 158841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	Filtration	
880-43023-2	TMW -1	Dissolved	Water	Filtration	
880-43023-3	TMW -3	Dissolved	Water	Filtration	
880-43023-4	TMW -21	Dissolved	Water	Filtration	
MB 860-158841/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
880-43023-1 MS	Windmill	Dissolved	Water	Filtration	
880-43023-1 MSD	Windmill	Dissolved	Water	Filtration	

Prep Batch: 158872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	200.8	158841
880-43023-2	TMW -1	Dissolved	Water	200.8	158841
880-43023-3	TMW -3	Dissolved	Water	200.8	158841
880-43023-4	TMW -21	Dissolved	Water	200.8	158841
MB 860-158841/1-B	Method Blank	Dissolved	Water	200.8	158841
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	200.8	158841
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	158841
LLCS 860-158872/4-A	Lab Control Sample	Total Recoverable	Water	200.8	
880-43023-1 MS	Windmill	Dissolved	Water	200.8	158841
880-43023-1 MSD	Windmill	Dissolved	Water	200.8	158841

Analysis Batch: 158963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-43023-1	Windmill	Dissolved	Water	200.8	158872
880-43023-2	TMW -1	Dissolved	Water	200.8	158872
880-43023-3	TMW -3	Dissolved	Water	200.8	158872
880-43023-4	TMW -21	Dissolved	Water	200.8	158872
MB 860-158841/1-B	Method Blank	Dissolved	Water	200.8	158872
LCS 860-158841/2-B	Lab Control Sample	Dissolved	Water	200.8	158872
LCSD 860-158841/3-B	Lab Control Sample Dup	Dissolved	Water	200.8	158872
LLCS 860-158872/4-A	Lab Control Sample	Total Recoverable	Water	200.8	158872
880-43023-1 MS	Windmill	Dissolved	Water	200.8	158872
880-43023-1 MSD	Windmill	Dissolved	Water	200.8	158872

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Client Sample ID: Windmill
Date Collected: 05/02/24 13:09
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:39	DP	EET HOU

Client Sample ID: TMW -1
Date Collected: 05/02/24 13:18
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:54	DP	EET HOU

Client Sample ID: TMW -3
Date Collected: 05/02/24 13:28
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:56	DP	EET HOU

Client Sample ID: TMW -21
Date Collected: 05/02/24 13:45
Date Received: 05/03/24 08:24

Lab Sample ID: 880-43023-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	158841	05/06/24 09:53	AGR	EET HOU
Dissolved	Prep	200.8			50 mL	50 mL	158872	05/07/24 12:00	MD	EET HOU
Dissolved	Analysis	200.8		1			158963	05/07/24 18:58	DP	EET HOU

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Laboratory: Eurofins Houston

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215	06-30-24

Method Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET HOU
200.8	Preparation, Total Recoverable Metals	EPA	EET HOU
Filtration	Sample Filtration	None	EET HOU

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: EBDU #37

Job ID: 880-43023-1
SDG: 19-0112-49

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
880-43023-1	Windmill	Water	05/02/24 13:09	05/03/24 08:24
880-43023-2	TMW -1	Water	05/02/24 13:18	05/03/24 08:24
880-43023-3	TMW -3	Water	05/02/24 13:28	05/03/24 08:24
880-43023-4	TMW -21	Water	05/02/24 13:45	05/03/24 08:24

43023

No. 3311

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to

DATE: 5/31/2024 PAGE 1 OF 1

PO# _____ LAB WORK ORDER#: _____

PROJECT LOCATION OR NAME EBDU #37

LAI PROJECT # 19-0112-49 COLLECTOR RW/DSL

TRRP report? ☐ Yes ☑ No

TIME ZONE
Time zone/State
MST/NM

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: Barium	FIELD NOTES
Windmill		5/2/24	1309	W	1				X		X	Lab Filter
TMW-1		"	1318	"	"				"		"	Direct Bill to
TMW-3		"	1328	"	"				"		"	Apache
TMW-21		"	1345	"	"				"		"	
TOTAL												

880-43023 Chain of Custody

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
[signature]	5/31/24 0824	[signature]
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

TURN AROUND TIME
NORMAL ☐
1 DAY ☑ Rush!
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP 5.5/5.4 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

Page 525 of 733
Received by OCD: 1/9/2025 8:05:52 PM
5/8/2024
Page 13 of 15
Released to Imaging: 1/9/2025 4:04:07 PM

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-43023-1
SDG Number: 19-0112-49

Login Number: 43023
List Number: 1
Creator: Vasquez, Julisa

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-43023-1
SDG Number: 19-0112-49

Login Number: 43023
List Number: 2
Creator: Baker, Jeremiah

List Source: Eurofins Houston
List Creation: 05/04/24 11:25 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
Windmill	[1] 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	[2] 09/23/2019	--	--	--	--	--	--	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**259**	688	--
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**274**	730	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**287**	930	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**252**	745	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**255**	781	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**251**	800	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	246	751	--
	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	828	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	222	738	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**256**	**1,190**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	198	508	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**401**	**1,130**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**276**	852	--
	[4] 09/07/2023	<0.00200	<0.00200	<0.00400	<0.00400	**350**	981	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**409**	**1,010**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**471**	**1,080**	--
	04/03/2024	--	--	--	--	--	--	**2.18**
	05/02/2024	--	--	--	--	--	--	0.220
TMW-1	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	--
	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	14.5	360	--
	[3] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	17.5	358	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.3	391	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	13.2	343	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	26.0	369	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	50.3	404	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	21.4	216	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	41.9	358	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**275**	845	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**277**	830	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	156	662	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00404	136	551	--
	05/02/2024	--	--	--	--	--	--	0.445
TMW-2	[2] 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	**338**	**1,220**	--
	[2] 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**307**	**1,170**	--
	[3] 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	**314**	**1,040**	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**298**	**1,050**	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**293**	**1,000**	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**267**	**1,050**	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**263**	**1,030**	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**284**	**1,270**	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**282**	**1,030**	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00400	<0.00400	**256**	**1,070**	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00400	<0.00400	239	940	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	195	985	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	211	**1,060**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	248	**1,120**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	**1,050**	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**264**	**1,100**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	249	992	
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	--
	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	180	934	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	192	967	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	211	949	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	233	944	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	202	955	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	245	**1,100**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	175	808	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	233	940	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	229	**1,020**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	240	**1,010**	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	242	**1,020**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	234	959	
	05/02/2024	--	--	--	--	--	--	0.0299
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	[3] 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	**1,020**	**2,040**	--
	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**987**	**2,300**	--
	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**834**	**1,960**	--
	[3] 06/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**745**	**1,990**	--
	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**689**	**1,990**	--
	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	**735**	**2,180**	--
	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**1,610**	**2,080**	--
	[4] 03/29/2022	<0.00200	<0.00200	<0.00200	**0.00700**	**547**	**1,930**	--
	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	**522**	**1,930**	--
	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**684**	**2,000**	--
	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**486**	**1,940**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**703**	**1,850**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**673**	**1,900**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**625**	**1,810**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**598**	**1,750**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**580**	**1,750**	
TMW-5	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,170**	**4,950**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,890**	**5,200**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**2,790**	**5,380**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,700**	**4,590**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,320**	**4,250**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,980**	**5,360**	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
TMW-6	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**941**	**3,160**	--
	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**2,270**	**3,200**	--
	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,550**	**3,260**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,630**	**2,820**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,570**	**3,070**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,500**	**3,280**	--
TMW-7	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**1,770**	**3,980**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,870**	**3,880**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,770**	**3,720**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,740**	**3,690**	--
TMW-8	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**974**	**2,410**	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,130**	**2,470**	--
	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00200	**709**	**1,840**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**655**	**1,830**	--
TMW-9	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	18.0	373	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	41.8	390	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	37.3	404	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	29.3	373	--
TMW-10	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	9.89	525	--
	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	67.0	514	--
	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	114.0	666	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	17.0	405	--
TMW-11	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**350**	**1,190**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**318**	**1,090**	--
TMW-12	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**463**	**1,520**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**448**	**1,390**	--
TMW-13	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**1,730**	**3,680**	--
	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,690**	**3,480**	--
TMW-14	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,500**	**5,140**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,810**	**2,820**	--
TMW-15	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,120**	**3,870**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**2,160**	**3,400**	
TMW-16	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	85.5	495	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	43.0	380	--
TMW-17	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,850**	**10,300**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**5,680**	**8,930**	--
TMW-18	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**2,050**	**6,430**	--

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**908**	**1,650**	--
TMW-19	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**927**	**1,860**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**553**	**1,070**	--
TMW-20	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**287**	927	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**385**	937	--
TMW-21	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**262**	885	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**310**	902	
	05/02/2024	--	--	--	--	--	--	0.0471
TMW-22	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**270**	939	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**342**	918	--
TMW-23	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**895**	**1,980**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,020**	**2,020**	--
TMW-24	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**271**	**1,050**	--
	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**330**	**1,060**	--
DUP-1 (Windmill)	[3] 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**276**	794	--
DUP-1 (Windmill)	[3] 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**278**	908	--
DUP-1 (Windmill)	[3] 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**259**	798	--
DUP-1 (Windmill)	[3] 06/10/2021	<0.00200	<0.00200	<0.00200	<0.00400	**256**	781	--
DUP-1 (Windmill)	[4] 10/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**250**	830	--
DUP-1 (Windmill)	[4] 12/22/2021	<0.00200	<0.00200	<0.00200	<0.00400	243	796	--
Dup-1 (TMW-2)	[4] 03/01/2022	<0.00200	<0.00200	<0.00200	<0.00400	**297**	**1,010**	--
Dup-2 (Windmill)	[4] 03/03/2022	<0.00200	<0.00200	<0.00200	<0.00400	**491**	787	--
Dup-1 (Windmill)	[4] 05/23/2022	<0.00200	<0.00200	<0.00200	<0.00400	215	729	--
Dup-1 (Windmill)	[4] 08/16/2022	<0.00200	<0.00200	<0.00200	<0.00400	**283**	**1,120**	--
Dup-1 (TMW-5)	[4] 12/15/2022	<0.00100	<0.00100	<0.00100	<0.00100	**1,410**	**4,520**	--
Dup-1 (Windmill)	[4] 03/14/2023	<0.00100	<0.00100	<0.00100	<0.00100	**413**	**1,130**	--
Dup-1 (Windmill)	[4] 06/22/2023	<0.00200	<0.00200	<0.00200	<0.00200	**273**	855	--
Dup-1 (TMW-5)	[4] 09/06/2023	<0.00200	<0.00200	<0.00200	<0.00400	**3,030**	**5,850**	--
Dup-1 (TMW-17)	[4] 12/20/2023	<0.00200	<0.00200	<0.00200	<0.00400	**5,830**	**10,300**	--
Dup-2 (TMW-2)	[4] 12/21/2023	<0.00100	<0.00100	<0.00100	<0.0100	**265**	**1,010**	--
Dup-1 (TMW-3)	[4] 03/14/2024	<0.00200	<0.00200	<0.00200	<0.00400	**328**	986	--
Dup-2 (TMW-14)	[4] 03/15/2024	<0.00200	<0.00200	<0.00200	<0.00400	**1,330**	**2,530**	--

Notes:
('): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).
([2]): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([3]): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([4]): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
<: concentration is less than analytical method reporting limit (RL).
*: NMWQCC Human Health Standard
**: NMWQCC Domestic Water Quality Standard
--: no data available
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
Bold and highlighted denotes analyte concentration exceeds WQCC domestic water quality standard

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*

Table 2
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU #37
Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Barium (mg/L)
WQCC Standard:		**0.005*	**1*	**0.7*	**0.62*	***250*	***1,000*	*2.0*

Table 3

20.6.2.3101 NMAC

Laboratory Analytical Data Summary

Windmill, EBDU 37, Lea County, New Mexico

20.6.2.3103 NMAC - Human Health Standards							
A.	**Parameter**	**mg/L**	**4/3/2024**	**5/2/2024**			
(a)	Antimony	0.006	<0.00400	--			
(b)	Arsenic	0.01	<0.00400	--			
(c)	Barium	2.0	**2.18**	*0.220			
(d)	Beryllium	0.004	<0.00200	--			
(e)	Cadmium	0.005	<0.00200	--			
(f)	Chromium	0.05	<0.00400	--			
(g)	Cyanide	0.2	<0.00500	--			
(h)	Fluoride	1.6	<1.00	--			
(i)	Lead	0.015	<0.00200	--			
(j)	Mercury (Total)	0.002	<0.000200	--			
(k)	Nitrate	10.0	**2.78**	--			
(l)	Nitrite	1.0	<0.100	--			
(m)	Selenium	0.05	<0.00200	--			
(n)	Silver	0.05	<0.00200	--			
(o)	Thallium	0.002	<0.00200	--			
(p)	Uranium	0.03	**0.00315**	--			
(q)	Radioactivity (combined R226 and R228)	5.0	**0.945**	--			
(r)	Benzene	0.005	<0.00100	--			
(s)	Polchlorinated biphenyls (PCB)	0.0005	<0.000262	--			
(t)	Toluene	1.0	<0.00100	--			
(u)	Carbon Tetrachloride	0.005	<0.00500	--			
(v)	1,2-dichloroethane (EDC)	0.005	<0.00100	--			
(w)	1,1-dichloroethylene	0.007	<0.00100	--			
(x)	Tetrachloroethylene (PCE)	0.005	<0.00100	--			
(y)	Trichloroethylene (TCE)	0.005	<0.00500	--			
(z)	Ethylbenzene	0.70	<0.00100	--			
(aa)	Xylenes (Total)	0.62	<0.0100	--			
(bb)	Methylene Chloride	0.005	<0.00500	--			
(cc)	Chloroform	0.1	<0.00100	--			
(dd)	1,1-Dichloroethane	0.025	<0.00100	--			
(ee)	Ethylene Dibromide (EDB)	0.00005	<0.00500	--			
(ff)	1,1,1-trichloroethane	0.20	<0.00100	--			
(gg)	1,1,2-trichloroethane	0.005	<0.00100	--			
(hh)	1,1,2,2-tetrachloroethane	0.01	<0.00100	--			
(ii)	vinyl chloride	0.002	<0.002	--			
(jj)	PAHs: total naphthalene plus monomethylnapthalenes	0.03	<0.571	--			
(kk)	benzo-a-pyrene	0.0002	<0.571	--			
(ll)	cis-1,2-dichloroethene	0.07	<0.00100	--			
(mm)	trans-1,2-dichloroethene	0.1	<0.00100	--			
(nn)	1,2-dichloropropane (PDC)	0.005	<0.00500	--			
(oo)	Styrene	0.1	<0.00100	--			
(pp)	1,2-dichlorobenzene	0.60	<0.00100	--			
(qq)	1,4-dichlorobenzene	0.075	<0.00100	--			
(rr)	1,2,4-trichlorobenzene	0.07	<0.00500	--			
(ss)	pentachlorophenol	0.001	<1.14	--			
(tt)	atrazine	0.003	<0.500	--			

Table 3
20.6.2.3101 NMAC
Laboratory Analytical Data Summary
Windmill, EBDU 37, Lea County, New Mexico

20.6.2.3103 NMAC - Standards for Domestic Water Supply							
B.	**Parameter**	**mg/L**	4/3/2024				
(1)	Chloride	250.0	**440**	--			
(2)	Copper	1.0	**0.00509**	--			
(3)	Iron	1.0	<0.100	--			
(4)	Manganese	0.2	<0.00200	--			
(5)	Phenols	0.005	<0.0100	--			
(6)	Sulfate	600.0	**56.5**	--			
(7)	Total Dissolved Solids (TDS)	1,000.0	**1,000**	--			
(8)	Zinc	10.0	**0.00465**	--			
(9)	pH	6 - 9	7.3	--			
(10)	Methy tertiary-butyl ether (MTBE)	0.1	<0.00500	--			
20.6.2.3103 NMAC - Standards for Irrigation Use							
B.	**Parameter**	**mg/L**	4/3/2024	**5/2/2024**			
(1)	Aluminum	5.0	<0.0200	--			
(2)	Boron	0.75	**0.154**	--			
(3)	Cobalt	0.05	<0.00200	--			
(4)	Molybdenum	1.0	<0.00200	--			
(5)	Nickel	0.2	<0.00200	--			

Notes: Analysis performed by Eurofins Xenco Laboratories, Midland, Texas, by EPA SW-846 Methods.
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
< Indicates analyte concentration is less than reporting limit (RL)
Bold indicates analyte concentration exceeds the reporting limit (RL) but below the regulatory limit
Bold and highlighted indicates analyte concentration exceeds RL and regulatory limit

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

Operator:	OGRID:
APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	873
	Action Number: 342416
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	As a result of significant differences in groundwater flow direction at the source area shown between Figure 5a and Figure 5b from December 2023 to March 2024 in the SOW, a denser network of monitoring wells is necessary to better characterize the mass source in the area. Apache Corporation must develop the following within ninety (90) days of this approval date for additional well borings and the subsequent conditions of approval below. The coordinates for each additional monitoring well required for installation by OCD are included in conditions 1. (a through n). 1a. TMW-30 shall be installed approximately 430 feet east of the TMW-28 well proposal, and 50 feet south. Better defining background concentrations. (32.482591, -103.120003)	7/24/2024
michael.buchanan	1b. TMW-31 shall be installed approximately 350 feet northwest of TMW-22. Reduces the distance between TMW-12 and TMW-22 for more precise characterization. (32.481806, -103.119008) 1c. TMW-32 shall be installed approximately 275 feet east of TMW-12. Reduces distance between adjacent wells for more precise characterization. (32.481354, -103.119876) 1d. TMW-33 shall be installed approximately 415 feet southwest of TMW-22. Reduces the distance between TMW-21 and TMW-13 for more precise characterization. (32.480643, -103.118728) 1e. TMW-34 shall be installed approximately 350 feet west of TMW-14. Achieves more characterization near TMW-17 which conveys a high chloride level. (32.479492, -103.120080) 1f. TMW-35 shall be installed approximately 190 feet northeast of TMW-15 Addresses more necessary characterization near TMW-17 (32.479341, -103.119302)	7/24/2024
michael.buchanan	1g. TMW-36 shall be installed approximately 175 feet southwest of TMW-17. Addresses need for more characterization near TMW-17 (32.478749, -103.120871) 1h. TMW-37 shall be installed approximately 275 feet southeast of TMW-17. Addresses need for more characterization near TMW-17. (32.478577, -103.119850) 1i. TMW-38 shall be installed approximately 300 feet northwest of proposed TMW-26. More characterization and assessment needed in the southeast region of the release area. (32.477683, -103.119429) 1j. TMW-39 shall be installed approximately 200 feet southeast of TMW-18. The release area in southeast area needs tighter monitoring network of characterization and assessment for chloride. (32.477447, -103.120144) 1k. TMW-40 shall be installed approximately 200 feet southeast of TMW-16. Addresses lack of characterization and assessment between MW-19 and MW-18 (32.477640, -103.121407)	7/24/2024
michael.buchanan	1l. TMW-41 shall be installed approximately 275 feet east of TMW-24. Addresses lack of characterization and assessment between TMW-24 and TMW-23 (32.476499, -103.121560) 1m. TMW-42 shall be installed approximately 220 feet east of TMW-23. Addresses lack of characterization and assessment between TMW-25 and TMW-26 (32.476456, -103.119774) 1n. TMW-42 shall be installed approximately 75 feet NE of TMW-13. Addresses lack of characterization between TMW-13 and TMW-22. (32.4811185, -103.1189847) 2. A current and up-to-date site map showing proposed monitoring wells in the SOW, and the additional thirteen (14) monitoring wells prescribed by OCD for further characterization and assessment of chlorides and BTEX. 3. Any quarterly monitoring collected to the present (summary table and lab analyses are sufficient).	7/24/2024
michael.buchanan	4. The windmill well must be sampled and analyzed for barium in the next round of groundwater monitoring. 5. Both TMW #5 and TMW #17 must be sampled for all human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC as these two wells had the highest concentrations of contamination. 6. All proposed monitoring wells in the Scope of Work for Additional Investigation and the additional required monitoring wells by OCD must have soil sample analyses for TPH, chloride, and BTEX by EPA Methods 8260, EPA Method 300 and EPA Method 8015. Five (5) foot interval composite samples are acceptable. 7. Drilling for all wells is required to commence within ninety (90) days from this date of approval.	7/24/2024
michael.buchanan	8. 19.15.5.11 ENFORCEABILITY OF PERMITS AND ADMINISTRATIVE ORDERS: A person who conducts an activity pursuant to a permit, administrative order or other written authorization or approval from the division shall comply with every term, condition and provision of the permit, administrative order, authorization or approval. [19.15.5.11 NMAC - Rp, 19.15.1.41 NMAC, 12/1/2008]	7/24/2024

APACHE EXHIBIT B-4

5847 50th Street
Lubbock, TX 79424
P (806) 300-0140
F (806) 797-0947
Terracon.com

September 23, 2024

New Mexico Oil Conservation Division (NMOCD)
EMNRD/OCD
8801 Horizon Blvd NE, Suite 260
Albuquerque, NM 87113

Attn: Mr. Michael Buchanan
P 505-490-0798
E Michael.buchanan@emnrd.nm.gov

RE: Additional Groundwater Delineation Work Plan
Apache Corporation
EBDU #37
Case No. (1R-5636), Incident ID NDHR192214227
Lea County, New Mexico
Terracon Project No. KH247030

Dear Mr. Buchanan:

Terracon Consultants, Inc. (Terracon) and Apache Corporation (Apache) have prepared this work plan describing additional site investigation activities planned for the above-reference site. The scope of work is intended to provide additional information to delineate the extent of groundwater impacts and provide additional information on the hydraulic properties of the groundwater system.

Additional Monitoring Wells

Seven additional monitoring wells will be installed as described below:

- TMW-25 (32.475248°, -103.121412°) will provide downgradient delineation
- TMW-26 (32.477315°, -103.119178°) will provide downgradient and lateral delineation on the southeast edge of the plume
- TMW-27 (32.479989°, -103.120675°) will serve to confirm the chloride plume is continuous between the source (near TTMW-7) and TTMW-17,which has shown elevated chlorides in recent sampling. TMW-27 will be completed as a six-inch diameter well suitable for use as a recovery well if needed.
- TMW-28 (32.482492°, -103.121341°) and TMW-29 (32.481836°, -103.119511°) will provide upgradient delineation. These wells will be located approximately 750 feet (TMW-28) and 550 feet (TMW-29) upgradient of the source. The average of these two wells is intended to serve as representative background conditions.
- TMW-30 (32.477428°, -103.120114°) will be located approximately 200 feet southeast of TMW-18 to provide information on stratigraphy and groundwater chemistry in the space between current TMW-18, TMW-23, and proposed TMW-26. This is the location identified as TMW-39 from the OCD approval letter.
- TMW-31 (32.476425°, -103.119734°) will provide downgradient and lateral (southeast) delineation of the plume. This is the location identified as TMW-42 from the OCD approval letter.
- At each of the monitoring well locations soil samples will be collected at five-foot intervals and will be submitted to a laboratory for analyses for TPH, chloride, and BTEX by EPA Methods 8260, EPA Method 300 and EPA Method 8015.

Explore with us

Soil Borings

Four soil borings will be advanced to evaluate potential source areas for chlorides. Precise locations will be determined in consultation and agreement with NMOCD. Soil samples from the borings will be analyzed in the field using titration methods to aid in directing the field work. Borings will be advanced to a depth of 30' and sampling will cease if no samples are found above RALs.

Groundwater Sampling

- Two groundwater sampling events for all wells and the windmill will be done in September and December. The September event will sample the existing monitoring wells and the windmill well. The December sampling event will include the newly installed seven wells as well as the existing monitoring wells and the windmill well.
- Samples from all wells will be analyzed for Chlorides and TDS
- Samples from the newly installed seven wells will also be analyzed for BTEX/TPH. If these parameters are below sample detection limits as they have been in all wells sampled to date, then future sampling events at these locations will be for chloride and TDS.
- Samples from the Windmill Well, TMW-5 and TMW-17 will be sampled for the human health standard constituents in the NM WQCC list in subsections A, B and C of 20.6.2.3103 NMAC.
- Samples from the Windmill Well, TMW-1, TMW-3, and TMW-21 will also be sampled for Barium
- Prior to the first sampling event, TMW-17 will be purged dry, to the maximum extent possible, to ensure water being sampled is formation water and not related to water introduced when the well was installed.

Aquifer Characterization

A pump test will be performed at TMW-27 to gauge the characteristics of the aquifer. The well will be pumped for 24-48 hours. Drawdown will be measured in the pumping well and select monitoring wells using pressure transducers. Evaluation of the data will provide information needed to evaluate the effectiveness and requirements for future remedial activities.

Field Methods

The monitoring wells will be installed using air rotary drilling techniques. Precise location, depth and screened intervals may be adjusted in the field based on site conditions and observed groundwater levels while drilling.

Monitoring Well	Anticipated Depth to Groundwater (feet bgs)	Approximate well Depth* (feet bgs)	Approximate Screened Interval (feet bgs)
TMW-25	60	80	60 - 80
TMW-26	60	80	60 – 80
TMW-27 (6" – Well)	55	95	75 – 95
TMW-28	55	75	55 – 75
TMW-29	60	80	60 – 80
TMW-30	60	80	60 – 80
TMW-31	60	80	60 – 80

All monitoring wells with the exception of TMW-27 (RW-1) will be constructed with 20 feet of 2-inch diameter, 0.010-inch machine-slotted polyvinyl chloride (PVC) well screen with a threaded bottom cap and 2-inch diameter, threaded, flush-joint PVC riser pipe to the surface. The annular space will be backfilled with pre-sieved 20/40-grade silica sand around the well screen from the bottom of the boring to approximately 2 feet above the top of the well screen. A minimum of 2 feet of hydrated bentonite pellets will be placed above the sand pack and cement/bentonite slurry to the surface. The wells will be completed with a 4-inch diameter above grade protective casing set in a concrete pad. The locations of the proposed monitoring wells are presented in the attached Exhibit 1. The new monitoring wells will be developed by surging and removing groundwater until fluids appear relatively free of fine-grained sediment.

TMW-27 will be completed using 6" diameter 0.035 continuous slot screen with 8/16 Brady Sand filter pack. We anticipate installing a 20' length screen as shown in the table above but will evaluate more carefully as we design the aquifer test.

Groundwater samples will be collected using HydraSleeve passive samplers. The samplers will be introduced one day, then samples will be retrieved the following day. The HydraSleeve will be set up to sample the lower 10 feet of each well.

Investigation-Derived Waste (IDW)

The proposed monitoring wells will be located in areas of the site removed from the spill; therefore, soils are not anticipated to be impacted. The soil cuttings generated during installation will be dispersed at the location of each respective proposed monitoring well. Groundwater collected during well development and from the purging and sampling process will be collected in a poly tank and left on-site until lab results are analyzed to determine a suitable alternative for disposition.

Schedule

The well installation and sampling event is scheduled to begin on the week of October 15, 2024 and anticipated to be completed October 25, 2024. However, initiation of the work is contingent on obtaining a drilling permit from the New Mexico Office of State Engineer. Should you have any questions regarding this work plan, please contact me at (612) 865-4899 or John.Grams@terracon.com.

Sincerely,
Terracon

John Grams, P.G. (Texas)
Project Hydrogeologist

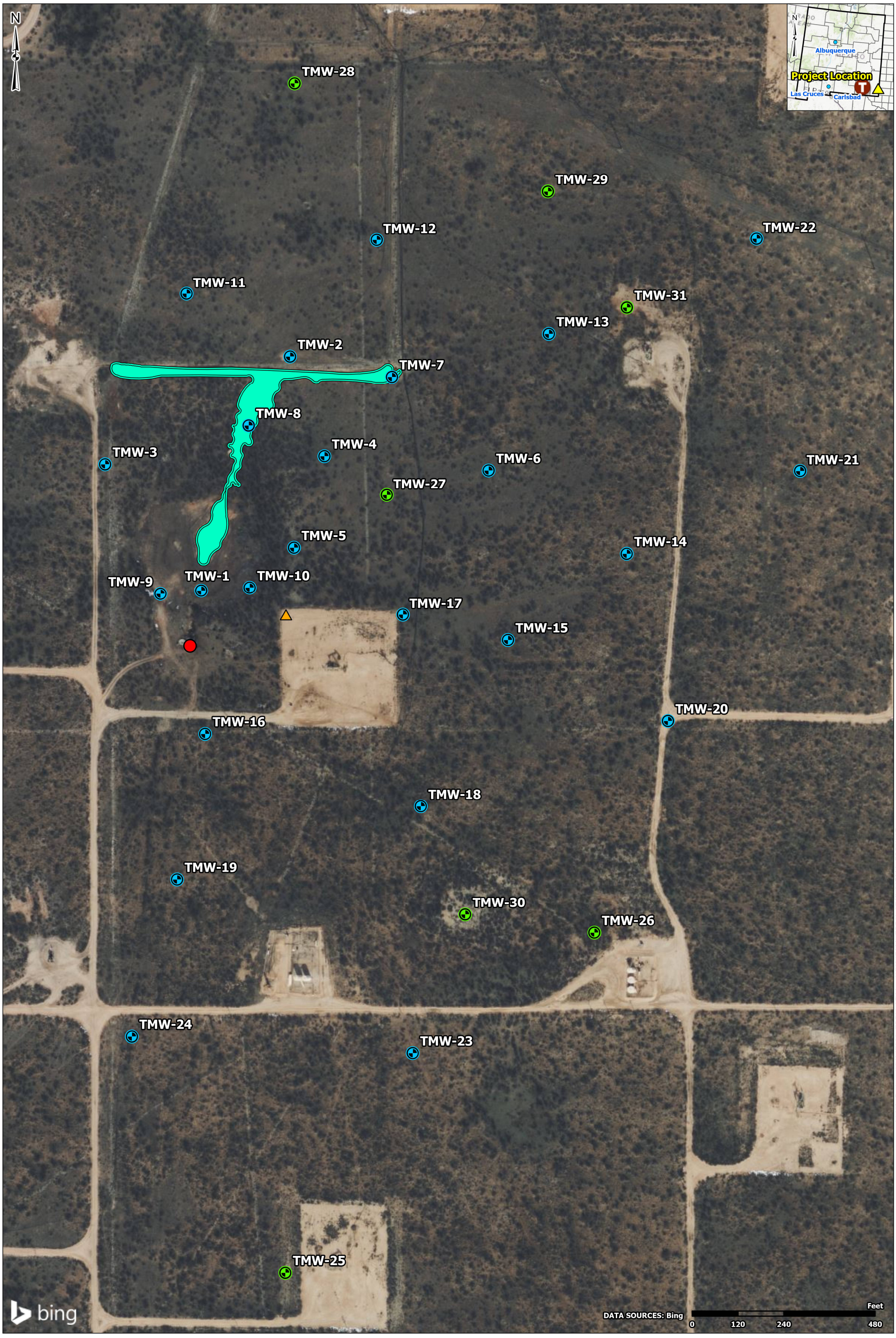
Joseph Guesnier
Office Manager, Carlsbad, NM

cc: Barrett Bole, Apache Corp.

Attachment – Exhibit 1, Site Map

EXHIBIT 1

SITE MAP



- Inferred Release
- Existing Monitoring Well
- Proposed Monitoring Well
- Static Control GPS
- Windmill

Project No.:	KH247030
Date:	Sep 09 2024
Drawn By:	JWL
Reviewed By:	JRG

Terracon
4526 W Pierce St
Carlsbad, NM
PH. 806-300-0140 terracon.com

Well Location Map

EBDU 37
32.4807053, -103.123085
Apache Corporation
Eunice, Lea County, New Mexico

Exhibit

1

C:\GIS_Projects\KH247030_EBDU_37\Maps\KH247030_EBDU_37\KH247030_EBDU_37.aprx

John C. Grams, P.G.

SENIOR GEOLOGIST / ENVIRONMENTAL DEPARTMENT MANAGER

PROFESSIONAL SUMMARY

Mr. Grams has over 30 years' experience working in the oil & gas industry and environmental consulting. Areas of expertise include soil & ground water remediation, operational compliance, permitting, emergency response, emergency planning & drills, and oil & gas facility operations. John helps clients by leveraging his broad background in industry and consulting to understand and frame solutions to environment related business problems. He is skilled at listening to a client's challenges, then designing and implementing a solution to help the client achieve their objectives.

PROJECT EXPERIENCE

REMEDIATION

Project Director
Oil & Gas Site Investigation and Remediation

Provide senior review, direction, and project QA/QC on numerous projects involving the release of crude oil and/or produced water at oil & gas production facilities in Texas and New Mexico. Clients include major oil companies and smaller independent producers.

Project Manager
Chloride Groundwater Investigation | Railroad Commission of Texas

Project Manager for investigation into source(s) of chlorides that had impacted two private wells. Area was formerly a productive oil & gas field, with five former well locations in the immediate vicinity of the site. Investigation into soil, shallow groundwater, and deep groundwater is ongoing.

Project Manager
Litigation Support | Independent Oil & Gas Producer

Provide planning and field support on project investigating the status and potential environmental impacts related to plugged and abandoned oil wells.

Project Manager
Chloride Groundwater Investigation | Independent Oil & Gas Producer

Coordinate field investigation, data analysis, and reporting for a project involving a release of produced water which impacted a drinking water aquifer.

Project Manager
Spring Valley Terminal | BP/Amoco

Project Manager for investigation and corrective action at a bulk terminal subject to state consent order. Challenges of the project resulted from gasoline and diesel fuel impacts to a fractured limestone aquifer with complicated hydrogeology, a strong downward vertical component of flow, and the existence of high permeability pathways for horizontal migration at depth. Free phase product was present at depths greater than 250' at the source of the contamination, while MTBE had migrated to over 1 mile from site. Several potable wells were impacted by contaminants and required replacement. As Project Manager, Mr. Grams prepared numerous communications with the state, prepared community outreach newsletters, coordinated client communications, facilitated meetings, and prepared annual budgets and lifecycle spending forecasts. Field work included installation of multi-level sampling wells (Westbay and FLUTe systems), mapping of surficial geology, completing a sodium bromide tracer study, redesign of the terminal's surface water management system, soil excavation, and installation and operation of remediation systems at two distinct areas of the terminal.

Project Manager
Superior Terminal | BP/Amoco

Project Manager for investigation and corrective action at bulk distribution terminal. Challenges of the project included extensive history of operations going back to the early 1900's, history of rail car loading/unloading and rail car maintenance facility, low permeability clay with interbedded sands, and proximity to Lake Superior. Free phase hydrocarbons were present over an area of approximately 20

EDUCATION

Master of Science,
Geology/Geochemistry,
Stony Brook University

Bachelor of Science,
Geology,
University of Minnesota Duluth

CERTIFICATIONS

Registered Professional Geologist:
Texas #15324
Minnesota #30747

40-Hour HAZWOPER

ICS 100, 200, 300, 700, Planning Section Chief Training

PEC Learn: H_2S Clear, Safeland USA

AFFILIATIONS

API, ILTA, AIPG

WORK HISTORY

Terracon Consultants, Inc.,
Environmental Dept. Manager
2022 - Present

GHD
Business Group Lead – Emergency Preparedness & Response
2021-2022

Wood Group/Foster Wheeler/Amec
Principal Consultant & Midstream Segment Lead
2014-2020

Antea Group
General Manager, Project Manager, Hydrogeologist
1999 – 2014 and 1988-1992.

BP Amoco
Environmental Coordinator
Terminal Manager
Business Analyst
1992 - 1999

APACHE EXHIBIT C

acres, with observed hydrocarbon up to 12' thick in wells. Mr. Grams prepared client and regulatory communications, community outreach letters, budgets, and lifecycle spending forecasts. Work at the site included decommissioning unused pipelines, pipe manifolds, and process tanks, soil excavation, passive soil venting, vacuum assisted product recovery, and dual phase recovery.

Project Manager / Hydrogeologist
Underground Storage Tank Projects

Planned and executed all phases of environmental field work including surface sediment sampling, soil vapor investigations, soil borings, monitoring wells, geoprobe, potable supply wells, vapor investigations in buildings and utilities, and various field analytical techniques. Designed, conducted, and analyzed results from draw down tests in monitoring wells, pumping tests in recovery wells, and dewatering activities during excavation projects. Prepared conceptual design for soil and ground water remediation systems, including soil vapor extraction, dual phase liquid recovery, air sparging, and excavations and worked with engineers on final design and system construction.

Project Manager

Liability Estimation and Risk Transfer

Coordinated due diligence activities, completed lifecycle cost models, and negotiated pricing with insurers and clients for two environmental risk transfer projects involving hundreds of retail service stations. One portfolio was in the Eastern U.S. and the other was in Central U.S.

Project Manager
Environmental Business Manager | BP

Three-year assignment working as an outsourced Environmental Business Manager with legal delegation of authority to manage environmental remediation projects on behalf of BP.

- Responsible for a portfolio of 400+ retail and terminal facilities over a 15-state area
- Worked with BP legal on comeback sites,
- Prepared annual liability estimate used to set reserves
- Managed annual budgeting and reporting
- Implemented BP safety standards across consultant and contractor base
- Managed environmental work done by other consultants

EMERGENCY PLANNING AND RESPONSE

Planning Section Chief
Gasoline Release | Ford Motor Company

Served as planning section chief within a Unified Command structure following a gasoline release that resulted in evacuation of 500 residential properties, a number of businesses, and shutdown of a Ford auto manufacturing plant. Responsible for coordinating incident information, facilitating daily briefing schedule, and preparation of daily incident action plans.

Project Director
Refined Product Release | ExxonMobil PL

Project director for an emergency response to a pipeline release in Northeast Houston. GHD provided air monitoring services in the work area and surrounding community on 24/7 basis for three weeks with daily reporting to support regulatory communications.

Project Director
Refined Product Release | Buckeye Pipeline

Project director and client account manager for an emergency response to a pipeline release in Eastern Wisconsin that threatened the aquifer for a community that relied upon private water supply wells. Challenging elements to the response included requirements to sample over 300 residential wells, repeat sampling with requirement to make data available to the public within 48 hours, fractured rock groundwater system, and intense public scrutiny of the incident.

Project Manager
Tabletop Spill Drills | Buckeye | Illinois

Completed the design, completion and documentation for tabletop exercises at pipeline terminals in Illinois. Developed the spill scenarios, drill manual and participants guide, facilitated the drills, and prepared documentation following completion of the drills.

Incident Commander
Jamestown Terminal | BP Amoco | N.D.

Served as Incident Commander for the oil spill response team at a refined products terminal in North Dakota. Supervised required OPA90 compliance activities such as employee training, tabletop drills, and equipment deployment drills.

Project Manager
Facility Response Plans | Amoco Oil Co. Upper Midwest Terminal Operations

Mr. Grams had compliance responsibility for 10 petroleum bulk terminals during the initial rollout of the Oil Pollution Act of 1990. In this capacity he prepared Facility Response Plans (FRP) for the 10 facilities, including EPA, DOT and Coast Guard jurisdictional locations. The initial plans were developed to comply with statutory requirements and were later modified to comply with EPA's late release of regulations under 40 CFR Part 112. Work required defining worst case scenarios, completing spill trajectory planning, and securing response resources necessary to respond to various spill scenarios. Received reward and recognition for effective implementation of this program under tight time constraints. Also developed emergency training and drill programs and coordinated annual tabletop drills to comply with the OPA90 requirements.

Project Director
Emergency Response Program Development Various Clients

Developed an emergency response program to provide consulting support to oil & gas and railroad clients. The program helped clients through effective response management, reduced risk, and reduced spending on numerous incidents at terminals, pipelines and railyards.

COMPLIANCE AND RISK MANAGEMENT

Project Director
Standard Operating Procedures | BP, Buckeye, and Tesoro

Project director for program preparing operational procedures covering a range of tasks at terminal and pipeline facilities. Covered tasks included 80+ operations activities such as pipeline receipts, tank truck loading, additive receipts, injector calibrations, meter proving, and others. This work included field review of procedures with client subject matter experts (SMEs), technical writing of the plans, and verification of procedure adequacy with client SMEs.

Project Manager
Tank Overfill Protection | BP | US Pipelines & Logistics

What Project manager for a multi-year project assisting a major oil company to evaluate, design, and implement a comprehensive program for eliminating overfills of above ground tanks at crude oil and refined product terminals. Work included comprehensive review of industry standards in U.S. and U.K., preparation of a Tank Overfill Prevention corporate policy document, preparation of a corporate level standard operating procedure which was used as a template for all facility specific SOPs, evaluation of tank gauging and monitoring equipment alternatives, and preparation of training materials.

Project Manager
Environmental Management Plans | BP

Developed the format and served as project manager for the preparation of comprehensive compliance management plans for 23 refined products terminals. The plans evaluated periodic and event-based requirements contained in applicable local, state and federal regulations, permits and other compliance plans and documents. The information was presented in a clear format for implementation by the terminal operations teams.

Senior Advisor
Railroad Leased Properties Assessment | Union Pacific Railroad

Senior Advisor for a project which assessed risk associated with hundreds of leased properties owned by the railroad. Risk assessment took into account factors including property use, financial strength of lessee, physical characteristics of the site, surrounding land use, state regulatory environment, and lease terms. Resultant categorization of site risk allowed the client to prioritize spending to reduce risk exposure.

Senior Advisor
Gray Oak Pipeline | Phillips 66

Provided senior consulting support on Gray Oak Pipeline including project staffing & execution, project deliverables tracking, weekly reporting, and strategic support with the project leadership team. For this project, Wood provided permitting support for the entire project including wetland delineations, threatened and endangered species surveys, cultural resource surveys, GIS analyses, Section 404 Nationwide permits with the US Army Corps of Engineers (USACE). The Gray Oak Pipeline is an approximate 800-mile crude oil pipeline for the southern New Mexico border to southeast of Houston with a branch to Corpus Christi. Most of the pipeline consisted of 30-inch coated steel pipe with smaller diameter pipe used in several areas. In addition to the pipeline, there are seven large facilities with storage tanks, and a number of smaller facilities associated with pump stations.

1RP-5636
Annual Groundwater Monitoring Report
(December 2019 to December 2020)
East Blinebry Drinkard Unit #37
Lea County, New Mexico

Latitude: N 32.47956°
Longitude: W -103.12206°

LAI Project No. 19-0112-49

December 23, 2020

Prepared for:
Apache Corporation
303 Veterans Airpark Lane
Midland, Texas 79705

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 202
Midland, Texas 79701

Mark J. Larson, P.G.
Certified Professional Geologist #10490

Daniel A. St. Germain
Staff Geologist

APACHE EXHIBIT C-1

This Page Intentionally Left Blank

Table of Contents

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2

2.1 Background 2

2.2 Monitoring Well Installations 3

3.0 GROUNDWATER MONITORING 3

3.1 Depth to Groundwater and Groundwater Potentiometric Elevation 3

3.2 Groundwater Sampling and Laboratory Analysis 4

3.2.1 Organic Analysis 4

3.2.2 Inorganic Analysis 4

4.0 CONCLUSIONS 5

Tables

Table 1 Monitor Well Construction and Gauging Summary
Table 2 Groundwater Sample Analytical Data Summary

Figures

Figure 1 Topographic Map
Figure 2 Aerial Map
Figure 3a Groundwater Potentiometric Map, September 30, 2020
Figure 3b Groundwater Potentiometric Map, December 7, 2020
Figure 4a Chloride Concentration in Groundwater Map, September 23, 2019
Figure 4b Chloride Concentration in Groundwater Map, December 26, 2019
Figure 4c Chloride Concentration in Groundwater Map, September 30, 2020
Figure 4d Chloride Concentration in Groundwater Map, December 7, 2020
Figure 5a TDS Concentration in Groundwater Map, September 23, 2019
Figure 5b TDS Concentration in Groundwater Map, December 26, 2019
Figure 5c TDS Concentration in Groundwater Map, September 30, 2020
Figure 5d TDS Concentration in Groundwater Map, December 7, 2020

Appendices

Appendix A Initial C-141
Appendix B OCD Communications
Appendix C Laboratory Reports

1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this annual groundwater monitoring report on behalf of Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents quarterly (4 times per year) laboratory analysis of groundwater samples collected from monitor wells (TMW-1, TMW-2, TMW-3, TMW-4) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°.

The following groundwater monitoring activities occurred between September 2019 and December 2020:

- **September 23, 2019**
  - Develop monitoring wells TMW-1 and TMW-2
  - Gauge depth to groundwater and collect groundwater samples from monitoring wells TMW-1 and TMW-2
- **December 26, 2019**
  - Gauge depth to groundwater and collect groundwater samples from monitoring wells TMW-1 and TMW-2
- **September 30, 2020**
  - Develop monitoring wells TWM-2 and TMW-3
  - Gauge depth to groundwater and collect groundwater samples from monitoring wells TMW-1 through TMW-4
- **December 7, 2020**
  - Gauge depth to groundwater and collect groundwater samples from monitoring wells TMW-1 through TMW-4

The following observations are documented in this report:

- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- Two (2) monitoring wells (TMW-3 and TMW-4) were installed and developed on September 19 and 29, 2020, respectively.
- BTEX was not reported above the analytical method reporting limits (RL) or Ne Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples collected during 2019 and 2020 groundwater sampling events.
- Chloride was reported above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in groundwater samples collected from wells TMW-2, TMW-4, and the windmill.
- TDS was reported above the WQCC domestic water quality standard of 1,000 mg/L in groundwater samples collected from wells TMW-2 and TMW-4.

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TWM-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS. Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The OCD will be notified immediately upon receipt laboratory analysis with significant increase of analyte concentrations.

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI), on behalf of Apache Corporation (Apache), has prepared this annual groundwater monitoring report for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents the quarterly (4 times pe year) collection and laboratory analysis of groundwater samples from four (4) monitor wells (TMW-1, TMW-2, TMW-3, TMW-4) and a windmill at East Blinebry Drinkard Unit (EBDU) #37 located in Lea County, New Mexico. The legal description is Unit E (SW/4, SW/4), Section 13, Township 21 South and Range 37 East. The geodetic position is North 32.479569° and West -103.122061°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

2.1 Background

The spill originated from a flowline at a pipeline junction located about 720 feet east from Well #37. Produced fluids (oil and produced water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown. The spill is designated as a major release due to the unknown volume of the release. The spill covered an area measuring about 31,320 square feet or about 0.72 acres. The initial C-141 was submitted on July 26, 2019 and was assigned remediation permit number 1RP-5636. Appendix A presents the initial C-141.

On October 29, 2019, Apache submitted to the OCD a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico, October 29, 2019". On December 23, 2019, OCD approved an addendum to the remediation plan based on a telephone call on December 20, 2019, with the following conditions:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered.
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs.
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient.
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019.
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20-mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil.
- Seed Area 1 and Area 2 following remediation according to landowner requirement.
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Appendix B presents the OCD communications.

2.2 Monitoring Well Installations

On September 29, 2019, Scarborough Drilling Inc. (SDI), under LAI supervision, installed two (2) monitoring wells (TMW-1 and TMW-2). Monitoring wells TMW-3 and TMW-4 were repositioned to avoid removing thick vegetation and/or crossing underground pipelines. Monitoring well TMW-3 was repositioned about 100 feet west from its original location. Monitoring well TMW-4 was repositioned about 30 feet east from its original location. OCD approved the relocation of the monitoring wells September 22, 2020. Appendix B presents OCD communications.

Monitoring wells TMW-3 and TMW-4 were drilled to approximately 68.41 feet bgs and 70.09 feet bgs, respectively. Both wells were completed with two (2) inch threaded schedule 40 PVC casing and approximately twenty (20) feet of 0.01-inch factory slotted screen. The screens were positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the well screens to about two (2) feet above the screens. The remaining annulus above the screens was filled to about 1-foot bgs with bentonite chips and hydrated with potable water. The wells are secured with locking steel covers.

The monitor wells (TMW-1 through TMW-4) were surveyed by West Company, a State of New Mexico Licensed Professional Land Surveyor (LPS Number 23263) for geodetic position and elevation, including surface elevation and top of casing (TOC) elevation. Figure 2 presents the monitoring well locations. Appendix C presents the boring logs and monitoring well completion records.

3.0 GROUNDWATER MONITORING

3.1 Depth to Groundwater and Groundwater Potentiometric Elevation

On September 23, 2019, depth to groundwater was gauged in wells TMW-1 and TMW-2 at 42.82 and 52.94 feet bgs, respectively. On December 26, 2019, depth to groundwater was gauged in wells TMW-1 and TMW-2 at 45.54 and 54.64 feet bgs, respectively.

On September 30, 2020, depth to groundwater was measured in wells TMW-1 through TMW-4 between about 45.95 feet bgs (TMW-1) and 55.15 feet bgs (TMW-2). The groundwater potentiometric surface elevation ranged from 3,366.15 feet above MSL in well TMW-2 to 3,365.26 feet above MSL in well TMW-1. The groundwater flow direction was from north to south at a gradient of 0.0016 feet per foot.

On December 7, 2020, depth to groundwater was measured in wells TMW-1 through TMW-4 between about 46.06 feet bgs (TMW-1) and 55.22 feet bgs (TMW-2). The groundwater potentiometric surface elevation ranged from 3,366.08 feet above MSL in well TMW-2 to 3,365.15 feet above MSL in well TMW-1. The groundwater flow direction was from north to south at a gradient of 0.0017 feet per foot.

No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the 2019 and 2020 sampling events. Figure 3a and Figure 3b present groundwater potentiometric surface maps from September 30, 2020 and December 7, 2020, respectfully. Table 1 presents monitoring well construction and gauging summary.

3.2 Groundwater Sampling and Laboratory Analysis

LAI personnel collected groundwater samples from wells TMW-1 and TMW-2 during the quarterly sampling events on September 23, 2019 and December 26, 2019. On December 26, 2019, groundwater samples were collected from a windmill located approximately 250 feet south of the spill area. Groundwater samples were collected from TMW-1, TMW-2, TMW-3, TMW-4, and the windmill during quarterly sampling events on September 30, 2020 and December 7, 2020.

On September 23, 2019, groundwater samples were collected from TMW-1 and TMW-2 using dedicated disposal PVC bailers. Groundwater samples were collected on December 26, 2019, September 30, 2020 and December 7, 2020, using the low stress, or low flow, method according to EPA protocol (EQASOP-GW4, Revision 4, September 29, 2017) where an environmental pump was submersed to the middle of the water column and pumped at a low flow rate, until environmental parameters were stabilized. Tygon tubing connected the submersible pump, was used to transport groundwater from the pump to the surface, where it was collected in laboratory grade containers. After samples were collected from each monitor well, the tygon tubing was discarded and the pump was thoroughly cleaned with a solution of potable water and laboratory grade detergent (Alconox®) and rinsed with distilled water. Samples from the windmill were collected at the end of a discharge pipe that that delivers water to a stock tank while the well was pumping.

Groundwater samples collected on September 23, 2019 and December 26, 2019 were delivered under chain of custody and preservation to DHL Analytical (DHL) a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Round Rock, Texas. DHL analyzed the samples for benzene, toluene, ethylbenzene and xylenes (BTEX), total dissolved solids (TDS), and chloride by EPA SW-846 Method 8260D, Method M2540C, and Method 300, respectfully. Groundwater collected on September 30, 2020 and December 7, 2020 were delivered under chain of custody and preservation to Xenco-Eurofins Laboratories (Xenco), a NELAP accredited laboratory located in Midland, Texas. Xenco analyzed the samples for BTEX, TDS, and chloride by EPA SW-846 Method 8021B, Method SM2540C, and Method 300, respectfully. Table 2 presents the laboratory analytical summary. Appendix D presents the laboratory reports.

3.2.1 Organic Analysis

DHL and Xenco did not report BTEX above the analytical reporting limit (RL) or New Mexico Water Quality Control Commission (WQCC) human health standards in samples collected during the quarterly groundwater sampling events.

3.2.2 Inorganic Analysis

On September 23, 2019, DHL reported chloride above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in the groundwater sample from TMW-2 (338 mg/L). DHL reported TDS above the WQCC domestic water quality standard of 1,000 mg/L in the sample from well TMW-2 (1,220 mg/L).

On December 26, 2019, DHL reported chloride above the WQCC domestic water quality standard (250 mg/L) in the samples from well TWM-2 (307 mg/L) and windmill (259 mg/L). TDS was reported above the WQCC domestic water quality standard (1,000 mg/L) in the sample from TWM-2 (1,170 mg/L).
On September 30, 2020, Xenco reported chloride above the WQCC domestic water quality standard (250 mg/L) in samples collected from TWM-2 (314 mg/L), TMW-4 (1,020 mg/L) and the windmill (274 mg/L). TDS was reported above the WQCC domestic water quality standard (1,000 mg/L) in samples collected from TMW-2 (1,040 mg/L) and TMW-4 (2,040 mg/L).

On December 7, 2020, Xenco reported chloride above WQCC domestic water quality standard of (250 mg/L) in samples collected from TMW-2 (298 mg/l), TMW-4 (987 mg/L), and the windmill (287 mg/L). TDS was reported above the WQCC domestic water quality standard (1,000 mg/L) in samples collected from TMW-2 (1,050 mg/L) and TWM-4 (2,300 mg/L).

Figure 4a through Figure 4d present chloride concentration maps for groundwater samples collected on September 23, 2019, December 26, 2019, September 30, 2020, and December 7, 2020, respectfully. Figure 5a through 5d present TDS concentration maps for groundwater samples collected on September 23, 2019, December 26, 2019, September 30, 2020, and December 7, 2020, respectfully.

4.0 CONCLUSIONS

The following observations are made in this report:

- The groundwater flow direction was from north to south at gradients between approximately 0.0016 and 0.0017 feet per foot.
- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- BTEX was not reported above the RL or WQCC human health standards in groundwater samples collected on September 23, 2019, December 26, 2019, September 30, 2020, and December 7, 2020.
- Chloride was reported above the WQCC domestic water quality standard (250 mg/L) in groundwater samples collected from TMW-2, TMW-4, and the windmill.
- TDS was above the WQCC domestic water quality standard (1,000 mg/L) in samples collected from TMW-2 and TMW-4.
- Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TWM-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS.

Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The OCD will be notified immediately upon receipt of laboratory analysis with significant increase of analyte concentrations.

Tables

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM

Table 1
1RP-5636
Monitoring Well Completion and Gauging Summary
Apache Corportaion, EBDU 37, Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-1	09/19/2019	74.36	71.00	2	3411.21	42.32 - 61.97	3.36	3,414.57	09/23/2019	46.18	42.82	28.18	3,368.39
									12/26/2019	48.90	45.54	26.27	3,365.67
									09/30/2020	49.31	45.95	25.05	3,365.26
									12/07/2020	49.42	46.06	24.94	3,365.15
TMW-2	09/19/2019	82.86	80.00	2	3421.30	47.50 - 67.50	2.86	3,424.16	09/23/2019	55.80	52.94	27.06	3,368.36
									12/26/2019	57.50	54.64	25.36	3,366.66
									09/30/2020	58.01	55.15	24.85	3,366.15
									12/07/2020	58.08	55.22	24.78	3,366.08
TWM-3	09/29/2020	71.29	68.41	2	3420.33		2.88	3,423.21	09/23/2019	--	--	--	--
									12/26/2020	--	--	--	--
									09/30/2020	57.62	54.74	13.67	3,365.59
									12/07/2020	57.68	54.80	13.61	3,365.53
TMW-4	09/29/2020	73.25	70.09	2	3420.03		3.16	3,423.19	09/23/2019	--	--	--	--
									12/26/2019	--	--	--	--
									09/30/2020	57.39	54.23	15.86	3,365.80
									12/07/2020	57.45	54.29	15.80	3,365.74

Notes: monitoring wells installed by Environ-Drill, Albuquerque, New Mexico with 2 inch schedule 40 PVC casing and screen
bgs - below ground surface
TOC - top of casing
AMSL: denotes elevation in feet above mean sea level

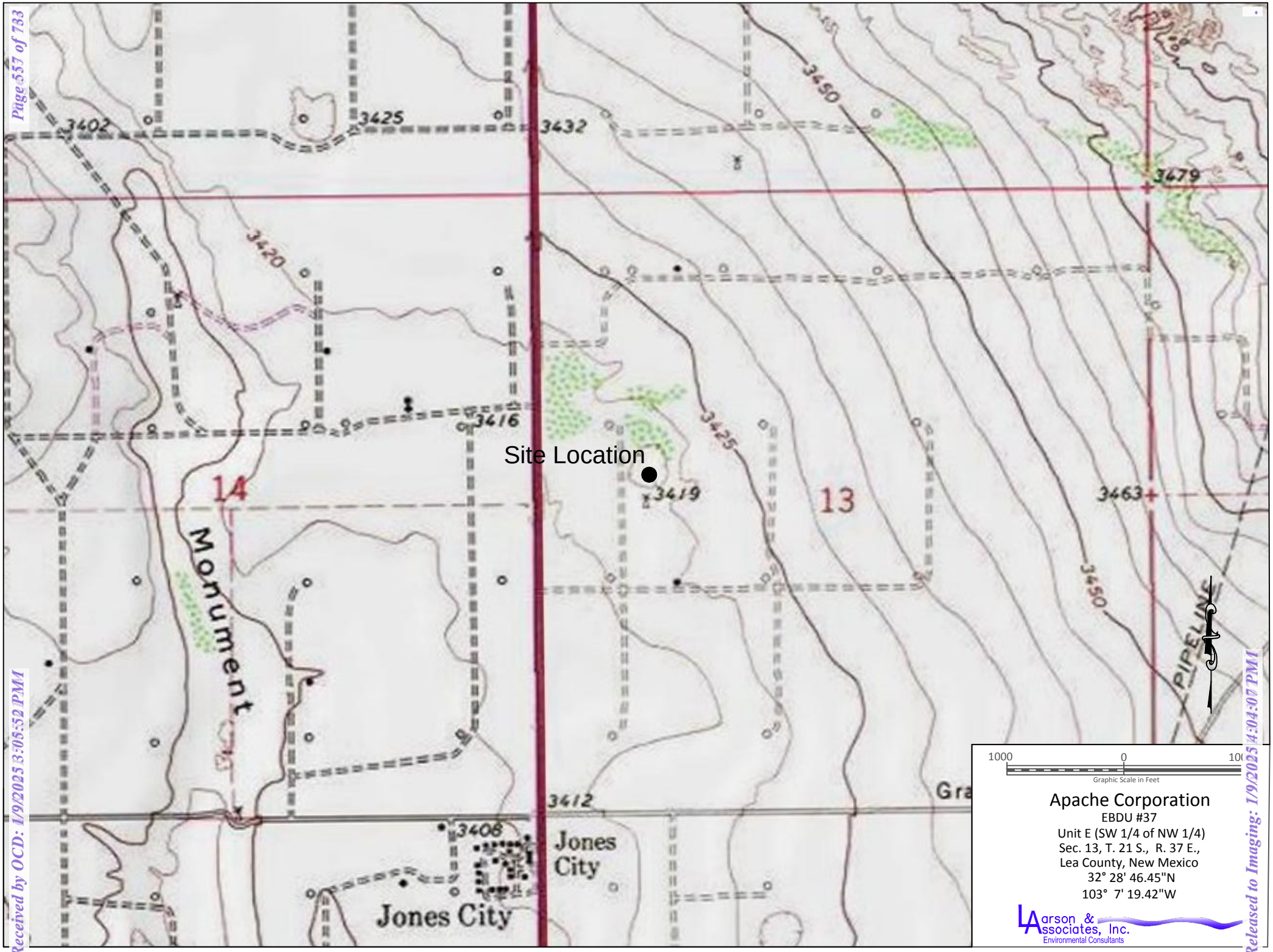
Table 2
1RP-5636
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU 37, Lea County, New Mexico

Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To Water (Feet TOC)
NMWQCC Standard:		*0.01	*0.75	*0.75	*0.62	**250	**1,000	
Windmill	(') 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	(²) 09/23/2019	--	--	--	--	--	--	--
	(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**259**	688	--
	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**274**	730	--
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**287**	930	--
TMW-1	(²) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.9
	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
TMW-2	(²) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	**338**	**1,220**	55.8
	(²) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**307**	**1,170**	57.5
	(³) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	**314**	**1,040**	58.01
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**298**	**1,050**	58.06
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	(³) 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	(³) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	**1,020**	**2,040**	57.39
	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**987**	**2,300**	57.45
DUP-1 (Windmill)	(³) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**276**	794	--
DUP-1 (Windmill)	(³) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**278**	908	--

Notes:
(') analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS)
(²) analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride)
(³) analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride)
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
< values - denotes concentration is less than method reporting limit (RL).
* - NMWQCC Human Health Standard
** - NMWQCC Domestic Water Quality Standard
- no data available
TOC - top of casing
Bold and highlighted denotes analyte concentration exceeds NMWQCC domestic water quality standard

Figures

Page 557 of 733



Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Figure 1 - Topographic Map

Page 658 of 733

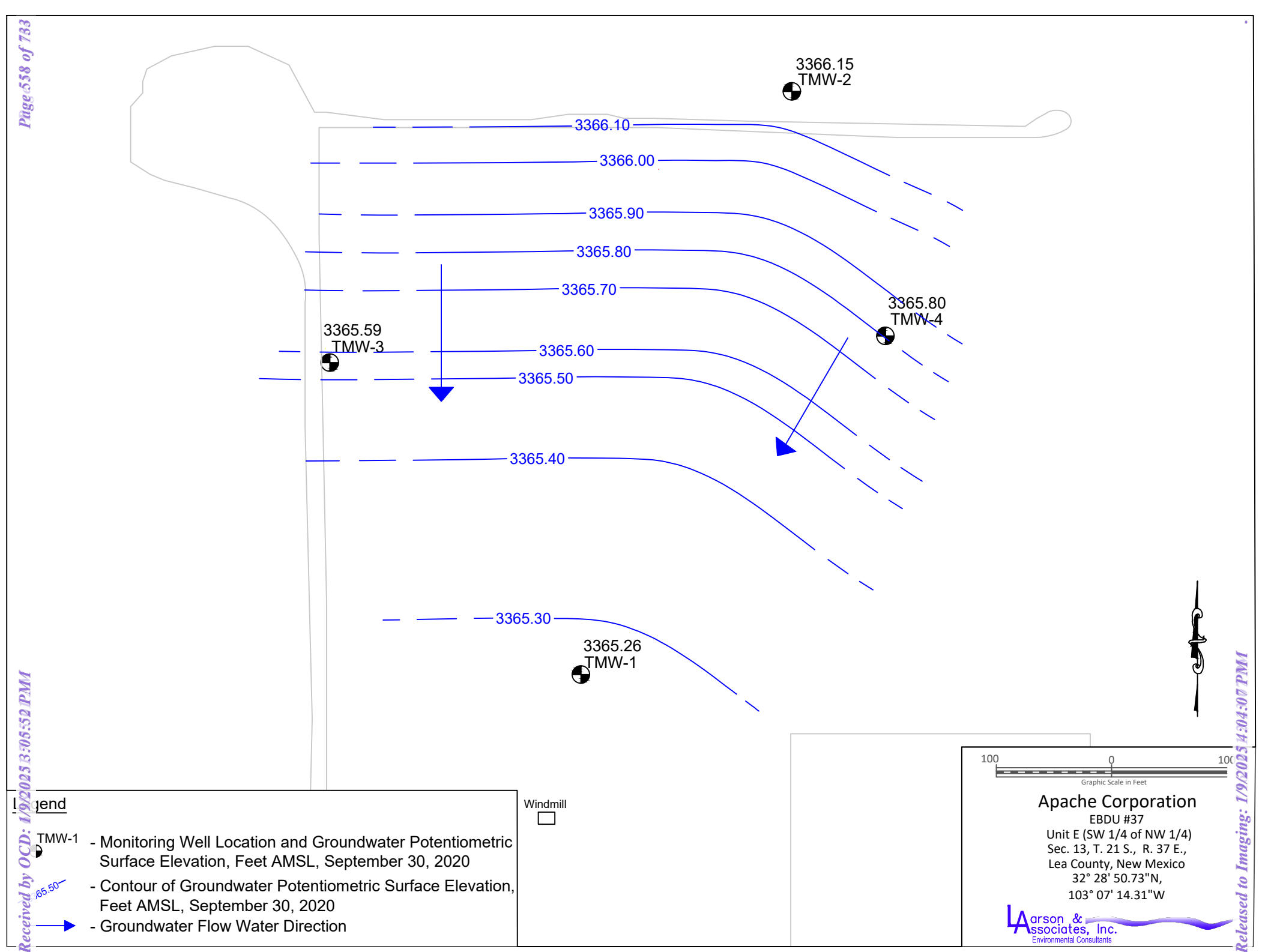


Figure 3a - Groundwater Potentiometric Map, September 30, 2020

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 659 of 733

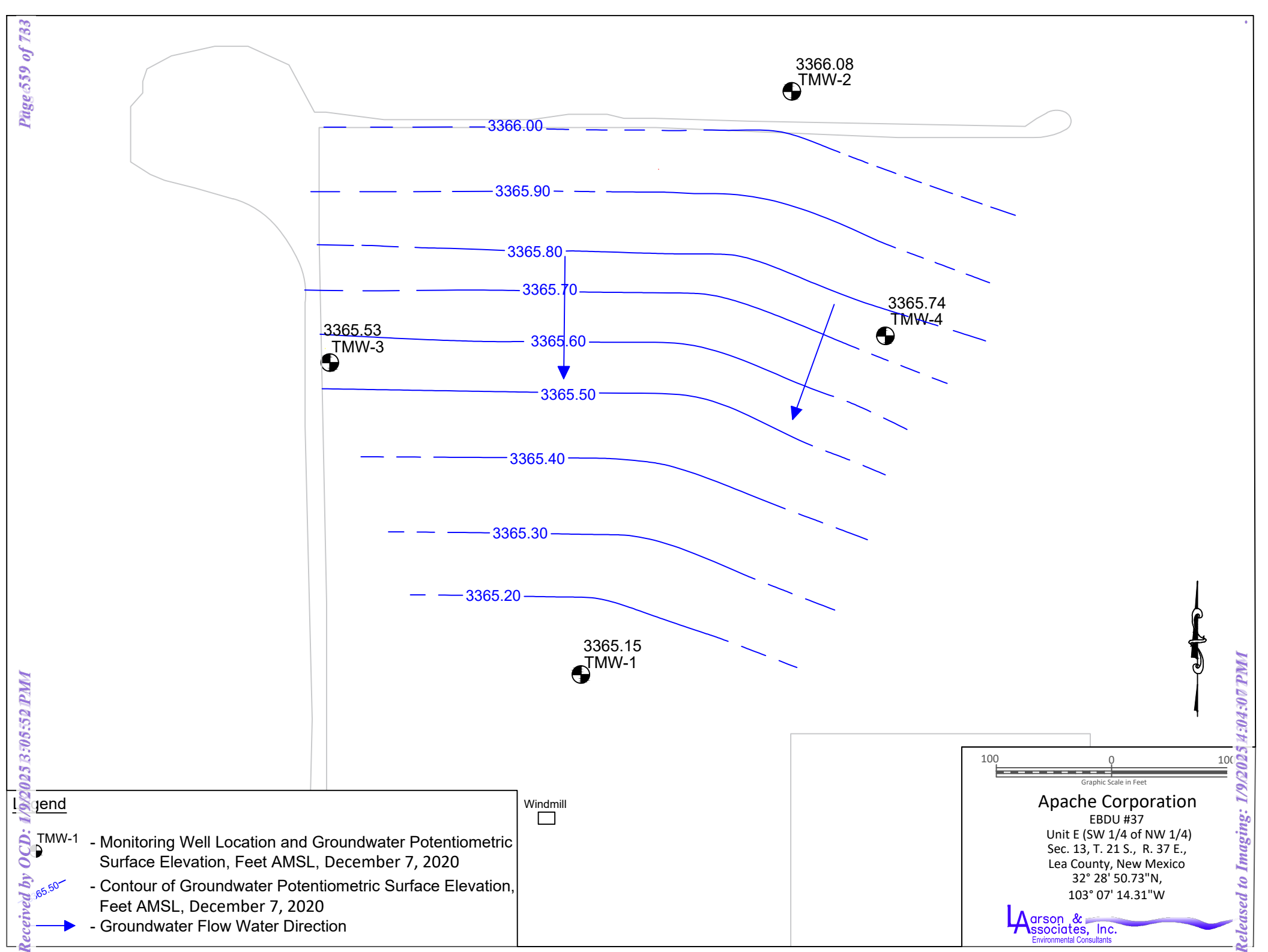
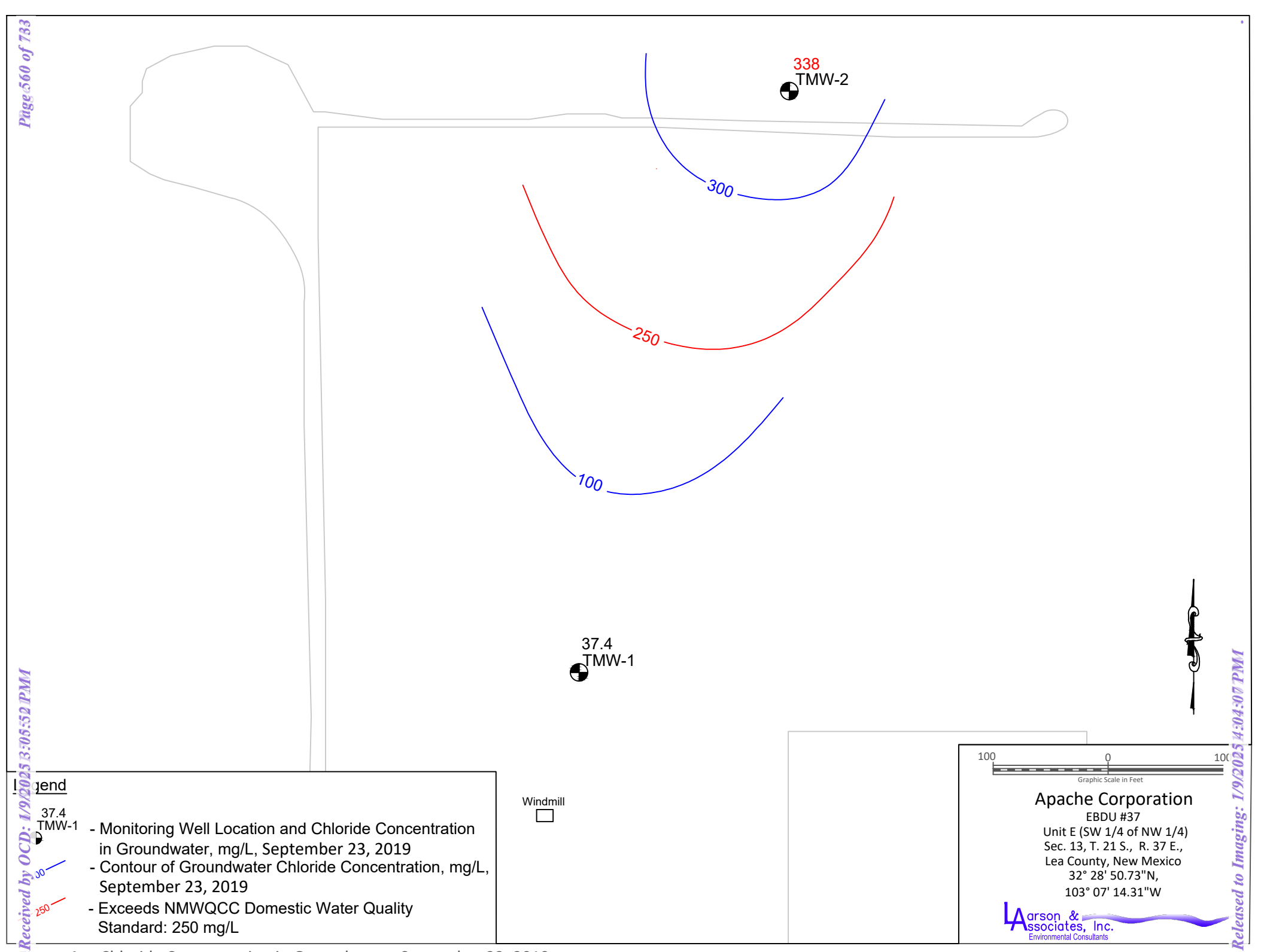


Figure 3b - Groundwater Potentiometric Map, December 7, 2020

Received by OCD: 1/9/2025 3:05:52 PM1

Released to Imaging: 1/9/2025 4:04:07 PM1

Page 560 of 733



Legend

37.4
TMW-1 - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, September 23, 2019

00 - Contour of Groundwater Chloride Concentration, mg/L, September 23, 2019

250 - Exceeds NMWQCC Domestic Water Quality Standard: 250 mg/L

Figure 4a - Chloride Concentration in Groundwater, September 23, 2019

Received by OCD: 1/9/2025 3:05:52 PM1

Released to Imaging: 1/9/2025 4:04:07 PM1

Page 561 of 733

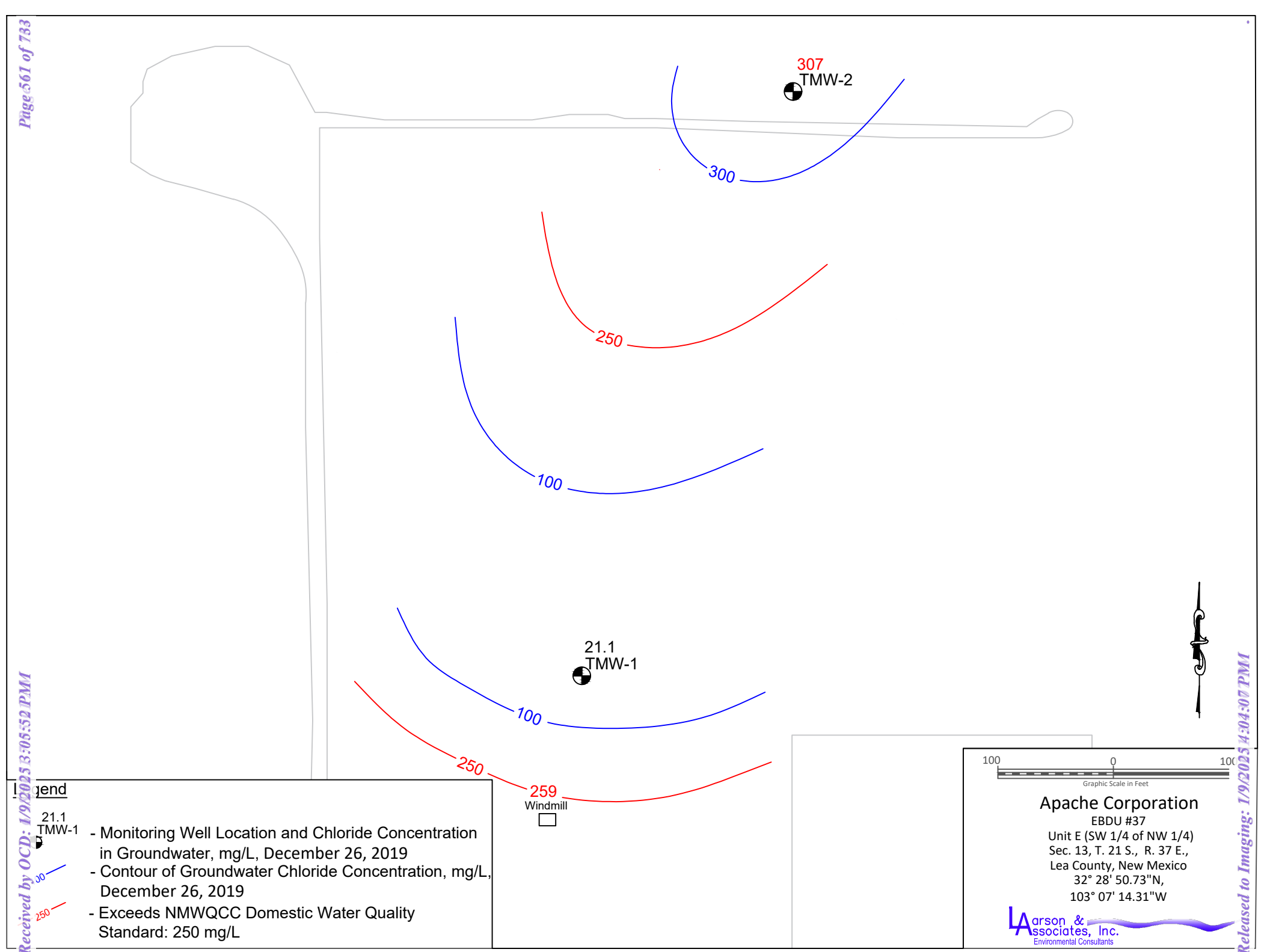


Figure 4b - Chloride Concentration in Groundwater, December 26, 2019

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 562 of 733

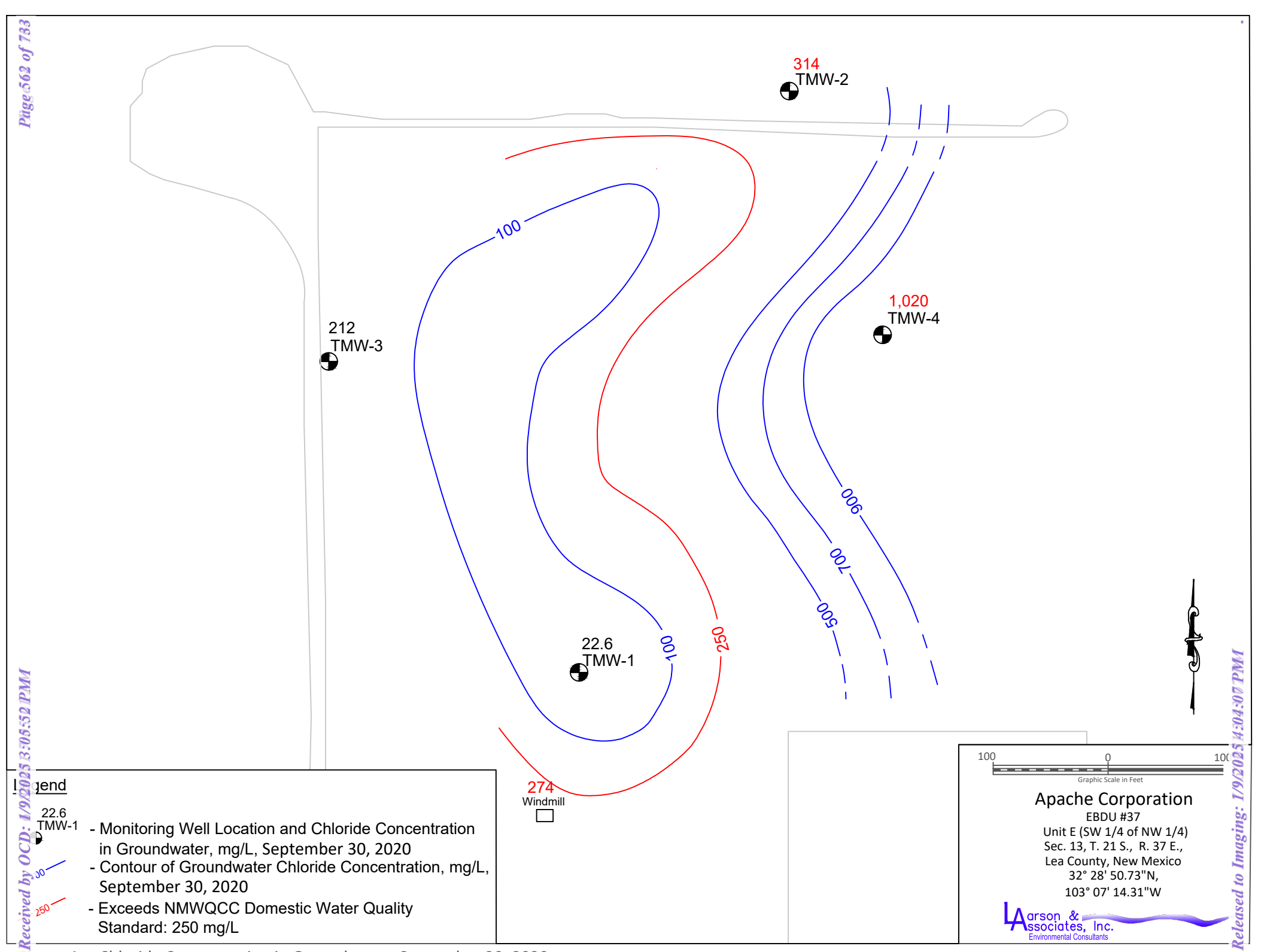


Figure 4c - Chloride Concentration in Groundwater, September 30, 2020

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 563 of 733

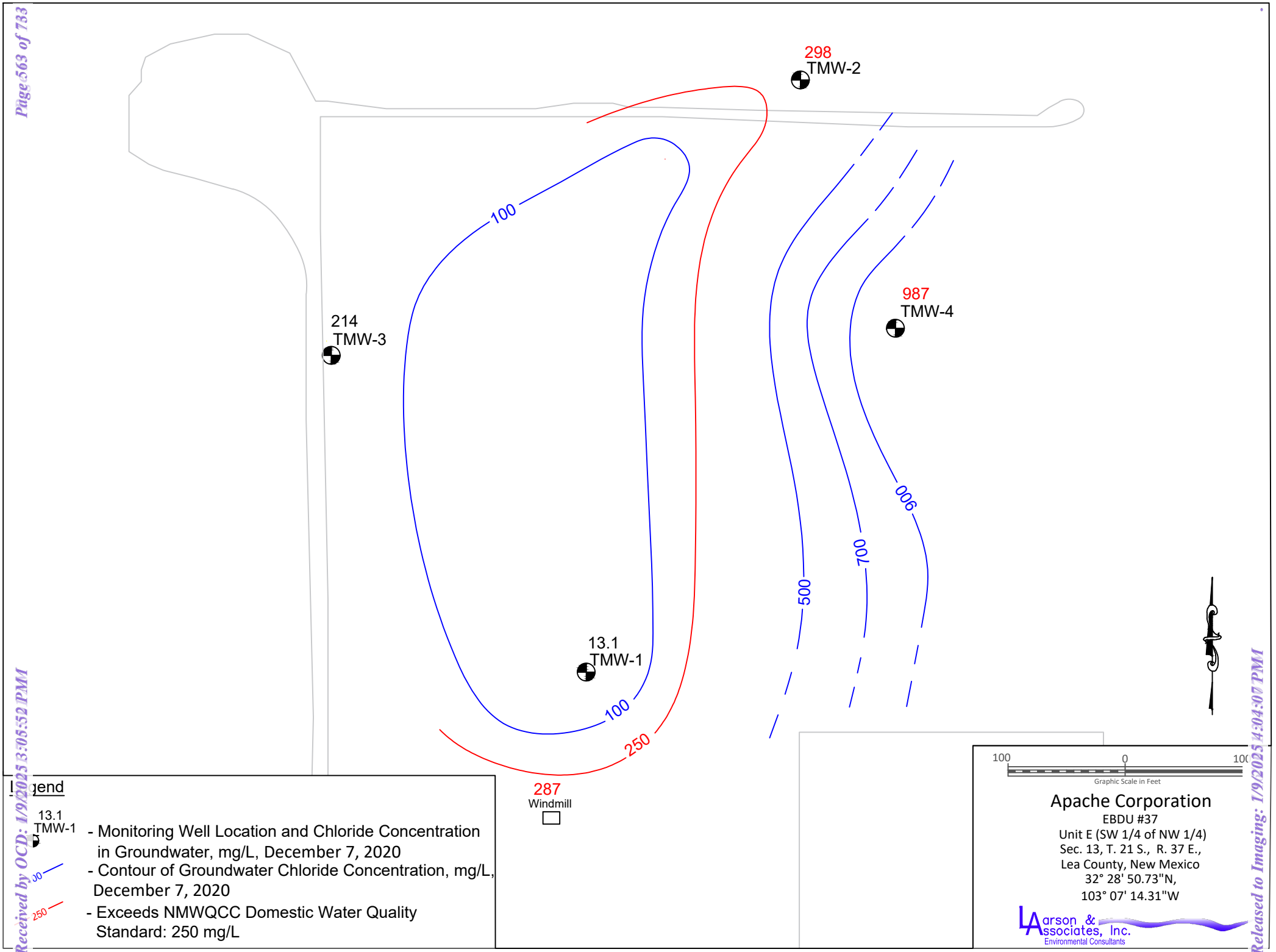


Figure 4d - Chloride Concentration in Groundwater, December 7, 2020

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 564 of 733

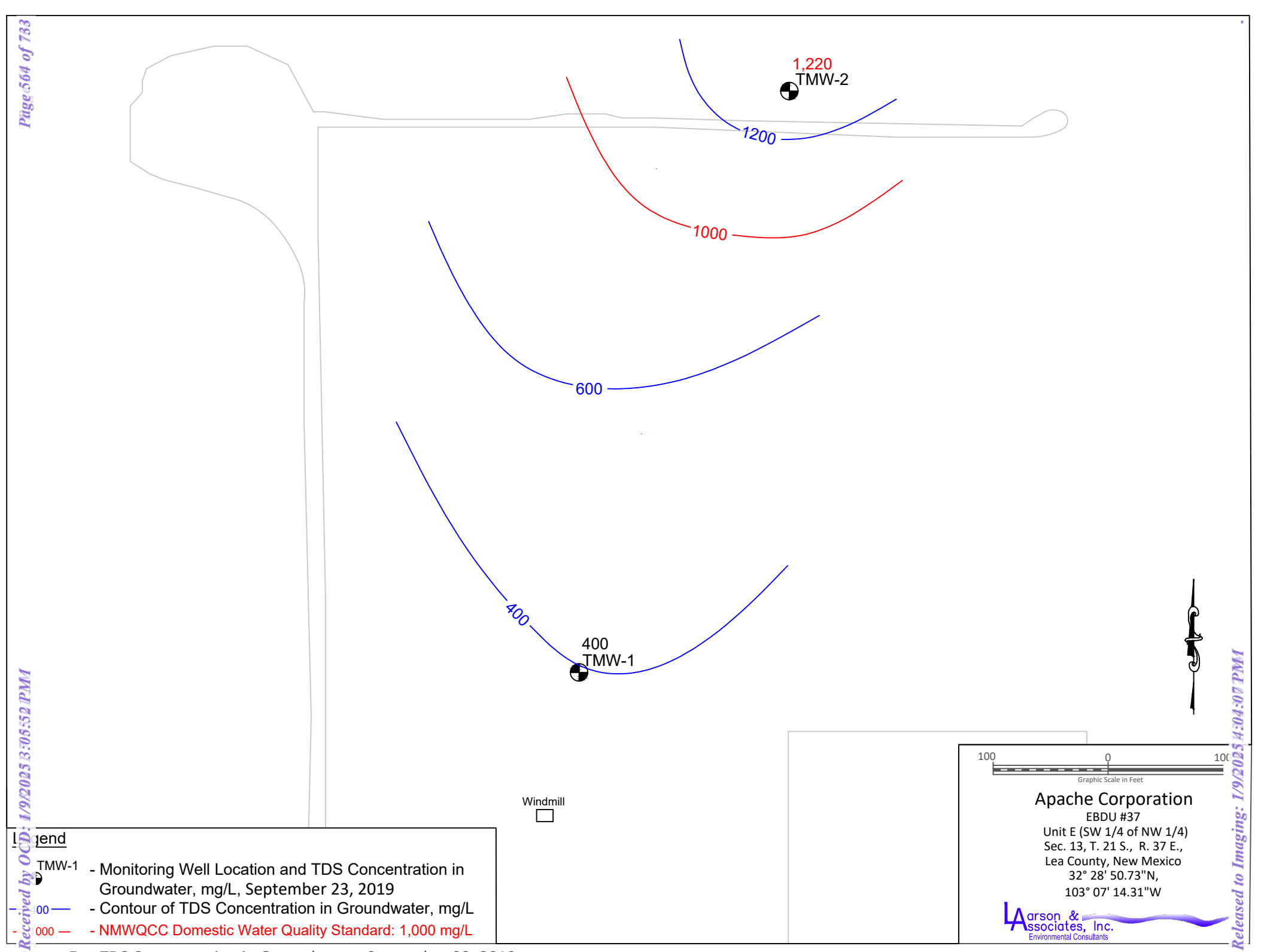


Figure 5a - TDS Concentration in Groundwater, September 23, 2019

Received by OCD: 1/9/2025 3:05:52 PM1

Released to Imaging: 1/9/2025 4:04:07 PM1

Page 565 of 733

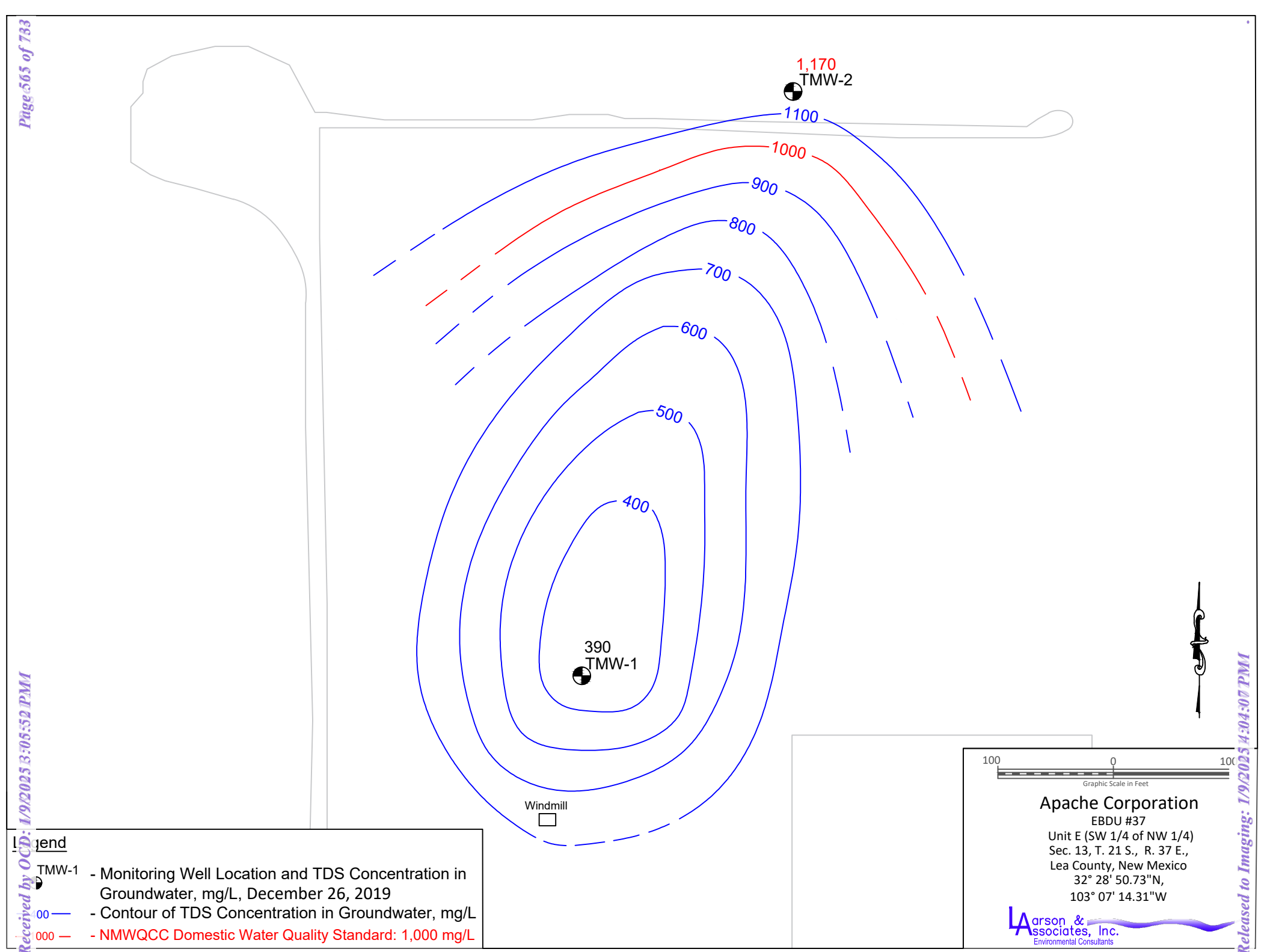


Figure 5b - TDS Concentration in Groundwater, December 26, 2019

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 566 of 733

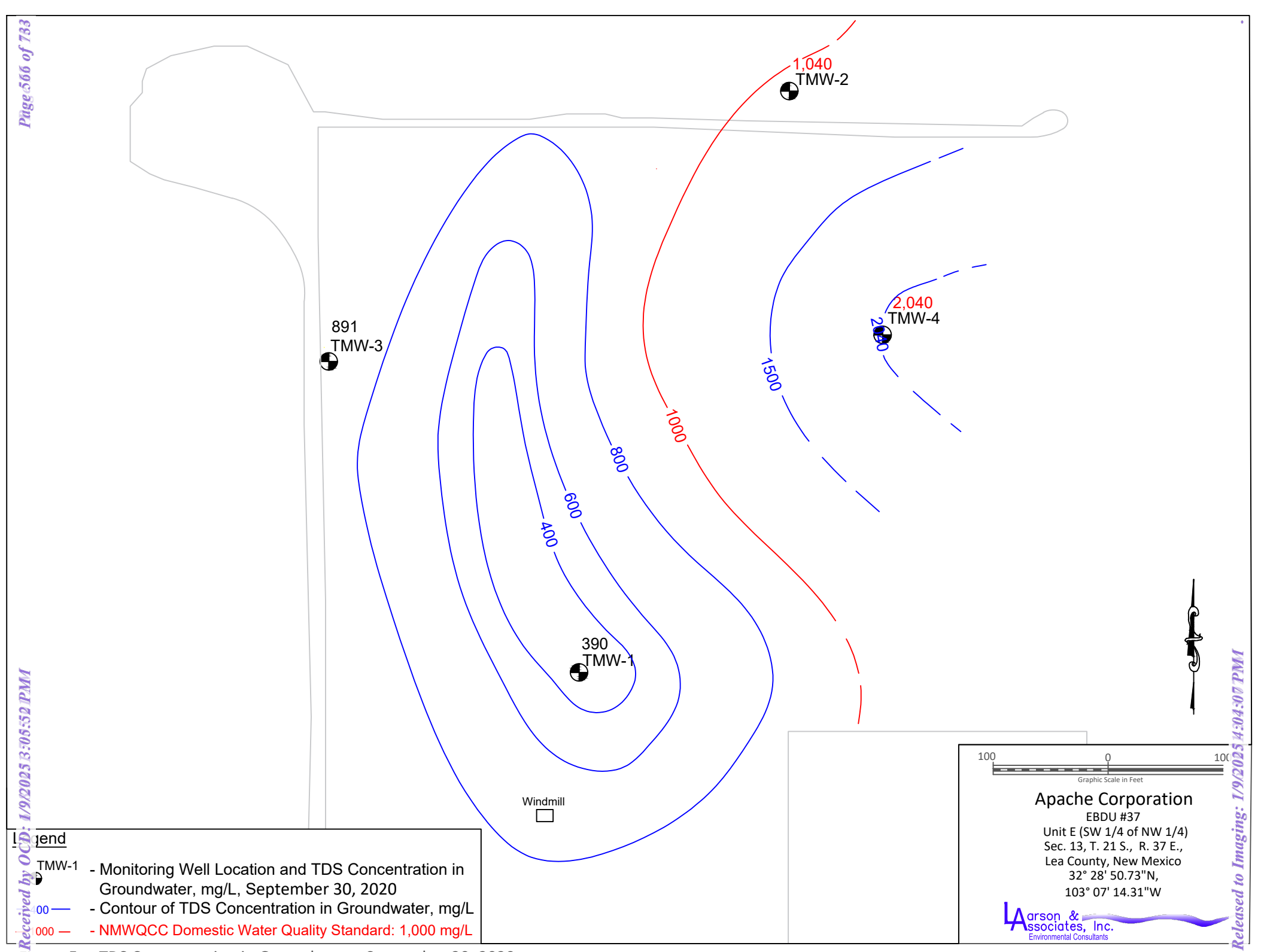
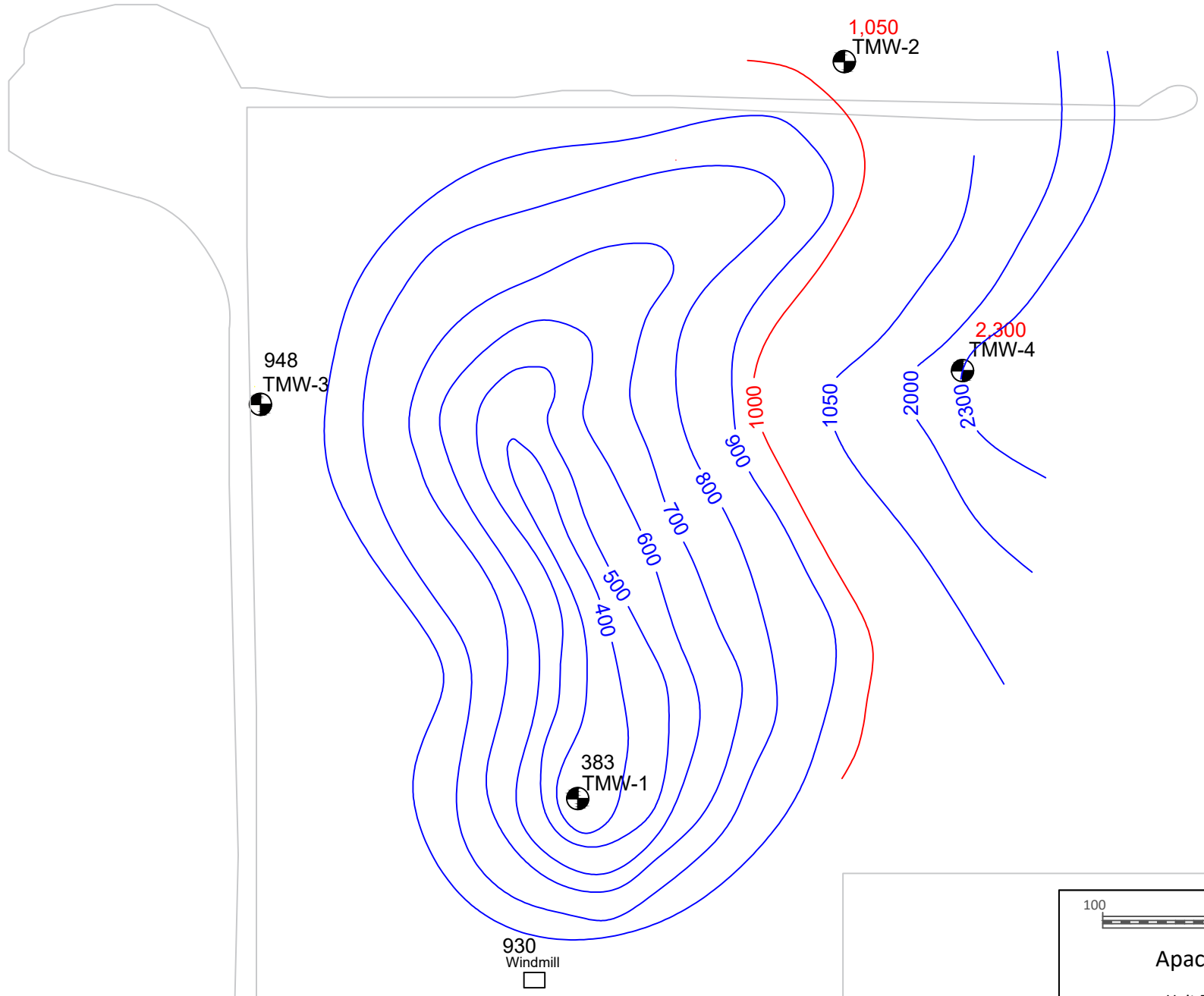


Figure 5c - TDS Concentration in Groundwater, September 30, 2020

Received by OCD: 1/9/2025 3:05:52 PM1
Released to Imaging: 1/9/2025 4:04:07 PM1

Page 567 of 733



Legend

TMW-1 - Monitoring Well Location and TDS Concentration in Groundwater, mg/L, December 7, 2020

00 — - Contour of TDS Concentration in Groundwater, mg/L

000 — - NMWQCC Domestic Water Quality Standard: 1,000 mg/L

100 0 100

Graphic Scale in Feet

Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 5d - TDS Concentration in Groundwater, December 7, 2020

Received by OCD: 1/9/2025 3:05:52 PM1

Released to Imaging: 1/9/2025 4:04:07 PM1

Appendix A

Initial C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # *(assigned by OCD)*
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM 88240	

Location of Release Source

Latitude: W 32.4807053 Longitude: N -103.123085

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EBDU #37 WIW	Site Type: Water Injection Well
Date Release Discovered: July 14, 2019	API # *3002506556*

Unit Letter	Section	Township	Range	County
E	12	21S	37E	LEA

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: William Stephens*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
☒ Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Isolation valve failure due to internal corrosion.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Via email given to NM OCD by Bruce Baker, Senior Environmental Technician, Apache Corporation

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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 of a C-141 report 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 of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jeff Broom Title: Environmental Technician

Signature: _____ Date: 07/24/2019

Email: Jeffrey.Broom@apachecorp.com Telephone: (432) 664-4677

OCD Only

Received by: Dylan Rose-Coss Date: 08/09/2019

Appendix B

OCD Communications

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Rachel Owen
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, December 23, 2019 3:21:06 PM

12/23/2019

Apache Corp. – Larry Baker
Larson Environmental

RE: 1RP-5636/EBDU #37, the following:

The attached/stringed email as an addendum to offered Work Plan is approved, including the location of proposed monitor wells, as was discussed recently on the telephone.

Please keep a copy of this communication for your records, as NO paper copy will follow. It may take some days for this to be uploaded to The Oil Conservation Division (OCD) data base,

ODE appreciates your efforts.

Sincerely,

Bradford Billings
EMNRD/OCD
Santa Fe, NM

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

---

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 12:58 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: [EXT] Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Tuesday, September 1, 2020 4:10:21 PM

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

From: Mark Larson <Mark@laenvironmental.com>
Sent: Tuesday, September 1, 2020 10:48 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.
Thank you,
Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656

Fax – 432-687-0456
mark@laenvironmental.com

From: Mark Larson
Sent: Thursday, August 13, 2020 8:26 AM
To: 'Bradford.Billings@state.nm.us' <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Sent: Monday, August 10, 2020 10:51 AM
To: Mark Larson <Mark@laenvironmental.com>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>

Sent: Monday, December 23, 2019 1:58 PM
To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, August 10, 2020 11:03:12 AM

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

Appendix C

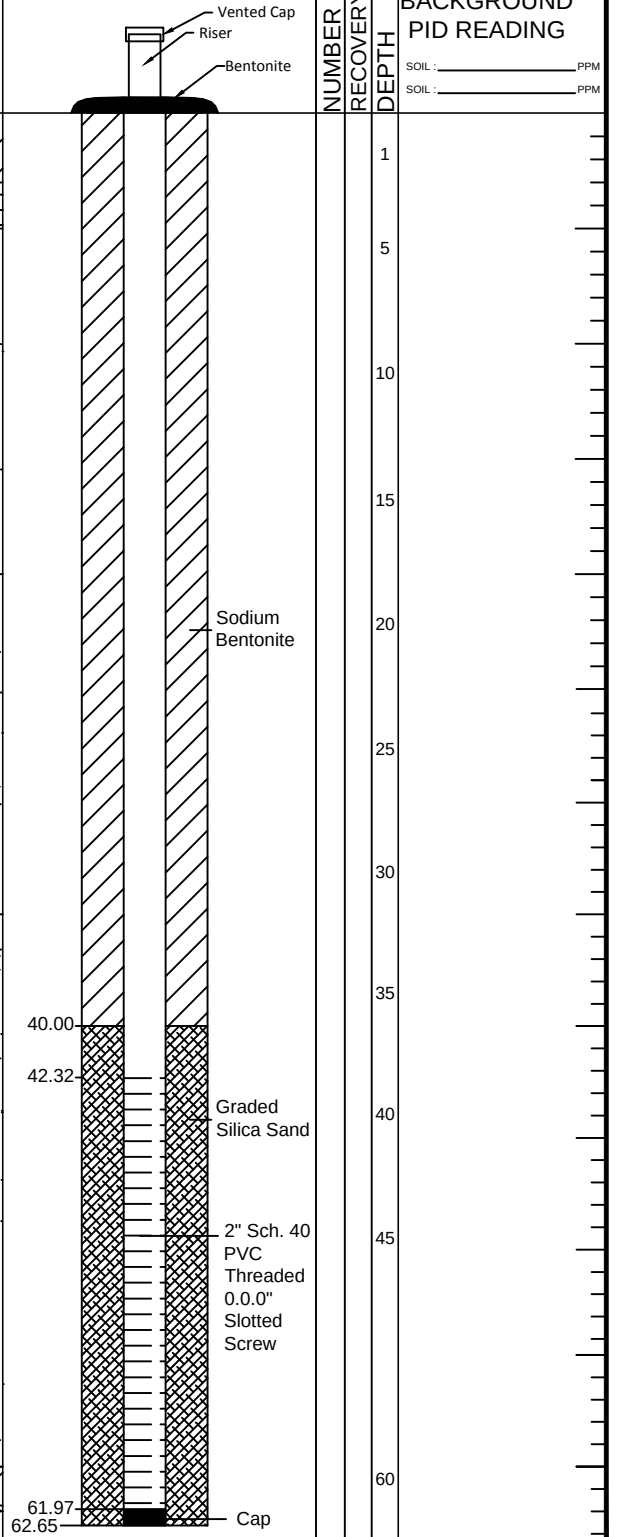
Boring Logs

BORING RECORD

Start: 11:40
Finish: 12:58

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry	CL	
		Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry	Caliche	
	10	Silty Sand, 10YR, 6/4, Light Yellowish ..., Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose	SM	
	20	7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, ... Round		
	25	10YR, 7/4, Very Pale Brown Below 15'		
	30	Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist	SW	
	35	Below 35'		
	40	Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand,Poorly Sorted, Moderately Well Cemented to Well Cemented	Sand Stone	
46.72	45			
	50			
	55			
	60	Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm	SP	
		TD: 62'		

Surface Elevation:
TOC Elecation:



NUMBER	RECOVERY	DEPTH
		1
		5
		10
		15
		20
		25
		30
		35
		40
		45
		60

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache Corp./ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : _____
DRILLING METHOD : SR/WR

Larson & Associates, Inc. Environmental Consultants

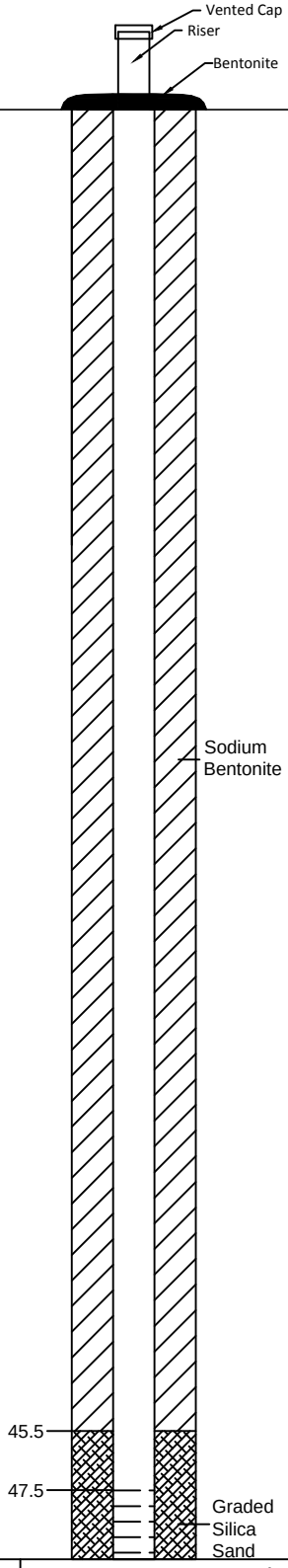
DRILL DATE : 9-19-2019
BORING NUMBER : TMW-1

BORING RECORD

Start: 15:02
Finish: 15:55

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
	0	Silty Clay, 10YR, 5/6, Ash Brown, Dry	CL					15:02
	5	Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand	Caliche					15:03
	10							15:05
	15	Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SM					15:10
	20							15:15
	25	Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SW					15:17
	30							15:22
	35							15:23
	40							15:28
	45	Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry	SW					15:30
		Continue						



BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019
BORING NUMBER : TMW-2

JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

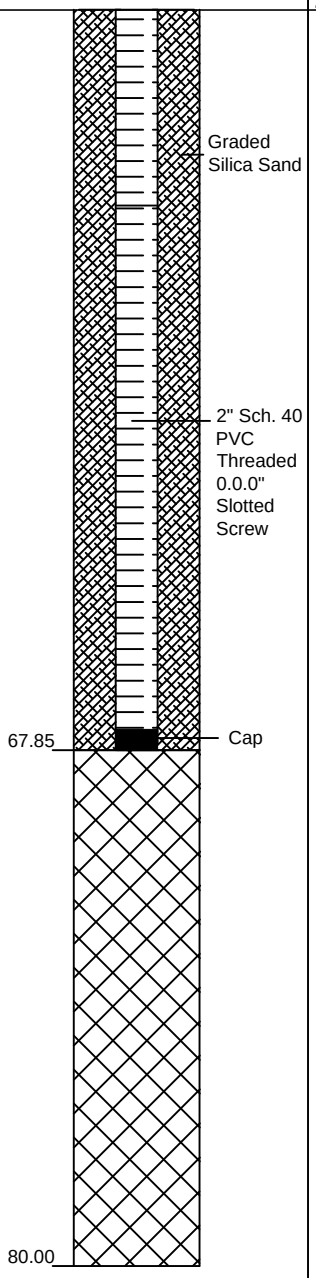
BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	50	*Continue*		
	55	Silty and Clayey Below 50', Moist at 55'	SM-SC	
	60			
	65			
	70			
	75	Gravel, 7.5YR, 4/3, Light Brown, Poorly Sorted, Round, Red Bed	GW	
	80	TD: 79'		

Start: 15:02
Finish: 15:55

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'

Continue



NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
			SOIL : PPM SOIL : PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

LArson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019

BORING NUMBER : TMW-2

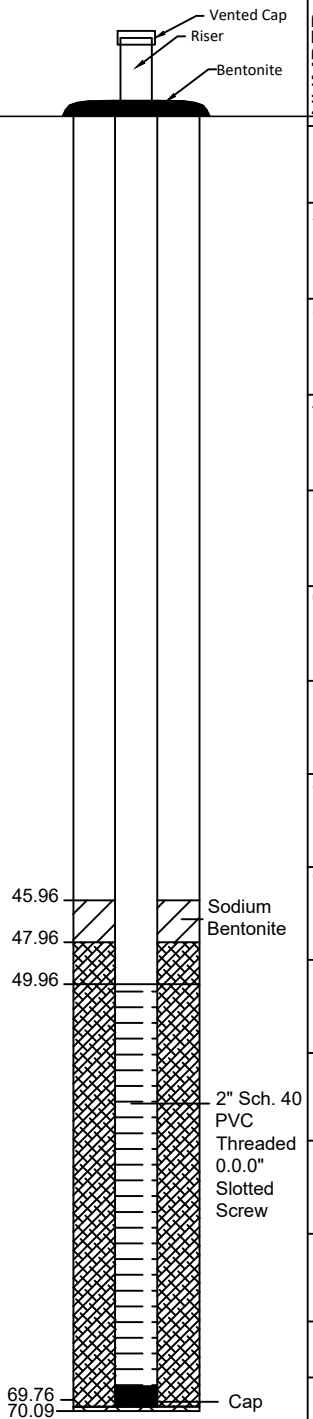
JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 09:35 MST
Finish: 10:30 MST

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Quartz Sand,Quartz and Feldspar Moderate to Well Sorted, Sub Rounded to Well Rounded	SM	
	10	Caliche, 7.5YR 8/2, Pinkish White, Sandy, Fine to Very Fine Grains, Well Sorted, Well Rounded	Caliche	
	20	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand	SM	
	30	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand with Increase in Depth Lithology Remains the Same		
	40	@37' becomes Silty to Very Fine Grained Quartz Sand to 65'		
	50			
	60		SM	
	65			
	70	Gravelly Sand, 7.5YR, Strong Brown, Fine to Very Fine Coarse Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel(5-15mm), Poorly Sorted	SP	
	75	TD: 68.41'		

PID READING / SAMPLE / REMARKS



NUMBER	RECOVERY	DEPTH
1		1
2		5
3		10
4		15
5		20
6		25
7		30
8		35
9		40
10		45
11		50
12		55
13		60
14		65
15		68

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020

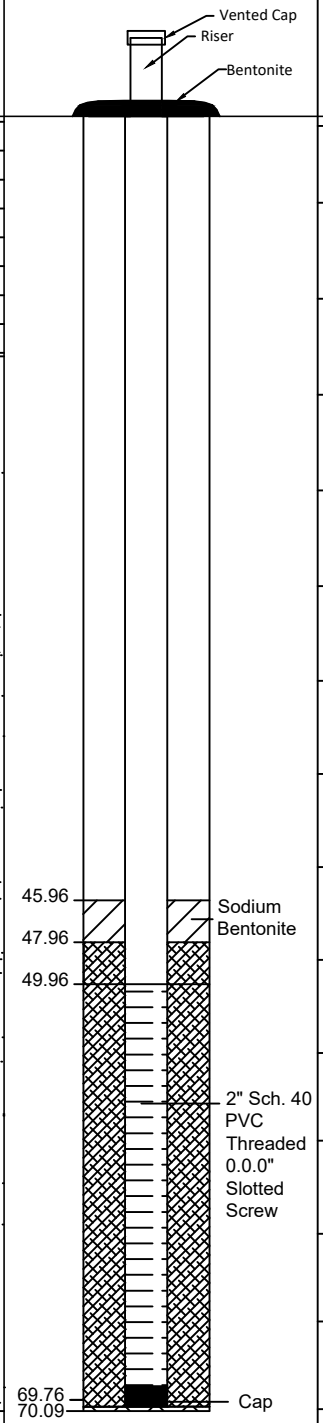
BORING NUMBER : TMW-3

BORING RECORD

Start: 12:45
Finish: 13:40

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Caliche, 7.5YR 8/2, Pinkish White, Medium to Very Fine, Poorly Sorted, Sub Angular to Sub Rounded	Caliche	
	15	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Quartz Sand	SM	
	25	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich Sand, Sub Angular to Sub Rounded, Poorly Sorted, Coarse to Fine Grained Quartz Sand with Increase in Depth @34' Lithology Remained Constant and Grain Size Decreased to Fine to Very Fine Quartz Sand, Well Sorted, Rounded to Well Rounded		
	55	Sand, 7.5YR, Strong Brown, With Gravel, Fine to Very Coarse Quartz Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel (5-15mm), Poorly Sorted	SM	
	70	TD: 70.09'		
	75			

PID READING



SAMPLE NUMBER	RECOVERY	DEPTH
1		1
2		5
3		10
4		15
5		20
6		25
7		30
8		35
9		40
10		45
11		50
12		55
13		60
14		65
15		70

REMARKS

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020

BORING NUMBER : TMW-4

Appendix D

Laboratory Reports

DHL ANALYTICAL

October 04, 2019

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1909235

RE: EBDU #37

Dear Mark Larson:

DHL Analytical, Inc. received 2 sample(s) on 9/26/2019 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-19-24

Table of Contents

Miscellaneous Documents 3

CaseNarrative 1909235 6

Analytical Report 1909235 7

AnalyticalQCSummaryReport 1909235 9

Page 591 of 733

Nº 0770

CHAIN-OF-CUSTODY

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

DATE: 9-25-2019 PAGE 1 OF 1
PO#: LAB WORK ORDER#: 1909235
PROJECT LOCATION OR NAME: EBDU #37
LAI PROJECT #: 19-0112-49 COLLECTOR: EC
Data Reported to:

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐	TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐	HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐	TCLP - PEST ☐	TCLP VOC ☐	TOTAL METALS (RCRA) ☐	HERB ☐	Semi-VOC ☐	LEAD - TOTAL ☐	OTHER LIST ☐	RCI ☐	TOX ☐	D.W. 200.8 ☐	TCLP ☐	TDS ☒	TSS ☐	FLASHPOINT ☐	pH ☐	% MOISTURE ☐	EXPLOSIVES ☐	HEXAVALENT CHROMIUM ☐	CYANIDE ☐	CHLORIDES ☒	ANIONS ☐	PECHLORATE ☐	ALKALINITY ☐	m300	FIELD NOTES
TMW 1	01	9-23-19	15:00	W	4	3			4		X																					X						X									
TMW 2	02	9-23-19	17:10	W	4	3			4		X																					X						X									
TOTAL																																																

RELINQUISHED BY:(Signature) Rachel Owen DATE/TIME 9-25-19/9:00 RECEIVED BY: (Signature) LSO
RELINQUISHED BY:(Signature) LSO DATE/TIME 9/26/19 0800 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
LABORATORY: DHL

3

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

LABORATORY USE ONLY:
RECEIVING TEMP: 3.7°C THERM#: 78
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL # LSO
☐ HAND DELIVERED

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 592 of 733

LSO

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

Airbill No. LSO0BYG9

LSO0BYG9

1. To: Print Name (Person) | Phone (important)

Company Name

Street Address (No P.O. Box or P.O. Box Zip Code® Deliveries)

Suite / Floor

City | State | Zip

2. From: Print Name (Person) | Phone (important)

Company Name

Street Address

Suite / Floor: 205

City | State | Zip

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

- LSO Priority Overnight* — 10:30 a.m. to most cities
- LSO Early Overnight* — 8:30 a.m. select cities
- Economy Next Day* — 5 p.m. to most cities
- 2nd Day*
- ☐ LSO Ground
- ☐ LSO Saturday*
- ☐ Other

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

Assumed LSO Priority Overnight service unless otherwise noted.

Without Delivery Signature (See Limits of Liability below)

Release Signature

x W____ x H____

4. Package: Weight:

Your Company's Billing Reference Information

Ship Date: (mm/dd/yy) 9 / 25 / 19

5. Payment:

FOR DRIVER USE ONLY

Driver Number 15676

☐ Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location

Date:

Time:

City Code:

WRITING ON AIRBILL MAY DELAY TRANSIT TIMES OR RESULT IN NON-DELIVERY. LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater ceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. If deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. "Signature Required" service is only available when printing a label online at LSO.com. ERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. Packaging provided by LSO is for EXPRESS USE ONLY – NEVER TO BE USED FOR LSO GROUND Service. OVERSIZE RATES MAY Y. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY. See LSO Service Guide for further details.

CUSTODY SEAL

DATE 9/25/19

SIGNATURE Rachel Owen

QEC
Quality Environmental Containers
800-255-3950 • www.qecusa.com

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Larson & Associates Date Received: 9/26/2019

Work Order Number 1909235 Received by EL

Checklist completed by: _____ 9/26/2019 Reviewed by DL 9/26/2019
Signature Date Initials Date

Carrier name LoneStar

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	3.7 °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____
Water - ph>9 (S) or ph>10 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

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

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *04-Oct-19*

CLIENT: Larson & Associates
Project: EBDU #37
Lab Order: 1909235

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, EPA and Standard Methods.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives except where noted in the following. For Anions Analysis, for Batches 92959 and 92978, the recovery of Chloride for the Matrix Spike and Matrix Spike Duplicate(s) (various) was below the method control limits. These are flagged accordingly in the QC Summary Report. This anion was within method control limits in the associated LCS(s). No further corrective action was taken.

For Volatile Organics Analysis, the recovery of Benzene for the Matrix Spike Duplicate (1909277-07 MSD) was below the method control limits. This is flagged accordingly in the QC Summary Report. This compound was within method control limits in the associated LCS. No further corrective action was taken.

DHL Analytical, Inc.

Date: *04-Oct-19*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW1
Project:	EBDU #37	**Lab ID:**	1909235-01
Project No:	19-0112-49	**Collection Date:**	09/23/19 03:00 PM
Lab Order:	1909235	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260C**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	10/03/19 04:27 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:27 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:27 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:27 PM
Surr: 1,2-Dichloroethane-d4	93.6	0	72-119		%REC	1	10/03/19 04:27 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	10/03/19 04:27 PM
Surr: Dibromofluoromethane	102	0	85-115		%REC	1	10/03/19 04:27 PM
Surr: Toluene-d8	97.6	0	81-120		%REC	1	10/03/19 04:27 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **SNM**
Chloride	37.4	3.00	10.0		mg/L	10	09/27/19 11:38 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	400	10.0	10.0		mg/L	1	09/26/19 05:30 PM

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

DHL Analytical, Inc.

Date: *04-Oct-19*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW2
Project:	EBDU #37	**Lab ID:**	1909235-02
Project No:	19-0112-49	**Collection Date:**	09/23/19 05:10 PM
Lab Order:	1909235	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260C**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	10/03/19 04:53 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:53 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:53 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	10/03/19 04:53 PM
Surr: 1,2-Dichloroethane-d4	91.7	0	72-119		%REC	1	10/03/19 04:53 PM
Surr: 4-Bromofluorobenzene	97.7	0	76-119		%REC	1	10/03/19 04:53 PM
Surr: Dibromofluoromethane	99.8	0	85-115		%REC	1	10/03/19 04:53 PM
Surr: Toluene-d8	96.3	0	81-120		%REC	1	10/03/19 04:53 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **SNM**
Chloride	338	30.0	100		mg/L	100	09/26/19 07:18 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	1220	50.0	50.0		mg/L	1	09/26/19 05:30 PM

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

DHL Analytical, Inc. **Date:** *04-Oct-19*

CLIENT: Larson & Associates
Work Order: 1909235
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191003A

The QC data in batch 93066 applies to the following samples: 1909235-01A, 1909235-02A

Sample ID **LCS-93066** Batch ID: **93066** TestNo: **SW8260C** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS3_191003A** Analysis Date: **10/3/2019 9:03:00 AM** Prep Date: **10/3/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0467	0.00200	0.0464	0	101	81	122			
Ethylbenzene	0.0486	0.00600	0.0464	0	105	73	127			
Toluene	0.0466	0.00600	0.0464	0	100	77	122			
Total Xylenes	0.151	0.00600	0.139	0	109	80	121			
Surr: 1,2-Dichloroethane-d4	47.8		50.00		95.7	72	119			
Surr: 4-Bromofluorobenzene	50.8		50.00		102	76	119			
Surr: Dibromofluoromethane	51.1		50.00		102	85	115			
Surr: Toluene-d8	49.0		50.00		98.0	81	120			

Sample ID **MB-93066** Batch ID: **93066** TestNo: **SW8260C** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS3_191003A** Analysis Date: **10/3/2019 9:30:00 AM** Prep Date: **10/3/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.000800	0.00200								
Ethylbenzene	<0.00200	0.00600								
Toluene	<0.00200	0.00600								
Total Xylenes	<0.00200	0.00600								
Surr: 1,2-Dichloroethane-d4	47.4		50.00		94.9	72	119			
Surr: 4-Bromofluorobenzene	50.4		50.00		101	76	119			
Surr: Dibromofluoromethane	50.5		50.00		101	85	115			
Surr: Toluene-d8	48.6		50.00		97.2	81	120			

Sample ID **1909277-07AMS** Batch ID: **93066** TestNo: **SW8260C** Units: **mg/L**
SampType: **MS** Run ID: **GCMS3_191003A** Analysis Date: **10/3/2019 2:44:00 PM** Prep Date: **10/3/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.52	0.0400	0.928	1.74	84.5	81	122			
Ethylbenzene	0.957	0.120	0.928	0	103	73	127			
Toluene	1.00	0.120	0.928	0.104	96.6	77	122			
Total Xylenes	2.97	0.120	2.78	0	107	80	121			
Surr: 1,2-Dichloroethane-d4	929		1000		92.9	72	119			
Surr: 4-Bromofluorobenzene	1010		1000		101	76	119			
Surr: Dibromofluoromethane	1000		1000		100	85	115			
Surr: Toluene-d8	968		1000		96.8	81	120			

Sample ID **1909277-07AMSD** Batch ID: **93066** TestNo: **SW8260C** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_191003A** Analysis Date: **10/3/2019 3:11:00 PM** Prep Date: **10/3/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1909235
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_191003A

Sample ID	1909277-07AMSD	Batch ID:	93066	TestNo:	SW8260C	Units:	mg/L
SampType:	MSD	Run ID:	GCMS3_191003A	Analysis Date:	10/3/2019 3:11:00 PM	Prep Date:	10/3/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	2.46	0.0400	0.928	1.74	78.4	81	122	2.25	20	S
Ethylbenzene	0.908	0.120	0.928	0	97.9	73	127	5.19	20	
Toluene	0.972	0.120	0.928	0.104	93.6	77	122	2.81	20	
Total Xylenes	2.80	0.120	2.78	0	101	80	121	5.89	20	
Surr: 1,2-Dichloroethane-d4	932		1000		93.2	72	119	0	0	
Surr: 4-Bromofluorobenzene	1000		1000		100	76	119	0	0	
Surr: Dibromofluoromethane	1000		1000		100	85	115	0	0	
Surr: Toluene-d8	975		1000		97.5	81	120	0	0	

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1909235
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_190926A

The QC data in batch 92959 applies to the following samples: 1909235-01B, 1909235-02B

Sample ID	MB-92959	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 1:16:18 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								

Sample ID	LCS-92959	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 1:32:18 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.45	1.00	10.00	0	94.5	90	110			

Sample ID	LCSD-92959	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 1:48:18 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.46	1.00	10.00	0	94.6	90	110	0.153	20	

Sample ID	1909208-09CMS	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 9:10:17 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	295	10.0	200.0	116.7	88.9	90	110			S

Sample ID	1909208-09CMSD	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 9:26:17 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	308	10.0	200.0	116.7	95.5	90	110	4.38	20	

Sample ID	1909208-12CMS	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 9:58:17 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	238	10.0	200.0	68.71	84.6	90	110			S

Sample ID	1909208-12CMSD	Batch ID:	92959	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC4_190926A	Analysis Date:	9/26/2019 10:14:17 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	241	10.0	200.0	68.71	86.3	90	110	1.36	20	S

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1909235
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_190927A

The QC data in batch 92978 applies to the following samples: 1909235-01B

Sample ID	MB-92978	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 11:52:41 AM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								

Sample ID	LCS-92978	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 12:08:41 PM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.68	1.00	10.00	0	96.8	90	110			

Sample ID	LCSD-92978	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 12:24:41 PM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.62	1.00	10.00	0	96.2	90	110	0.580	20	

Sample ID	1909253-01BMS	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 6:50:07 PM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	6080	100	2000	4383	84.6	90	110			S

Sample ID	1909253-01BMSD	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 7:06:07 PM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	6100	100	2000	4383	86.0	90	110	0.462	20	S

Sample ID	1909255-01EMS	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC4_190927A	Analysis Date:	9/27/2019 11:54:07 PM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	598	10.0	200.0	431.8	82.9	90	110			S

Sample ID	1909255-01EMSD	Batch ID:	92978	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC4_190927A	Analysis Date:	9/28/2019 12:10:07 AM	Prep Date:	9/27/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	626	10.0	200.0	431.8	97.1	90	110	4.65	20	

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1909235
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: WC_190926A

The QC data in batch 92957 applies to the following samples: 1909235-01B, 1909235-02B

Sample ID	MB-92957	Batch ID:	92957	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_190926A	Analysis Date:	9/26/2019 5:30:00 PM	Prep Date:	9/26/2019

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

Sample ID	LCS-92957	Batch ID:	92957	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_190926A	Analysis Date:	9/26/2019 5:30:00 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	742	10.0	745.6	0	99.5	90	113			

Sample ID	1909204-01E-DUP	Batch ID:	92957	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_190926A	Analysis Date:	9/26/2019 5:30:00 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	2670	50.0	0	2680				0.374	5	

Sample ID	1909204-02E-DUP	Batch ID:	92957	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_190926A	Analysis Date:	9/26/2019 5:30:00 PM	Prep Date:	9/26/2019

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3680	50.0	0	3735				1.48	5	

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

DHL ANALYTICAL

January 06, 2020

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456

Order No.: 1912287

RE: EBDU #37

Dear Mark Larson:

DHL Analytical, Inc. received 3 sample(s) on 12/28/2019 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-19-24

Table of Contents

Miscellaneous Documents 3

CaseNarrative 1912287 6

Analytical Report 1912287 7

AnalyticalQCSummaryReport 1912287 10

№ 0863

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 12/26/2019 PAGE 1 OF 1
PO#: LAB WORK ORDER#: 1912287
PROJECT LOCATION OR NAME: EBDU #37
LAI PROJECT #: 19-0112-49 COLLECTOR: DS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	M300	FIELD NOTES
TMW 1	01	12/26/19	1351	W	5	3					X													X		X					
TMW 2	02	12/26/19	1410	W	5	3					X													X		X					
~~Windmill~~ SP-1	03	12/26/19	1200	W	5	3					X													X		X					
TOTAL	3																														

RELINQUISHED BY:(Signature) Daniel A Stefanow DATE/TIME 12/27/2019 08:10 RECEIVED BY: (Signature) LSO

RELINQUISHED BY:(Signature) LSO DATE/TIME 12/28/19 4:15pm RECEIVED BY: (Signature)

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

LABORATORY: OHL

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

LABORATORY USE ONLY:
RECEIVING TEMP: 4.3 THERM#: 78
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

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

LSO

Airbill No. LSO0BYGK

LSO0BYGK

1. To: Print Name (Person) | Phone (Important)

Company Name

Street Address (No P.O. Box or P.O. Box Zip Code*Deliveries)

Suite / Floor

City | State | Zip

2. From: Print Name (Person) | Phone (Important)

Company Name

Street Address

Suite / Floor

City | State | Zip

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

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

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

Assumed LSO Priority Overnight service unless otherwise noted.

☐ Deliver Without Delivery Signature (See Limits of Liability below)

Release Signature

L_____ x W_____ x H_____

4. Package: Weight:

Your Company's Billing Reference Information

Ship Date: (mm/dd/yy) 12/27/

5. Payment:

FOR DRIVER USE ONLY

Driver Number:

☐ Check here if LSO Supplies are used with LSO Ground Service.

Pick-up Location

Date:

Time:

City Code:

ILLEGIBLE HANDWRITING ON AIRBILL MAY DELAY TRANSIT TIMES OR RESULT IN NON-DELIVERY. LIMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss in a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. "Signature Required" service is only available when printing a label online at LSO.com. **NO DELIVERY SIGNATURE WILL BE OBTAINED FOR LSO EARLY OVERNIGHT SERVICE. Packaging provided by LSO is for EXPRESS USE ONLY – NEVER TO BE USED FOR LSO GROUND Service. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.** See LSO Service Guide for [illegible].

CUSTODY SEAL
DATE 12/27/19
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • www.qecusa.com

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Larson & Associates** Date Received: **12/30/2019**

Work Order Number **1912287** Received by: **AH**

Checklist completed by: _____ 12/30/2019 Reviewed by JD 12/30/2019
Signature Date Initials Date

Carrier name: LSO Ground

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**4.3** °C
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____
Water - ph>9 (S) or ph>10 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☑ LOT #
	Adjusted? _____		Checked by _____

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

Client contacted: _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *06-Jan-20*

CLIENT: Larson & Associates
Project: EBDU #37
Lab Order: 1912287

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, EPA and Standard Methods.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

DHL Analytical, Inc.

Date: *06-Jan-20*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW1
Project:	EBDU #37	**Lab ID:**	1912287-01
Project No:	16-0112-49	**Collection Date:**	12/26/19 01:31 PM
Lab Order:	1912287	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	01/02/20 08:05 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:05 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:05 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:05 PM
Surr: 1,2-Dichloroethane-d4	101	0	72-119		%REC	1	01/02/20 08:05 PM
Surr: 4-Bromofluorobenzene	100	0	76-119		%REC	1	01/02/20 08:05 PM
Surr: Dibromofluoromethane	104	0	85-115		%REC	1	01/02/20 08:05 PM
Surr: Toluene-d8	102	0	81-120		%REC	1	01/02/20 08:05 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **SNM**
Chloride	21.1	0.300	1.00		mg/L	1	01/03/20 06:29 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	390	10.0	10.0		mg/L	1	12/31/19 02:00 PM

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

DHL Analytical, Inc.

Date: *06-Jan-20*

CLIENT:	Larson & Associates	**Client Sample ID:**	TMW2
Project:	EBDU #37	**Lab ID:**	1912287-02
Project No:	16-0112-49	**Collection Date:**	12/26/19 02:10 PM
Lab Order:	1912287	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	01/02/20 08:31 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:31 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:31 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:31 PM
Surr: 1,2-Dichloroethane-d4	102	0	72-119		%REC	1	01/02/20 08:31 PM
Surr: 4-Bromofluorobenzene	104	0	76-119		%REC	1	01/02/20 08:31 PM
Surr: Dibromofluoromethane	103	0	85-115		%REC	1	01/02/20 08:31 PM
Surr: Toluene-d8	101	0	81-120		%REC	1	01/02/20 08:31 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **SNM**
Chloride	307	3.00	10.0		mg/L	10	01/03/20 01:52 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	1170	50.0	50.0		mg/L	1	12/31/19 02:00 PM

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

DHL Analytical, Inc.

Date: *06-Jan-20*

CLIENT:	Larson & Associates	**Client Sample ID:**	SP-1
Project:	EBDU #37	**Lab ID:**	1912287-03
Project No:	16-0112-49	**Collection Date:**	12/26/19 12:00 PM
Lab Order:	1912287	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **BTJ**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	01/02/20 08:56 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:56 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:56 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	01/02/20 08:56 PM
Surr: 1,2-Dichloroethane-d4	98.8	0	72-119		%REC	1	01/02/20 08:56 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	01/02/20 08:56 PM
Surr: Dibromofluoromethane	102	0	85-115		%REC	1	01/02/20 08:56 PM
Surr: Toluene-d8	101	0	81-120		%REC	1	01/02/20 08:56 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **SNM**
Chloride	259	3.00	10.0		mg/L	10	01/03/20 02:08 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	688	10.0	10.0		mg/L	1	12/31/19 02:00 PM

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

DHL Analytical, Inc.

Date: *06-Jan-20*

CLIENT: Larson & Associates
Work Order: 1912287
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_200102A

The QC data in batch 94359 applies to the following samples: 1912287-01A, 1912287-02A, 1912287-03A

Sample ID: **LCS-94359** Batch ID: **94359** TestNo: **SW8260D** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS3_200102A** Analysis Date: **1/2/2020 12:42:00 PM** Prep Date: **1/2/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0522	0.00200	0.0464	0	112	81	122			
Ethylbenzene	0.0481	0.00600	0.0464	0	104	73	127			
Toluene	0.0508	0.00600	0.0464	0	110	77	122			
Total Xylenes	0.148	0.00600	0.139	0	107	80	121			
Surr: 1,2-Dichloroethane-d4	50.2		50.00		100	72	119			
Surr: 4-Bromofluorobenzene	51.0		50.00		102	76	119			
Surr: Dibromofluoromethane	50.8		50.00		102	85	115			
Surr: Toluene-d8	51.1		50.00		102	81	120			

Sample ID: **MB-94359** Batch ID: **94359** TestNo: **SW8260D** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS3_200102A** Analysis Date: **1/2/2020 1:08:00 PM** Prep Date: **1/2/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.000800	0.00200								
Ethylbenzene	<0.00200	0.00600								
Toluene	<0.00200	0.00600								
Total Xylenes	<0.00200	0.00600								
Surr: 1,2-Dichloroethane-d4	50.4		50.00		101	72	119			
Surr: 4-Bromofluorobenzene	50.8		50.00		102	76	119			
Surr: Dibromofluoromethane	51.3		50.00		103	85	115			
Surr: Toluene-d8	51.0		50.00		102	81	120			

Sample ID: **1912277-07AMS** Batch ID: **94359** TestNo: **SW8260D** Units: **mg/L**
SampType: **MS** Run ID: **GCMS3_200102A** Analysis Date: **1/2/2020 5:03:00 PM** Prep Date: **1/2/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0446	0.00200	0.0464	0	96.1	81	122			
Ethylbenzene	0.0411	0.00600	0.0464	0	88.5	73	127			
Toluene	0.0434	0.00600	0.0464	0	93.6	77	122			
Total Xylenes	0.127	0.00600	0.139	0	91.2	80	121			
Surr: 1,2-Dichloroethane-d4	49.2		50.00		98.5	72	119			
Surr: 4-Bromofluorobenzene	51.1		50.00		102	76	119			
Surr: Dibromofluoromethane	51.1		50.00		102	85	115			
Surr: Toluene-d8	51.2		50.00		102	81	120			

Sample ID: **1912277-07AMSD** Batch ID: **94359** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_200102A** Analysis Date: **1/2/2020 5:29:00 PM** Prep Date: **1/2/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1912287
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_200102A

Sample ID: **1912277-07AMSD** Batch ID: **94359** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_200102A** Analysis Date: **1/2/2020 5:29:00 PM** Prep Date: **1/2/2020**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0433	0.00200	0.0464	0	93.3	81	122	2.96	20	
Ethylbenzene	0.0394	0.00600	0.0464	0	85.0	73	127	4.04	20	
Toluene	0.0420	0.00600	0.0464	0	90.4	77	122	3.42	20	
Total Xylenes	0.118	0.00600	0.139	0	84.7	80	121	7.46	20	
Surr: 1,2-Dichloroethane-d4	49.9		50.00		99.8	72	119	0	0	
Surr: 4-Bromofluorobenzene	49.7		50.00		99.4	76	119	0	0	
Surr: Dibromofluoromethane	51.2		50.00		102	85	115	0	0	
Surr: Toluene-d8	50.9		50.00		102	81	120	0	0	

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1912287
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_200103A

The QC data in batch 94365 applies to the following samples: 1912287-01B, 1912287-02B, 1912287-03B

Sample ID: MB-94365	Batch ID: 94365	TestNo: E300	Units: mg/L
SampType: MBLK	Run ID: IC4_200103A	Analysis Date: 1/3/2020 11:17:22 AM	Prep Date: 1/3/2020

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								

Sample ID: LCS-94365	Batch ID: 94365	TestNo: E300	Units: mg/L
SampType: LCS	Run ID: IC4_200103A	Analysis Date: 1/3/2020 11:33:22 AM	Prep Date: 1/3/2020

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.5	1.00	10.00	0	105	90	110			

Sample ID: LCSD-94365	Batch ID: 94365	TestNo: E300	Units: mg/L
SampType: LCSD	Run ID: IC4_200103A	Analysis Date: 1/3/2020 11:49:22 AM	Prep Date: 1/3/2020

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110	1.27	20	

Sample ID: 1912287-01BMS	Batch ID: 94365	TestNo: E300	Units: mg/L
SampType: MS	Run ID: IC4_200103A	Analysis Date: 1/3/2020 6:45:51 PM	Prep Date: 1/3/2020

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	39.1	1.00	20.00	21.08	89.9	90	110			

Sample ID: 1912287-01BMSD	Batch ID: 94365	TestNo: E300	Units: mg/L
SampType: MSD	Run ID: IC4_200103A	Analysis Date: 1/3/2020 7:01:51 PM	Prep Date: 1/3/2020

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	39.0	1.00	20.00	21.08	89.6	90	110	0.155	20	

Qualifiers:

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

CLIENT: Larson & Associates
Work Order: 1912287
Project: EBDU #37

ANALYTICAL QC SUMMARY REPORT

RunID: WC_191231B

The QC data in batch 94343 applies to the following samples: 1912287-01B, 1912287-02B, 1912287-03B

Sample ID: **MB-94343**	Batch ID: **94343**	TestNo: **M2540C**	Units: **mg/L**
SampType: **MBLK**	Run ID: **WC_191231B**	Analysis Date: **12/31/2019 2:00:00 PM**	Prep Date: **12/31/2019**

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

Sample ID: **LCS-94343**	Batch ID: **94343**	TestNo: **M2540C**	Units: **mg/L**
SampType: **LCS**	Run ID: **WC_191231B**	Analysis Date: **12/31/2019 2:00:00 PM**	Prep Date: **12/31/2019**

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

Sample ID: **1912286-01A-DUP**	Batch ID: **94343**	TestNo: **M2540C**	Units: **mg/L**
SampType: **DUP**	Run ID: **WC_191231B**	Analysis Date: **12/31/2019 2:00:00 PM**	Prep Date: **12/31/2019**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	985	50.0	0	1000				1.51	5	

Qualifiers:

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

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 674147

Larson and Associates, Inc., Midland, TX

Project Name: EBD4 37

Project Id: 19-0112-49
Contact: Mark Larson
Project Location:

Date Received in Lab: Fri 10.02.2020 09:20
Report Date: 10.08.2020 16:22
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	674147-001		674147-002		674147-003		674147-004		674147-005		674147-006	
	Field Id:	TMW-2		TMW-1		Stock Tank		TMW-3		TMW-4		Dup-1	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	09.30.2020 11:15		09.30.2020 12:00		09.30.2020 12:30		09.30.2020 13:00		09.30.2020 13:30		09.30.2020 15:00	
BTEX by EPA 8021B	***Extracted:***	10.04.2020 10:30		10.04.2020 10:30		10.04.2020 10:30		10.04.2020 10:30		10.04.2020 10:30		10.04.2020 10:30	
	Analyzed:	10.04.2020 14:01		10.06.2020 05:49		10.04.2020 14:42		10.04.2020 15:02		10.04.2020 15:23		10.06.2020 06:51	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		0.00227	0.00200	<0.00200	0.00200	<0.00200	0.00200	0.00322	0.00200	0.00314	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	0.00448	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	0.00448	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total BTEX		0.00227	0.00200	<0.00200	0.00200	<0.00200	0.00200	0.00770	0.00200	0.00314	0.00200	<0.00200	0.00200
Chloride by EPA 300	***Extracted:***	10.02.2020 15:10		10.02.2020 15:10		10.02.2020 15:10		10.02.2020 15:10		10.02.2020 15:10		10.02.2020 15:10	
	Analyzed:	10.02.2020 23:54		10.02.2020 23:59		10.03.2020 00:05		10.03.2020 00:11		10.03.2020 00:16		10.03.2020 00:22	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		314	5.00	22.6	2.50	274	2.50	212	5.00	1020	10.0	276	2.50
TDS by SM2540C	***Extracted:***												
	Analyzed:	10.05.2020 15:45		10.05.2020 15:45		10.05.2020 15:45		10.05.2020 15:45		10.05.2020 15:45		10.05.2020 15:45	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Dissolved Solids		1040	5.00	390	5.00	730	5.00	891	5.00	2040	5.00	794	5.00

BRL - Below Reporting Limit

Jessica Kramer

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

eurofins | Environment Testing Xenco

Analytical Report 674147

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBD4 37

19-0112-49

10.08.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

eurofins | Environment Testing Xenco

10.08.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **674147**
EBD4 37
Project Address:

Mark Larson :

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 674147. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 674147 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

eurofins | Environment Testing Xenco

Sample Cross Reference 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TMW-2	W	09.30.2020 11:15		674147-001
TMW-1	W	09.30.2020 12:00		674147-002
Stock Tank	W	09.30.2020 12:30		674147-003
TMW-3	W	09.30.2020 13:00		674147-004
TMW-4	W	09.30.2020 13:30		674147-005
Dup-1	W	09.30.2020 15:00		674147-006

CASE NARRATIVE

eurofins | Environment Testing Xenco

Client Name: Larson and Associates, Inc.

Project Name: EBD4 37

Project ID: *19-0112-49*
Work Order Number(s): *674147*

Report Date: *10.08.2020*
Date Received: *10.02.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **TMW-2** Matrix: Water Date Received:10.02.2020 09:20

Lab Sample Id: 674147-001 Date Collected: 09.30.2020 11:15

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:

Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**314**	5.00	mg/L	10.02.2020 23:54		10

Analytical Method: TDS by SM2540C

Tech: CHE

Analyst: CHE % Moisture:

Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**1040**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: KTL

Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 14:01	U	1
Toluene	108-88-3	**0.00227**	0.00200	mg/L	10.04.2020 14:01		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 14:01	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 14:01	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 14:01	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 14:01	U	1
Total BTEX		**0.00227**	0.00200	mg/L	10.04.2020 14:01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.04.2020 14:01	
4-Bromofluorobenzene	460-00-4	102	%	70-130	10.04.2020 14:01	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **TMW-1** Matrix: Water Date Received:10.02.2020 09:20
Lab Sample Id: 674147-002 Date Collected: 09.30.2020 12:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:
Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**22.6**	2.50	mg/L	10.02.2020 23:59		5

Analytical Method: TDS by SM2540C
Tech: CHE
Analyst: CHE % Moisture:
Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**390**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL
Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:
Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.06.2020 05:49	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.06.2020 05:49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.06.2020 05:49	
4-Bromofluorobenzene	460-00-4	84	%	70-130	10.06.2020 05:49	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **Stock Tank** Matrix: Water Date Received:10.02.2020 09:20

Lab Sample Id: 674147-003 Date Collected: 09.30.2020 12:30

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:

Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**274**	2.50	mg/L	10.03.2020 00:05		5

Analytical Method: TDS by SM2540C

Tech: CHE

Analyst: CHE % Moisture:

Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**730**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: KTL

Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 14:42	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.04.2020 14:42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.04.2020 14:42	
4-Bromofluorobenzene	460-00-4	104	%	70-130	10.04.2020 14:42	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **TMW-3** Matrix: Water Date Received:10.02.2020 09:20

Lab Sample Id: 674147-004 Date Collected: 09.30.2020 13:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:

Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**212**	5.00	mg/L	10.03.2020 00:11		10

Analytical Method: TDS by SM2540C

Tech: CHE

Analyst: CHE % Moisture:

Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**891**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: KTL

Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 15:02	U	1
Toluene	108-88-3	**0.00322**	0.00200	mg/L	10.04.2020 15:02		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 15:02	U	1
m,p-Xylenes	179601-23-1	**0.00448**	0.00400	mg/L	10.04.2020 15:02		1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 15:02	U	1
Total Xylenes	1330-20-7	**0.00448**	0.00200	mg/L	10.04.2020 15:02		1
Total BTEX		**0.00770**	0.00200	mg/L	10.04.2020 15:02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	100	%	70-130	10.04.2020 15:02	
4-Bromofluorobenzene	460-00-4	105	%	70-130	10.04.2020 15:02	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **TMW-4** Matrix: Water Date Received:10.02.2020 09:20
Lab Sample Id: 674147-005 Date Collected: 09.30.2020 13:30

Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE
Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:
Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1020**	10.0	mg/L	10.03.2020 00:16		20

Analytical Method: TDS by SM2540C
Tech: CHE
Analyst: CHE % Moisture:
Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**2040**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B
Tech: KTL
Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:
Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.04.2020 15:23	U	1
Toluene	108-88-3	**0.00314**	0.00200	mg/L	10.04.2020 15:23		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.04.2020 15:23	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.04.2020 15:23	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.04.2020 15:23	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.04.2020 15:23	U	1
Total BTEX		**0.00314**	0.00200	mg/L	10.04.2020 15:23		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	70-130	10.04.2020 15:23	
4-Bromofluorobenzene	460-00-4	106	%	70-130	10.04.2020 15:23	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 674147

Larson and Associates, Inc., Midland, TX

EBD4 37

Sample Id: **Dup-1** Matrix: Water Date Received:10.02.2020 09:20

Lab Sample Id: 674147-006 Date Collected: 09.30.2020 15:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 10.02.2020 15:10 % Moisture:

Seq Number: 3138810

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**276**	2.50	mg/L	10.03.2020 00:22		5

Analytical Method: TDS by SM2540C

Tech: CHE

Analyst: CHE % Moisture:

Seq Number: 3138888

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**794**	5.00	mg/L	10.05.2020 15:45		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: KTL

Analyst: KTL Date Prep: 10.04.2020 10:30 % Moisture:

Seq Number: 3138793

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	10.06.2020 06:51	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1
Total BTEX		<0.00200	0.00200	mg/L	10.06.2020 06:51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	102	%	70-130	10.06.2020 06:51	
4-Bromofluorobenzene	460-00-4	92	%	70-130	10.06.2020 06:51	

eurofins | Environment Testing Xenco

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

eurofins | Environment Testing Xenco

QC Summary 674147

Larson and Associates, Inc.

EBD4 37

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138810 — Matrix: Water — Date Prep: 10.02.2020
MB Sample Id: 7712552-1-BLK — LCS Sample Id: 7712552-1-BKS — LCSD Sample Id: 7712552-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	26.8	107	26.3	105	90-110	2	20	mg/L	10.02.2020 21:38	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138810 — Matrix: Water — Date Prep: 10.02.2020
Parent Sample Id: 674014-001 — MS Sample Id: 674014-001 S — MSD Sample Id: 674014-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	281	250	560	112	547	106	90-110	2	20	mg/L	10.02.2020 23:14	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3138810 — Matrix: Ground Water — Date Prep: 10.02.2020
Parent Sample Id: 674100-005 — MS Sample Id: 674100-005 S — MSD Sample Id: 674100-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	310	125	478	134	465	124	90-110	3	20	mg/L	10.02.2020 21:55	X

Analytical Method: TDS by SM2540C
Seq Number: 3138888 — Matrix: Water
MB Sample Id: 3138888-1-BLK — LCS Sample Id: 3138888-1-BKS — LCSD Sample Id: 3138888-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	989	99	961	96	80-120	3	10	mg/L	10.05.2020 15:45	

Analytical Method: TDS by SM2540C
Seq Number: 3138888 — Matrix: Water
Parent Sample Id: 674147-001 — MD Sample Id: 674147-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	1040	1040	0	10	mg/L	10.05.2020 15:45	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

eurofins | Environment Testing Xenco

QC Summary 674147

Larson and Associates, Inc.

EBD4 37

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3138793 Matrix: Water Date Prep: 10.04.2020

MB Sample Id: 7712592-1-BLK LCS Sample Id: 7712592-1-BKS LCSD Sample Id: 7712592-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0934	93	0.0908	91	70-130	3	25	mg/L	10.04.2020 10:56	
Toluene	<0.00200	0.100	0.0899	90	0.0871	87	70-130	3	25	mg/L	10.04.2020 10:56	
Ethylbenzene	<0.00200	0.100	0.0983	98	0.0939	94	70-130	5	25	mg/L	10.04.2020 10:56	
m,p-Xylenes	<0.00400	0.200	0.201	101	0.192	96	70-130	5	25	mg/L	10.04.2020 10:56	
o-Xylene	<0.00200	0.100	0.0980	98	0.0946	95	70-130	4	25	mg/L	10.04.2020 10:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		98		70-130	%	10.04.2020 10:56
4-Bromofluorobenzene	100		96		97		70-130	%	10.04.2020 10:56

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3138793 Matrix: Ground Water Date Prep: 10.04.2020

Parent Sample Id: 674046-014 MS Sample Id: 674046-014 S MSD Sample Id: 674046-014 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0958	96	0.104	104	70-130	8	25	mg/L	10.04.2020 11:37	
Toluene	<0.00200	0.100	0.0921	92	0.0992	99	70-130	7	25	mg/L	10.04.2020 11:37	
Ethylbenzene	<0.00200	0.100	0.100	100	0.110	110	70-130	10	25	mg/L	10.04.2020 11:37	
m,p-Xylenes	<0.00400	0.200	0.206	103	0.224	112	70-130	8	25	mg/L	10.04.2020 11:37	
o-Xylene	<0.00200	0.100	0.100	100	0.110	110	70-130	10	25	mg/L	10.04.2020 11:37	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	95		96		70-130	%	10.04.2020 11:37
4-Bromofluorobenzene	93		97		70-130	%	10.04.2020 11:37

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Page 629 of 733

674147 ~~1074149~~ №1358

CHAIN-OF-CUSTODY

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

Data Reported to:

DATE: 10/2/20 PAGE 1 OF 1
PO#: LAB WORK ORDER#:
PROJECT LOCATION OR NAME: EBD4 37
LAI PROJECT #: 19-0112-49 COLLECTOR: DS

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: MNT

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TBLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
TMW-2		9/30/20	1115	W	5	X			X		X														X			X		
TMW-1		9/30/20	1200	W	5	X			X		X														X			X		
Stock tank		9/30/20	1230	W	5	X			X		X														X			X		
TMW-3		9/30/20	1300	W	5	X			X		X														X			X		BILL DIRECT TO
TMW-4		9/30/20	1330	W	5	X			X		X														X			X		APACHE
DUP-1		9/30/20	1500	W	5	X			X		X														X			X		
TOTAL	6																													

RELINQUISHED BY:(Signature) DS DATE/TIME 10/2/20 0920 RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
LABORATORY: XENCO

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

LABORATORY USE ONLY:
RECEIVING TEMP: 3.2°C THERM#:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM
Final 1.000
Page 15 of 16

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 10.02.2020 09.20.00 AM

Work Order #: 674147

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	Limited sample client brought a 250 cool for TDS
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**N/A**	
#18 Water VOC samples have zero headspace?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: AJA PH Device/Lot#: 10BHD1991

Checklist completed by: Brianna Teel Date: 10.02.2020

Brianna Teel

Checklist reviewed by: Holly Taylor Date: 10.05.2020

Holly Taylor

eurofins | Environment Testing Xenco

Certificate of Analysis Summary 680330

Larson and Associates, Inc., Midland, TX

Project Name: EBDU 37

Project Id: 19-0112-49
Contact: Mark Larson
Project Location:

Date Received in Lab: Wed 12.09.2020 08:51
Report Date: 12.16.2020 09:36
Project Manager: Holly Taylor

Analysis Requested													
	Lab Id:	680330-001		680330-002		680330-003		680330-004		680330-005		680330-006	
	Field Id:	TMW-1		TMW-3		TMW-2		TMW-4		Windmill		DUP-1	
	Depth:												
	Matrix:	WATER		WATER		WATER		WATER		WATER		WATER	
	Sampled:	12.07.2020 10:02		12.07.2020 10:43		12.07.2020 11:20		12.07.2020 11:57		12.07.2020 11:57		12.07.2020 00:00	
BTEX by EPA 8021B	***Extracted:***	12.10.2020 15:00		12.10.2020 15:00		12.10.2020 15:00		12.10.2020 15:00		12.10.2020 15:00		12.10.2020 15:00	
	Analyzed:	12.11.2020 05:08		12.11.2020 05:34		12.11.2020 06:00		12.11.2020 06:25		12.11.2020 06:52		12.11.2020 07:17	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Benzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Toluene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Ethylbenzene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
m,p-Xylenes		<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400	<0.00400	0.00400
o-Xylene		<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200	<0.00200	0.00200
Total Xylenes		<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000
Total BTEX		<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000	<0.002000	0.002000
Chloride by EPA 300	***Extracted:***	12.10.2020 15:15		12.10.2020 15:15		12.10.2020 15:15		12.10.2020 15:15		12.10.2020 15:15		12.10.2020 15:15	
	Analyzed:	12.10.2020 18:02		12.10.2020 18:07		12.10.2020 18:12		12.10.2020 18:42		12.10.2020 18:47		12.10.2020 22:45	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Chloride		13.1	2.50	214	5.00	298	5.00	987	10.0	287	2.50	278	2.50
TDS by SM2540C	***Extracted:***												
	Analyzed:	12.10.2020 15:11		12.10.2020 15:11		12.10.2020 15:11		12.10.2020 15:11		12.10.2020 15:11		12.10.2020 15:11	
	Units/RL:	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL	mg/L	RL
Total Dissolved Solids		383	5.00	948	5.00	1050	5.00	2300	5.00	930	5.00	908	5.00

BRL - Below Reporting Limit

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

eurofins | Environment Testing Xenco

Analytical Report 680330

for

Larson and Associates, Inc.

Project Manager: Mark Larson

EBDU 37

19-0112-49

12.16.2020

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-20-38), Arizona (AZ0765), Florida (E871002-33), Louisiana (03054)
Oklahoma (2020-014), North Carolina (681), Arkansas (20-035-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-20-26), Arizona (AZ0809)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-20-18)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-20-23)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-21)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-20-8)
Xenco-Tampa: Florida (E87429), North Carolina (483)

eurofins | Environment Testing Xenco

12.16.2020

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: Eurofins Xenco, LLC Report No(s): **680330**
EBDU 37
Project Address:

Mark Larson:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the Eurofins Xenco, LLC Report Number(s) 680330. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by Eurofins Xenco, LLC. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 680330 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting Eurofins Xenco, LLC to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor

Holly Taylor
Project Manager

A Small Business and Minority Company

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

eurofins | Environment Testing Xenco

Sample Cross Reference 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TMW-1	W	12.07.2020 10:02		680330-001
TMW-3	W	12.07.2020 10:43		680330-002
TMW-2	W	12.07.2020 11:20		680330-003
TMW-4	W	12.07.2020 11:57		680330-004
Windmill	W	12.07.2020 11:57		680330-005
DUP-1	W	12.07.2020 00:00		680330-006

eurofins | Environment Testing Xenco

CASE NARRATIVE

Client Name: Larson and Associates, Inc.
Project Name: EBDU 37

Project ID: *19-0112-49*
Work Order Number(s): *680330*

Report Date: *12.16.2020*
Date Received: *12.09.2020*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-3144538 BTEX by EPA 8021B
Surrogate 1,4-Difluorobenzene recovered above QC limits. Samples affected are: 7716864-1-BKS,7716864-1-BSD,680330-001 S,680330-001 SD,680330-004,680330-003,680330-002,680330-005,680330-006.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Samples affected are: 7716864-1-BSD,680330-001,680330-003,680330-004,680330-005,680330-006.

Toluene RPD was outside laboratory control limits.
Samples in the analytical batch are: 680330-001, -002, -003, -004, -005, -006

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **TMW-1** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-001 Date Collected: 12.07.2020 10:02

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**13.1**	2.50	mg/L	12.10.2020 18:02		5

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**383**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 05:08	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 05:08	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 05:08	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 05:08	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 05:08	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 05:08	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 05:08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	85	%	70-130	12.11.2020 05:08	
4-Bromofluorobenzene	460-00-4	146	%	70-130	12.11.2020 05:08	**

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **TMW-3** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-002 Date Collected: 12.07.2020 10:43

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**214**	5.00	mg/L	12.10.2020 18:07		10

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**948**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 05:34	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 05:34	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 05:34	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 05:34	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 05:34	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 05:34	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 05:34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	180	%	70-130	12.11.2020 05:34	**
4-Bromofluorobenzene	460-00-4	115	%	70-130	12.11.2020 05:34	

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **TMW-2** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-003 Date Collected: 12.07.2020 11:20

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**298**	5.00	mg/L	12.10.2020 18:12		10

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**1050**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 06:00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 06:00	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 06:00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 06:00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 06:00	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 06:00	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 06:00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	200	%	70-130	12.11.2020 06:00	**
4-Bromofluorobenzene	460-00-4	136	%	70-130	12.11.2020 06:00	**

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **TMW-4** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-004 Date Collected: 12.07.2020 11:57

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**987**	10.0	mg/L	12.10.2020 18:42		20

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**2300**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 06:25	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 06:25	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 06:25	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 06:25	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 06:25	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 06:25	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 06:25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	205	%	70-130	12.11.2020 06:25	**
4-Bromofluorobenzene	460-00-4	131	%	70-130	12.11.2020 06:25	**

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **Windmill** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-005 Date Collected: 12.07.2020 11:57

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**287**	2.50	mg/L	12.10.2020 18:47		5

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**930**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 06:52	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 06:52	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 06:52	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 06:52	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 06:52	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 06:52	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 06:52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	175	%	70-130	12.11.2020 06:52	**
4-Bromofluorobenzene	460-00-4	134	%	70-130	12.11.2020 06:52	**

eurofins | Environment Testing Xenco

Certificate of Analytical Results 680330

Larson and Associates, Inc., Midland, TX

EBDU 37

Sample Id: **DUP-1** Matrix: Water Date Received:12.09.2020 08:51

Lab Sample Id: 680330-006 Date Collected: 12.07.2020 00:00

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Tech: CHE

Analyst: CHE Date Prep: 12.10.2020 15:15 % Moisture:

Seq Number: 3144579

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**278**	2.50	mg/L	12.10.2020 22:45		5

Analytical Method: TDS by SM2540C

Tech: SPC

Analyst: SPC % Moisture:

Seq Number: 3144605

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	**908**	5.00	mg/L	12.10.2020 15:11		1

Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B

Tech: MNR

Analyst: MNR Date Prep: 12.10.2020 15:00 % Moisture:

Seq Number: 3144538

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/L	12.11.2020 07:17	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/L	12.11.2020 07:17	UF	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/L	12.11.2020 07:17	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/L	12.11.2020 07:17	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/L	12.11.2020 07:17	U	1
Total Xylenes	1330-20-7	<0.002000	0.002000	mg/L	12.11.2020 07:17	U	1
Total BTEX		<0.002000	0.002000	mg/L	12.11.2020 07:17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	200	%	70-130	12.11.2020 07:17	**
4-Bromofluorobenzene	460-00-4	136	%	70-130	12.11.2020 07:17	**

eurofins | Environment Testing Xenco

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit. **ND** Not Detected.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

eurofins | Environment Testing Xenco

QC Summary 680330

Larson and Associates, Inc.

EBDU 37

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3144579 — Matrix: Water — Date Prep: 12.10.2020
MB Sample Id: 7716819-1-BLK — LCS Sample Id: 7716819-1-BKS — LCSD Sample Id: 7716819-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	26.4	106	26.4	106	90-110	0	20	mg/L	12.10.2020 16:22	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3144579 — Matrix: Drinking Water — Date Prep: 12.10.2020
Parent Sample Id: 680611-001 — MS Sample Id: 680611-001 S — MSD Sample Id: 680611-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	15.9	25.0	44.5	114	43.4	110	90-110	3	20	mg/L	12.10.2020 16:47	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3144579 — Matrix: Drinking Water — Date Prep: 12.10.2020
Parent Sample Id: 680614-001 — MS Sample Id: 680614-001 S — MSD Sample Id: 680614-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	12.8	25.0	40.8	112	40.2	110	90-110	1	20	mg/L	12.10.2020 18:26	X

Analytical Method: TDS by SM2540C
Seq Number: 3144605 — Matrix: Water
MB Sample Id: 3144605-1-BLK — LCS Sample Id: 3144605-1-BKS — LCSD Sample Id: 3144605-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	999	100	995	100	80-120	0	10	mg/L	12.10.2020 15:11	

Analytical Method: TDS by SM2540C
Seq Number: 3144605 — Matrix: Water
Parent Sample Id: 680330-001 — MD Sample Id: 680330-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	383	385	1	10	mg/L	12.10.2020 15:11	

Analytical Method: TDS by SM2540C
Seq Number: 3144605 — Matrix: Ground Water
Parent Sample Id: 680549-005 — MD Sample Id: 680549-005 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	655	660	1	10	mg/L	12.10.2020 15:11	

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

eurofins | Environment Testing Xenco

QC Summary 680330

Larson and Associates, Inc.

EBDU 37

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3144538 Matrix: Water Date Prep: 12.10.2020
MB Sample Id: 7716864-1-BLK LCS Sample Id: 7716864-1-BKS LCSD Sample Id: 7716864-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.107	107	0.0935	94	70-130	13	25	mg/L	12.11.2020 02:07	
Toluene	<0.00200	0.100	0.112	112	0.0813	81	70-130	32	25	mg/L	12.11.2020 02:07	F
Ethylbenzene	<0.00200	0.100	0.110	110	0.0900	90	70-130	20	25	mg/L	12.11.2020 02:07	
m,p-Xylenes	<0.00400	0.200	0.223	112	0.185	93	70-130	19	25	mg/L	12.11.2020 02:07	
o-Xylene	<0.00200	0.100	0.111	111	0.0983	98	70-130	12	25	mg/L	12.11.2020 02:07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	90		147	**	163	**	70-130	%	12.11.2020 02:07
4-Bromofluorobenzene	105		118		133	**	70-130	%	12.11.2020 02:07

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3144538 Matrix: Water Date Prep: 12.10.2020
Parent Sample Id: 680330-001 MS Sample Id: 680330-001 S MSD Sample Id: 680330-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.112	112	0.110	110	70-130	2	25	mg/L	12.11.2020 02:59	
Toluene	<0.00200	0.100	0.0939	94	0.112	112	70-130	18	25	mg/L	12.11.2020 02:59	
Ethylbenzene	<0.00200	0.100	0.108	108	0.111	111	70-130	3	25	mg/L	12.11.2020 02:59	
m,p-Xylenes	<0.00400	0.200	0.221	111	0.228	114	70-130	3	25	mg/L	12.11.2020 02:59	
o-Xylene	<0.00200	0.100	0.112	112	0.115	115	70-130	3	25	mg/L	12.11.2020 02:59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	160	**	151	**	70-130	%	12.11.2020 02:59
4-Bromofluorobenzene	120		130		70-130	%	12.11.2020 02:59

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Page 645 of 733

№ 1429

6800330

CHAIN-OF-CUSTODY

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

Data Reported to:

DATE: 12/8/20 PAGE 1 OF 1

PO#: LAB WORK ORDER#:

PROJECT LOCATION OR NAME: EBDU 37

LAI PROJECT #: 19-0112-49 COLLECTOR: TJ + KN

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	OIL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐	8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐	TCLP VOC ☐	TCLP - PEST ☐ HERB ☐	Semi-VOC ☐	TOTAL METALS (RCRA) ☐	OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐	TCLP ☐	RCI ☐ TOX ☐	FLASHPOINT ☐	TDS ☒ TSS ☐	% MOISTURE ☐	pH ☐	CYANIDE ☐	EXPLOSIVES ☐	HEXAVALENT CHROMIUM ☐	CHLORIDES ☒ ANIONS ☐	PECHLORATE ☐	ALKALINITY ☐	FIELD NOTES
TMW-1		12/7/20	1002	W	5	X			X		X																				X				X					
TMW-3			1043																																				
TMW-2			1120																																				
TMW-4			1157																																				
windmill		12/8/20	1157																																				
DUP-1																																							
TOTAL	6																																						

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

RELINQUISHED BY:(Signature) Tulin Ceyhan DATE/TIME 12/9/20 8:51 a.m. RECEIVED BY: (Signature)

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

LABORATORY: Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP: 5.9c THERM#: IR-8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL #
☑ HAND DELIVERED

Received by OCD: 1/9/2025 3:05:52 PM
Final 1.000
Page 15 of 16
Released to Imaging: 1/9/2025 4:04:07 PM

Eurofins Xenco, LLC

Prelogin/Nonconformance Report- Sample Log-In

Client: Larson and Associates, Inc.

Date/ Time Received: 12.09.2020 08.51.00 AM

Work Order #: 680330

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**Yes**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: JKR PH Device/Lot#: 10BDH1991

Checklist completed by: Brianna Teel Date: 12.09.2020

Brianna Teel

Checklist reviewed by: Holly Taylor Date: 12.09.2020

Holly Taylor

1RP-5636
2021
First (1st) Quarter
GROUNDWATER MONITORING REPORT
(January – March)

East Blinebry Drinkard Unit #37
Lea County, New Mexico

Latitude: N 32.47956°
Longitude: W -103.12206°

LAI Project No. 19-0112-49

April 20, 2021

Prepared for:
Apache Corporation
303 Veterans Airpark Lane
Midland, Texas 79705

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 202
Midland, Texas 79701

Mark J. Larson, P.G.
Certified Professional Geologist #10490

Daniel A. St. Germain
Staff Geologist

This Page Intentionally Left Blank

Table of Contents

1.0 Executive Summary 1
2.0 Introduction 1
2.1 Background 2
2.2 Monitoring Well Installations 2
3.0 DEPTH TO GROUNDWATER AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION 3
4.0 Groundwater Samples and Analysis 3
4.1 Organic Analysis 4
4.2 Inorganic Analysis 4
5.0 Conclusions 4

Tables

Table 1 Monitor Well Construction and Gauging Summary
Table 2 Groundwater Sample Analytical Data Summary

Figures

Figure 1 Topographic Map
Figure 2 Aerial Map
Figure 3 Groundwater Potentiometric Map, March 11, 2021
Figure 4 Chloride Concentration in Groundwater Map, March 11, 2021
Figure 5 TDS Concentration in Groundwater Map, March 11, 2021

Appendices

Appendix A Initial C-141
Appendix B OCD Communications
Appendix C Boring Logs
Appendix D Laboratory Report

1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this first quarter groundwater monitoring report on behalf of Apache Corporation (Apache) for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents the 2021 first quarter (January – March) groundwater gauging summary and laboratory analysis of groundwater samples collected from four (4) monitor wells (TMW-1, TMW-2, TMW-3, and TMW-4) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic position is North 32.479569° and West -103.122061°.

The following groundwater monitoring activities occurred on March 11, 2021:

- Gauged depth to ground water in four (4) monitor wells (TMW-1 through TMW-4).
- Purged and collected groundwater samples from four (4) monitor wells (TMW-1 through TMW-4).
- Collect groundwater samples from a windmill located south from the Site.
- Analyzed groundwater samples for benzene, toluene, ethylbenzene, and xylenes (BTEX), total dissolved solids (TDS), and chloride.

The following observations are documented in this report:

- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- Groundwater flow was from north to south at gradients between 0.0012 feet per foot (ft/ft) and 0.0019 ft/ft.
- BTEX was not reported above the analytical method reporting limits (RL) or New Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples collected on March 11, 2021.
- Chloride was reported above the WQCC domestic water quality standard of 250 milligrams per liter (mg/L) in groundwater samples collected from wells TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L).
- TDS was reported above the WQCC domestic water quality standard of 1,000 mg/L in the groundwater sample collected from well TMW-4 (1960 mg/L).

Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, TDS, and chloride. Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 5 working days prior to each groundwater monitoring event. OCD will be notified immediately upon receipt laboratory analysis with significant increase of analyte concentrations.

2.0 INTRODUCTION

Larson & Associates, Inc. (LAI), on behalf of Apache Corporation (Apache), has prepared this first quarter groundwater monitoring report for submittal to the New Mexico Oil Conservation Division (OCD) District 1 in Hobbs and Santa Fe, New Mexico. This report presents the first quarter laboratory analysis of groundwater samples collected from monitor wells (TMW-1, TMW-2, TMW-3, TMW-4) and a windmill at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Lea County, New Mexico. The geodetic

position is North 32.479569° and West -103.122061°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

2.1 Background

The spill originated from a flowline at a pipeline junction located about 720 feet east from Well #37. Produced fluids (oil and water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown. The spill is designated as a major release due to the unknown volume of the release. The spill covered an area measuring about 31,320 square feet or about 0.72 acres. The initial C-141 was submitted on July 26, 2019 and was assigned remediation permit number 1RP-5636. Appendix A presents the initial C-141.

On October 29, 2019, Apache submitted to the OCD a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico, October 29, 2019". On December 23, 2019, OCD approved an addendum to the remediation plan based on a telephone call on December 20, 2019, with the following conditions:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered.
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs.
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient.
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019.
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20-mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil.
- Seed Area 1 and Area 2 following remediation according to landowner requirement.
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Appendix B presents the OCD communications.

2.2 Monitoring Well Installations

On September 29, 2019, Scarborough Drilling Inc. (SDI), under LAI supervision, installed two (2) monitoring wells (TMW-1 and TMW-2) under permits issued by the State of New Mexico Office of the State Engineer. Monitoring wells TMW-3 and TMW-4 were repositioned to avoid removing thick vegetation and/or crossing underground pipelines. Monitoring well TMW-3 was repositioned about 100 feet west from its original location. Monitoring well TMW-4 was repositioned about 30 feet east from its original location. OCD approved the relocation of the monitoring wells September 22, 2020. Appendix B presents OCD communications.

Released to Imaging: 1/9/2025 4:04:07 PM

Monitoring wells TMW-3 and TMW-4 were drilled to approximately 68.41 feet bgs and 70.09 feet bgs, respectively. Both wells were completed with two (2) inch threaded schedule 40 PVC casing and approximately twenty (20) feet of 0.01-inch factory slotted screen. The screens were positioned above and below the groundwater level observed during drilling. Graded silica sand was placed around the well screens to about two (2) feet above the screens. The remaining annulus above the screens was filled to about 1-foot bgs with bentonite chips and hydrated with potable water. The wells are secured with locking steel covers.

The monitor wells (TMW-1 through TMW-4) were surveyed by West Company, a State of New Mexico Licensed Professional Land Surveyor (LPS Number 23263) for geodetic position and elevation, including surface elevation and top of casing (TOC) elevation. Figure 2 presents the monitoring well locations. Appendix C presents the boring logs and monitoring well completion records.

3.0 DEPTH TO GROUNDWATER AND GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION

On March 11, 2021, depth to groundwater was gauged in wells TMW-1 through TMW-4. Groundwater was measured at 49.41 (TMW-1), 58.0 (TMW-2), 57.59 (TMW-3), and 57.4 (TMW-4) feet below top of casing (TOC). The groundwater potentiometric surface elevation ranged from 3,366.16 feet above mean sea level (MSL) at TMW-2 (up gradient) to 3,365.16 above MSL at TMW-1 (down gradient). Groundwater flow from north to south at gradients between 0.0012 feet per foot (ft/ft) and 0.0019 ft/ft.

No significant changes in potentiometric surface elevation, flow direction, or gradient were observed on March 11, 2021. Figure 3 presents the groundwater potentiometric surface map on March 11, 2021. Table 1 presents monitor well construction and gauging summary.

4.0 GROUNDWATER SAMPLES AND ANALYSIS

On March 10, 2021 LAI personnel collected groundwater samples from monitoring wells TMW-1 through TMW-4, using the low stress or low flow method following EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low flow rate until environmental parameters stabilize.

Groundwater samples were collected from discharge through dedicated disposable Tygon tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and laboratory grade detergent (alconox) and rinsed with distilled water. The samples were transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody control to Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Midland, Texas. A duplicate sample was collected from the windmill for laboratory quality assurance and quality control (QA/QC).

Xenco analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, total dissolved solids (TDS) by Method SM 2540C, and chloride by EPA Method 300. Table 2 presents the laboratory analytical summary. Appendix B presents the laboratory report.

Released to Imaging: 1/9/2025 4:04:07 PM

4.1 Organic Analysis

Xenco reported BTEX concentrations below the laboratory analytical reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards in groundwater samples from TMW-1 through TMW-4 and windmill March 11, 2021. The results are consistent with the results from previous groundwater monitoring events.

4.2 Inorganic Analysis

Chloride concentrations remain above the WQCC domestic water quality standard (250 mg/L) in samples collected from monitoring wells TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L). Chloride concentrations were below WQCC domestic water quality standards in monitoring wells TMW-1 (10.9 mg/L) and TMW-2 (213 mg/L), and consistent with previous monitoring events. The duplicate (QA/QC) sample (Dup-1) collected from the windmill is within 2.8 percent (259 mg/L) of the original chloride value (252 mg/L) for the windmill. No data quality exceptions were noted in Xenco case narratives. Figure 4 presents the chloride isopleth map for March 11, 2021.

TDS concentrations remain above the WQCC domestic water quality standard (1,000 mg/L) in samples collected from TMW-2 (1,000 mg/L) and TMW-4 (1,960 mg/L). TDS concentrations remain below the WQCC domestic water quality standards in monitoring wells TMW-1 (360 mg/L), TMW-3, (900 mg/L), and the windmill (745 mg/L). Figure 5 presents the TDS isopleth map for March 11, 2021.

5.0 CONCLUSIONS

The following observations are made in this report:

- The groundwater flow direction was from north to south at gradients between approximately 0.0012 and 0.0019 ft/ft.
- No significant changes were observed in potentiometric surface elevation, flow direction, or gradient during the monitoring period.
- BTEX was reported below the analytical reporting limit and WQCC human health standards in groundwater samples collected from TMW-1 through TMW-4.
- Chloride concentrations were reported above WQCC domestic water quality standard (250 mg/L) in groundwater samples collected from TMW-2 (293 mg/L), TMW-4 (834 mg/L), and the windmill (252 mg/L).
- TDS concentrations were reported above the WQCC domestic water quality standard (1,000 mg/L) in groundwater samples collected from TMW-2 (1,000 mg/L) and TMW-4 (1,960 mg/L).

- Apache will continue quarterly monitoring of groundwater in wells TMW-1 through TMW-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS.

Notice will be provided to OCD in Hobbs and Santa Fe, New Mexico at least 7 working days prior to each groundwater monitoring event. The OCD will be notified immediately upon receipt of laboratory analysis with significant increase of analyte concentrations.

Released to Imaging: 1/9/2025 4:04:07 PM

Tables

Released to Imaging: 1/9/2025 4:04:07 PM
Received by OCD: 1/9/2025 3:05:52 PM

Table 1
1RP-5636
Monitoring Well Completion and Gauging Summary
Apache Corportaion, EBDU #37
Lea County, New Mexico

Well Information									Groundwater Data				
Well No.	Date Drilled	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Water (feet TOC)	Depth to Water (feet BGS)	Water Column Height (feet)	Groundwater Elevation (feet AMSL)
TMW-1	09/19/2019	74.36	71.00	2	3411.21	42.32 - 61.97	3.36	3,414.57	09/23/2019	46.18	42.82	28.18	3,368.39
									12/26/2019	48.90	45.54	26.27	3,365.67
									09/30/2020	49.31	45.95	25.05	3,365.26
									12/07/2020	49.42	46.06	24.94	3,365.15
									03/11/2021	49.41	46.05	24.95	3,365.16
TMW-2	09/19/2019	82.86	80.00	2	3421.30	47.50 - 67.50	2.86	3,424.16	09/23/2019	55.80	52.94	27.06	3,368.36
									12/26/2019	57.50	54.64	25.36	3,366.66
									09/30/2020	58.01	55.15	24.85	3,366.15
									12/07/2020	58.08	55.22	24.78	3,366.08
									03/11/2021	58.00	55.14	24.86	3,366.16
TWM-3	09/29/2020	71.29	68.41	2	3420.33	49.96 - 68.41	2.88	3,423.21	09/23/2019	--	--	--	--
									12/26/2020	--	--	--	--
									09/30/2020	57.62	54.74	13.67	3,365.59
									12/07/2020	57.68	54.80	13.61	3,365.53
									03/11/2021	57.59	54.71	13.70	3,365.62
TMW-4	09/29/2020	73.25	70.09	2	3420.03	49.96 - 69.76	3.16	3,423.19	09/23/2019	--	--	--	--
									12/26/2019	--	--	--	--
									09/30/2020	57.39	54.23	15.86	3,365.80
									12/07/2020	57.45	54.29	15.80	3,365.74
									03/11/2021	57.40	54.24	15.85	3,365.79

Notes: monitoring wells installed by Environ-Drill, Albuquerque, New Mexico with 2 inch schedule 40 PVC casing and screen
bgs: below ground surface
TOC: top of casing
AMSL: denotes elevation in feet above mean sea level

Table 2
1RP-5636
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU 37, Lea County, New Mexico

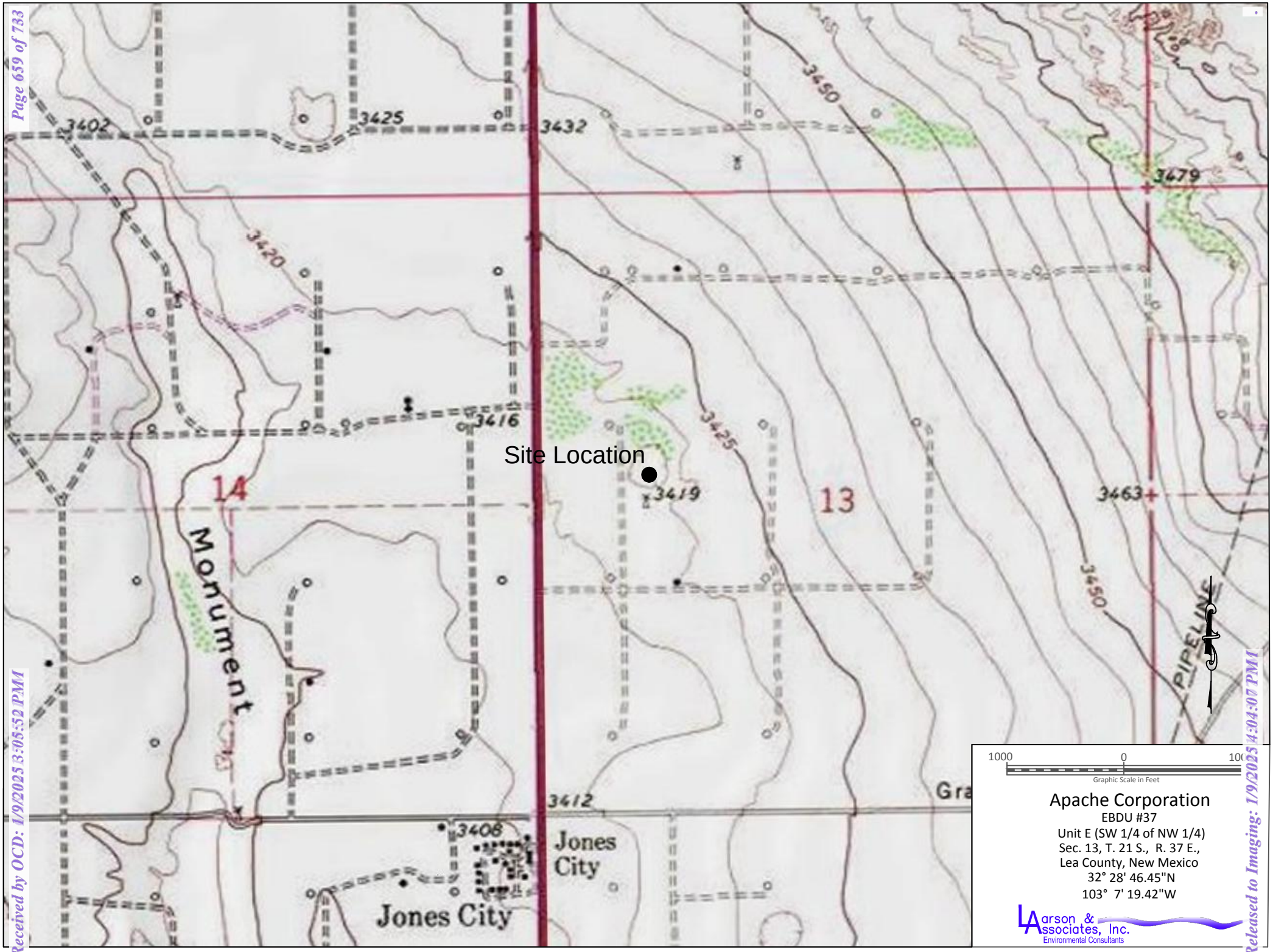
Sample	Collection Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	TDS (mg/L)	Depth To Water (Feet TOC)
NMWQCC Standard:		*0.005	*1	*0.7	*0.62	**250	**1,000	
Windmill	(1) 08/01/2019	<0.001	<0.001	<0.001	<0.003	232	732	--
	(2) 09/23/2019	--	--	--	--	--	--	--
	(2) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**259**	688	--
	(3) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**274**	730	--
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**287**	930	--
	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**252**	745	--
TMW-1	(2) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	37.4	400	46.18
	(2) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	21.1	390	48.9
	(3) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	22.6	390	49.31
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	13.1	383	49.42
	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	10.9	360	
TMW-2	(2) 09/23/2019	<0.00800	<0.00200	<0.00200	<0.00200	**338**	**1,220**	55.8
	(2) 12/26/2019	<0.000800	<0.00200	<0.00200	<0.00200	**307**	**1,170**	57.5
	(3) 09/30/2020	<0.00200	0.00227	<0.00200	<0.00200	**314**	**1,040**	58.01
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**298**	**1,050**	58.06
	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**293**	**1,000**	
TMW-3	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	(3) 09/30/2020	<0.00200	0.00322	<0.00200	0.00448	212	891	57.62
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	214	948	57.68
	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	213	900	
TMW-4	09/23/2019	--	--	--	--	--	--	--
	12/26/2019	--	--	--	--	--	--	--
	(3) 09/30/2020	<0.00200	0.00314	<0.00200	<0.00200	**1,020**	**2,040**	57.39
	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**987**	**2,300**	57.45
	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**834**	**1,960**	
DUP-1 (Windmill)	(3) 09/30/2020	<0.00200	<0.00200	<0.00200	<0.00200	**276**	794	--
DUP-1 (Windmill)	(3) 12/07/2020	<0.00200	<0.00200	<0.00200	<0.00200	**278**	908	--
DUP-1 (Windmill)	(3) 03/11/2021	<0.00200	<0.00200	<0.00200	<0.00400	**259**	798	--

Table 2
1RP-5636
Groundwater Sample Analytical Data Summary
Apache Corporation, EBDU 37, Lea County, New Mexico

Notes:
('): analysis performed by Cardinal Laboratories, Hobbs, New Mexico, by EPA SW-846 Method 8021B (BTEX) and titration methods (chloride and TDS).
([2]): analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([3]): analysis performed by Xenco Laboratories, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride).
([4]): anaylis performed by Eurofins-Xenco, Midland, Texas, by EPA SW-846 Method 8021B (BTEX) and Method 300 (chloride). Units reported as ug/L in report, converted to mg/L.
< values: concentration is less than method reporting limit (RL).
*: NMWQCC Human Health Standard
**: NMWQCC Domestic Water Quality Standard
--: no data available
TOC: top of casing
All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)
Bold and highlighted denotes analyte concentration exceeds NMWQCC domestic water quality standard

Figures

Page 659 of 733



Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Figure 1 - Topographic Map

Page 660 of 733



Figure 2 - Aerial Map

Received by OCD: 1/9/2025 3:05:52 PM1
Released to Imaging: 1/9/2025 4:04:07 PM1

Page 661 of 733

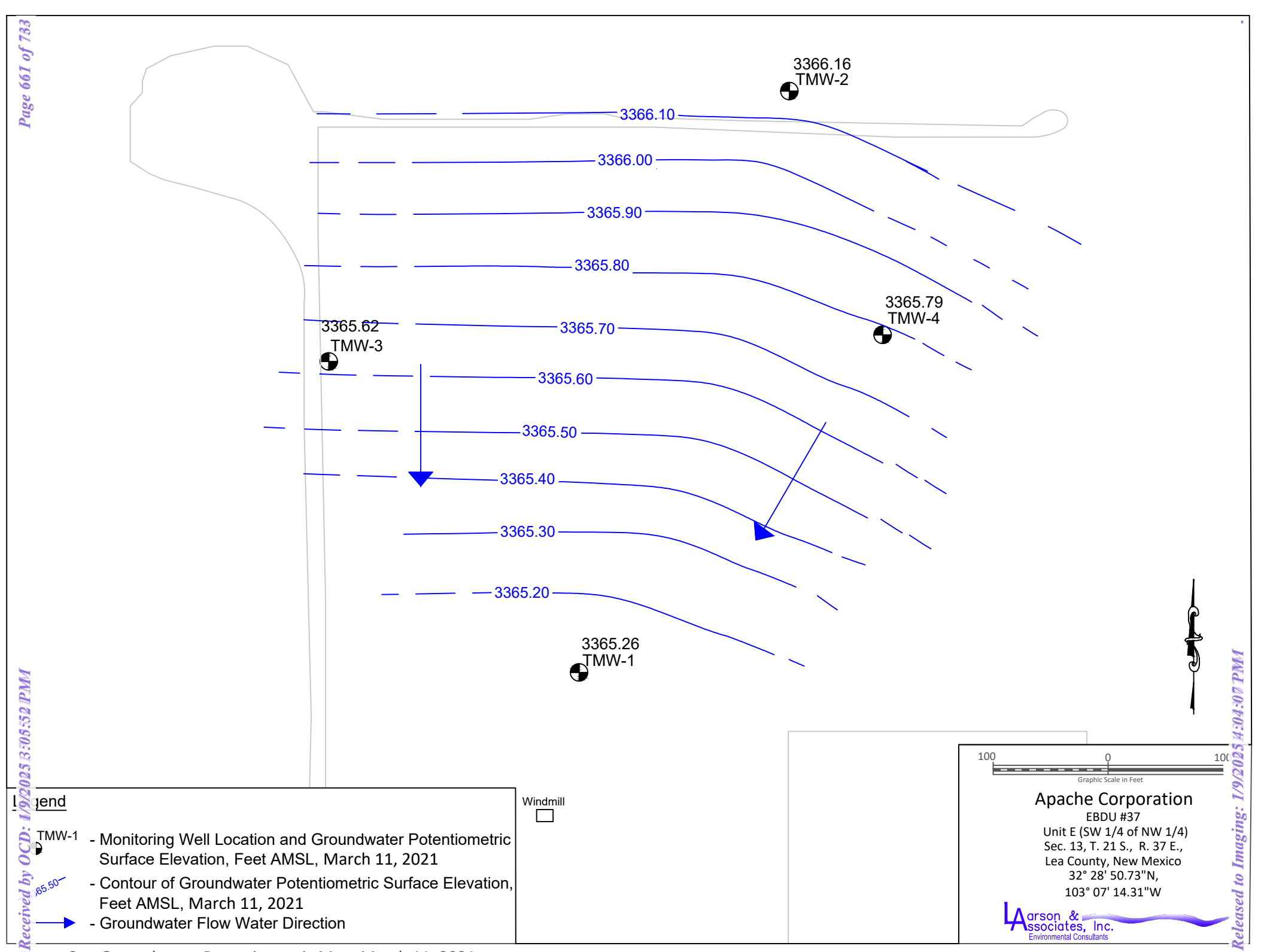
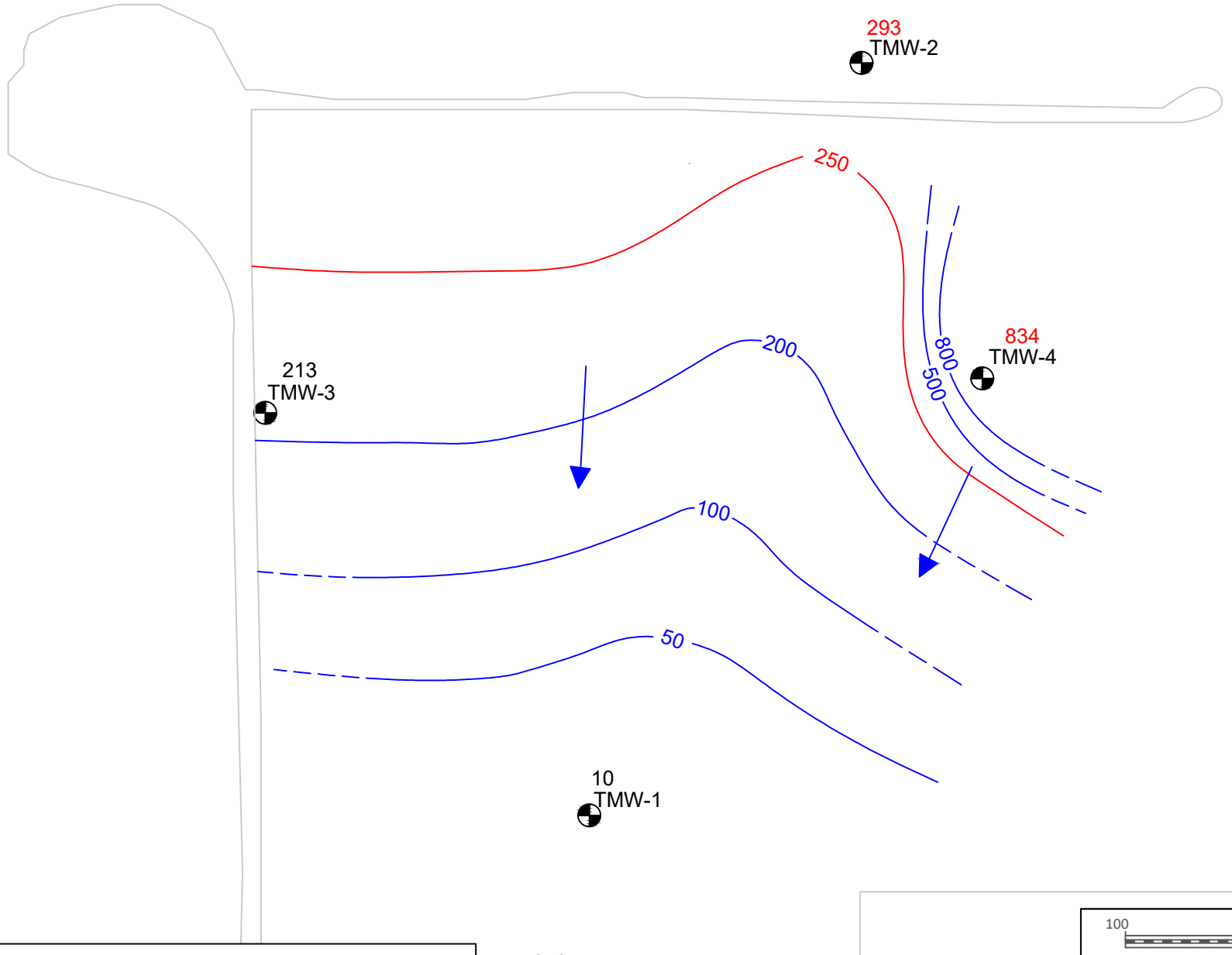


Figure 3a - Groundwater Potentiometric Map, March 11, 2021

Received by OCD: 1/9/2025 3:05:52 PM1
Released to Imaging: 1/9/2025 4:04:07 PM1

Page 662 of 733



Legend

TMW-1 - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, March 11, 2021

- Contour of Groundwater Chloride Concentration, mg/L, March 11, 2021

250 - Exceeds NMWQCC Domestic Water Quality Standard: 250 mg/L

100 0 100
Graphic Scale in Feet

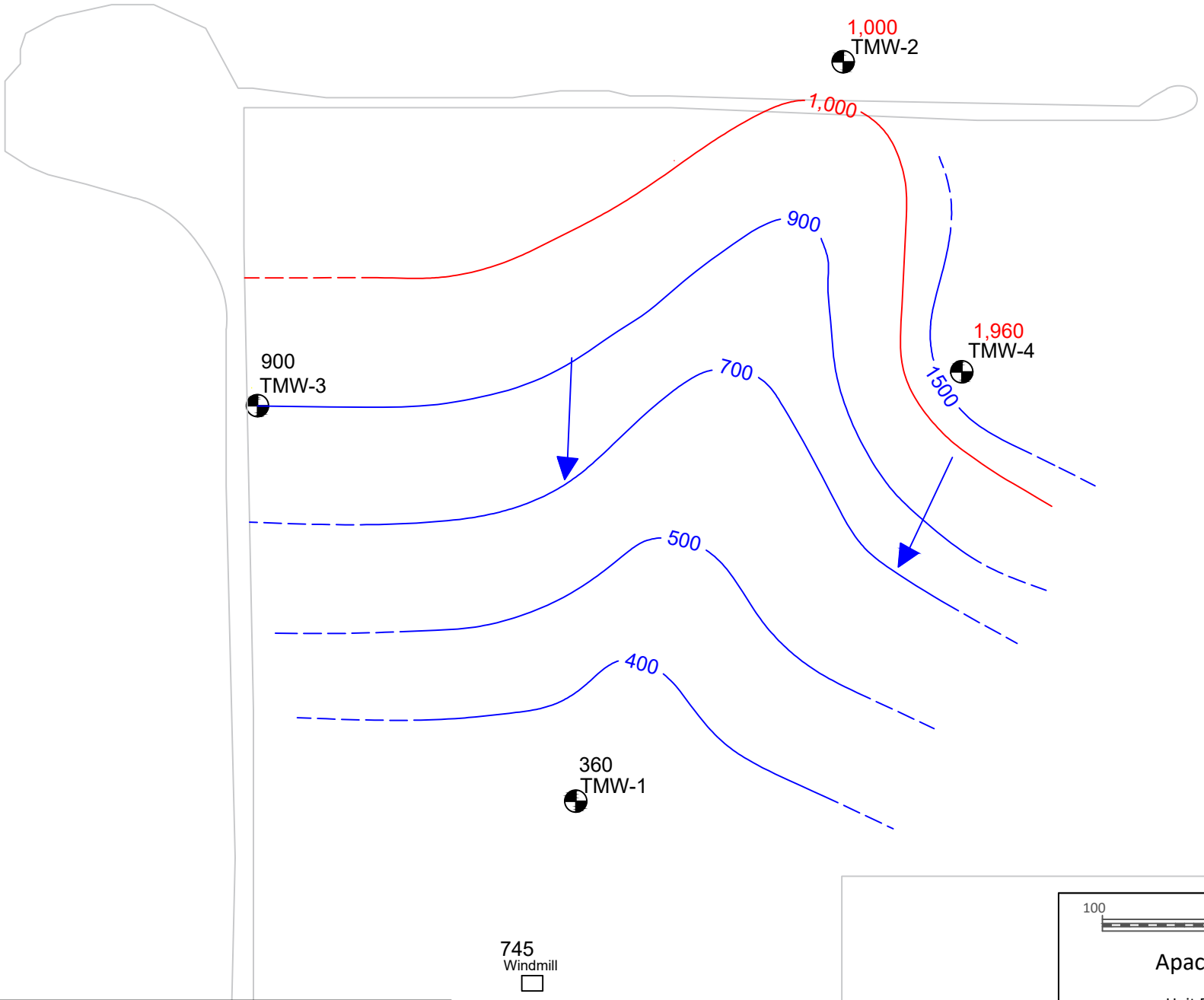
Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 4a - Chloride Concentration in Groundwater, March 11, 2021

Received by OCD: 1/9/2025 3:05:52 PM
Released to Imaging: 1/9/2025 4:04:07 PM

Page 663 of 733



Legend

TMW-1 - Monitoring Well Location and TDS Concentration in Groundwater, mg/L, March 11, 2021

00 — - Contour of TDS Concentration in Groundwater, mg/L

000 — - NMWQCC Domestic Water Quality Standard: 1,000 mg/L

100 0 100

Graphic Scale in Feet

Apache Corporation
EBDU #37
Unit E (SW 1/4 of NW 1/4)
Sec. 13, T. 21 S., R. 37 E.,
Lea County, New Mexico
32° 28' 50.73"N,
103° 07' 14.31"W

Larson & Associates, Inc.
Environmental Consultants

Figure 5a - TDS Concentration in Groundwater, March 11, 2021

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Appendix A

Initial C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Release Notification

Responsible Party

Responsible Party: Apache Corporation	OGRID 873
Contact Name: Bruce Baker	Contact Telephone: (432) 631-6982
Contact email: Larry.Baker@apachecorp.com	Incident # *(assigned by OCD)*
Contact Mailing Address: 2350 W. Marland Blvd, Hobbs, NM 88240	

Location of Release Source

Latitude: W 32.4807053 Longitude: N -103.123085

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: EBDU #37 WIW	Site Type: Water Injection Well
Date Release Discovered: July 14, 2019	API # *3002506556*

Unit Letter	Section	Township	Range	County
E	12	21S	37E	LEA

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: William Stephens*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
☒ Produced Water	Volume Released (Unknown bbls)	Volume Recovered (Unknown bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

Isolation valve failure due to internal corrosion.

Form C-141
Page 2

State of New Mexico
Oil Conservation Division

Incident ID	NDHR1922141227
District RP	1RP-5636
Facility ID	
Application ID	pDHR1922140928

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Via email given to NM OCD by Bruce Baker, Senior Environmental Technician, Apache Corporation

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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 of a C-141 report 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 of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jeff Broom Title: Environmental Technician

Signature: _____ Date: 07/24/2019

Email: Jeffrey.Broom@apachecorp.com Telephone: (432) 664-4677

OCD Only

Received by: Dylan Rose-Coss Date: 08/09/2019

Appendix B

OCD Communications

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Rachel Owen
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, December 23, 2019 3:21:06 PM

12/23/2019

Apache Corp. – Larry Baker
Larson Environmental

RE: 1RP-5636/EBDU #37, the following:

The attached/stringed email as an addendum to offered Work Plan is approved, including the location of proposed monitor wells, as was discussed recently on the telephone.

Please keep a copy of this communication for your records, as NO paper copy will follow. It may take some days for this to be uploaded to The Oil Conservation Division (OCD) data base,

ODE appreciates your efforts.

Sincerely,

Bradford Billings
EMNRD/OCD
Santa Fe, NM

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

---

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 12:58 PM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: [EXT] Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Tuesday, September 1, 2020 4:10:21 PM

09/01/2020

Mark,

As stated below was agreed in our phone conversation.

Bradford Billings

EMNRD/OCD

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations

From: Mark Larson <Mark@laenvironmental.com>
Sent: Tuesday, September 1, 2020 10:48 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
This email confirms our call today, September 1, 2020, for approval to complete backfilling the excavation in the swale at EBDU #37. As discussed the excavation is currently backfilled with caliche to approximately 5 feet below ground surface (bgs). NMOCD approved filling the remainder of the excavation to three (3) feet with clean caliche and to ground surface with topsoil. Since Apache is finishing backfilling the north excavation with topsoil it will fill the excavation in the swale with topsoil from 5 feet to ground surface. Notification will be submitted o NMOCD at least 7 days excluding weekends prior to installing monitoring wells. Please let me know if this is not consistent with our discussion. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.
Thank you,
Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656

Fax – 432-687-0456
mark@laenvironmental.com

From: Mark Larson
Sent: Thursday, August 13, 2020 8:26 AM
To: 'Bradford.Billings@state.nm.us' <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Soil sampling at EBDU #37 was completed on August 11, 202. The laboratory reported chloride above the OCD closure criteria of 600 milligrams per kilogram (mg/Kg) in two (2) samples: BH-3, 10 feet (774 mg/Kg) and 12 feet (666 mg/Kg). Chloride was 419 mg/Kg in the sample from 14 feet. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation and fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the boring locations. Table 4 presents the confirmation composite sample locations. Drilling and installation for two (2) monitoring wells is scheduled for Monday, August 18th.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Sent: Monday, August 10, 2020 10:51 AM
To: Mark Larson <Mark@laenvironmental.com>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>

Sent: Monday, December 23, 2019 1:58 PM
To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

From: Billings, Bradford, EMNRD
To: Mark Larson
Cc: Baker, Larry; Robert Nelson
Subject: RE: 1RP-5636 - EBDU #37 Addendum to Remediation Plan
Date: Monday, August 10, 2020 11:03:12 AM

08/10/2020

Hello M. Baker (Apache) and Mr. Larson (LAI),

As OCD has been informed you are looking to proceed on the site tomorrow, the following:

OCD approves the modifications as indicated in attached email form LAI. If the circumstances occur as is possible, there would be no need for the liner, and OCD agrees. OCD appreciates the desire to generate accurate data and is please for your efforts along those lines. If field data indicates a modification please attempt to contact me on phone or email.

Thank you and please be safe and careful.

Sincerely,

Bradford Billings
EMNRD/OCD

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, August 10, 2020 8:49 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: [EXT] FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,
I am following up on the email below to see if you have had a moment to review.
Thank you,
Mark

From: Mark Larson
Sent: Friday, August 7, 2020 11:45 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Robert Nelson <rnelson@laenvironmental.com>
Subject: FW: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Hello Bradford,

Apache Corporation has completed backfilling the deep excavation (Area 2) at EBUD #37 (1RP-5636) with clean caliche to approximately five (5) feet below ground surface (bgs) to allow access for a Geoprobe Model 7822DT to delineate the vertical extent of chloride in soil below the excavation at approximately 12 feet bgs. Personnel from Larson & Associates, Inc. (LAI) collected soil samples at the proposed boring location (BH-1) near the center of the excavation at 10, 12, 14, 16, 18 and 20 feet bgs, on August 3, 2020. The laboratory reported chloride at 11.6 mg/Kg (10 feet), 13.3 mg/Kg (12 feet), 13.4 mg/Kg (14 feet), 22.9 mg/Kg (16 feet), 34.4 mg/Kg (18 feet) and 24.7 mg/Kg at 20 feet bgs. Previous bottom samples from B15 collected on August 8, 2019, from 13, 15, 17, 19, 21 and 22 feet bgs, reported chloride at 720 mg/Kg, 1,840 mg/Kg, 1,950 mg/Kg, 3,800 mg/Kg, 544 mg/Kg, and 3,440 mg/Kg, respectively, and suggested possible sample cross contamination. Benzene, BTEX and TPH were the analytical method reporting limits. LAI personnel collected composite sidewall samples from the excavation to approximately 5 feet that were analyzed for benzene, BTEX and TPH. The final concentrations are below the OCD cleanup levels in Table 1 (19.15.29 NMAC).

Apache requests approval from OCD to collect additional delineation soil samples with the Geoprobe from four (4) locations (north, south, east and west) from location BH-1 at the same depths (10, 12,14,16,18 and 20 feet) and analyze the samples for chloride. Apache would like to forgo installing the 20 mil thickness polyethylene liner in the bottom of the large excavation If chloride concentrations are below the OCD remediation limit (600 mg/Kg). Apache will fill the remainder of the Area 2 excavation with caliche to approximately 3 feet bgs and with top soil from 3 feet to ground surface. The excavation north of the large excavation will be completed per the approved remediation plan. Please see the attached drawing (Figure 2) for the proposed borings BH-2 through BH-5. Figure 2a presents the composite soil sample locations. Table 4 presents the confirmation composite sample locations.

Your approval is this remediation plan modification is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.Baker@apachecorp.com or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

From: Mark Larson <Mark@laenvironmental.com>
Sent: Monday, December 23, 2019 1:58 PM

To: Bradford.Billings@state.nm.us
Cc: Baker, Larry <Larry.Baker@apachecorp.com>; Rachel Owen <rowen@laenvironmental.com>; Mark Larson <Mark@laenvironmental.com>
Subject: Re: 1RP-5636 - EBDU #37 Addendum to Remediation Plan

Dear Bradford,
This email will confirm our phone conversation on December 20, 2019 for the EBDU #37 produced water release:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered;
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs;
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient;
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019;
- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20 mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil;
- Seed Area 1 and Area 2 following remediation according to landowner requirements;
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Your approval is this addendum remediation plan is requested. Please contact Bruce Baker with Apache or me if you have questions.

Mark J. Larson, P.G.
President/Sr. Hydrogeologist
507 N. Marienfeld St., Suite 202
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants

"Serving the Permian Basin Since 2000"

Appendix C

Boring Logs

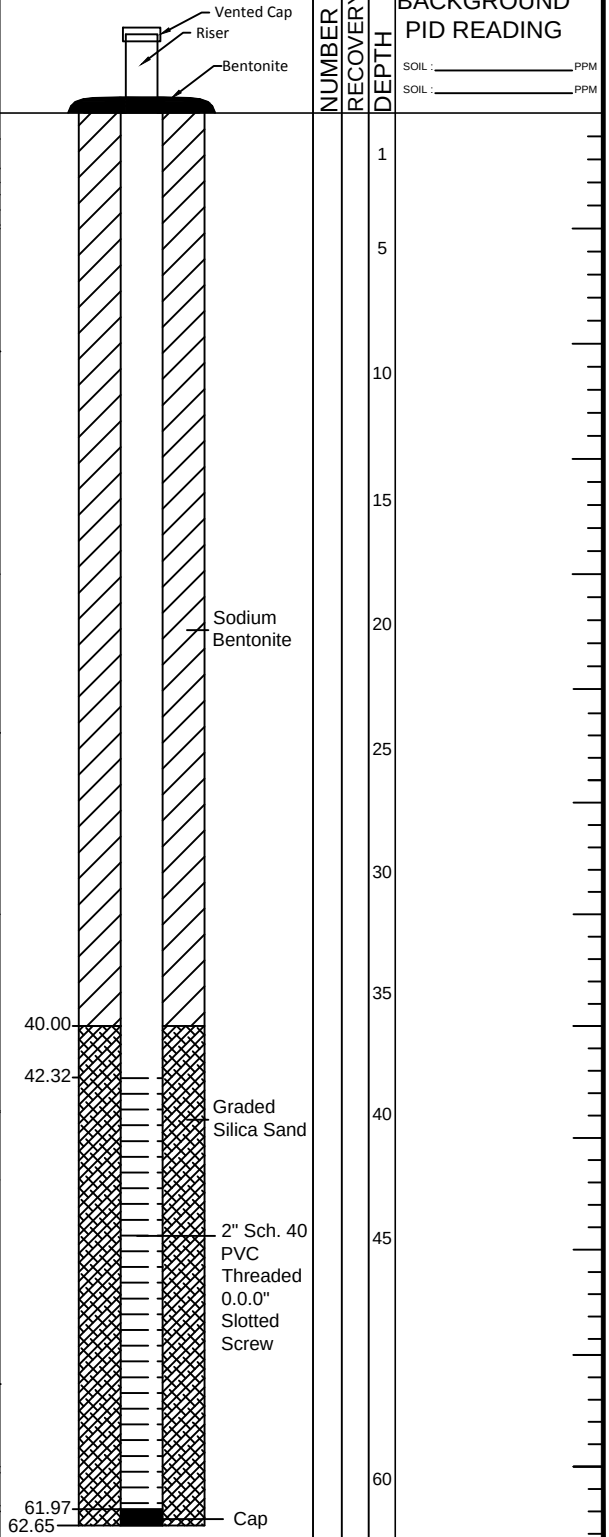
BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Start: 11:40 Finish: 12:58		
	0	Silty Clay, 7.5YR, 5/1, Gray, Very Fine Grained Quartz Sand, Dry	CL	
	5	Caliche, 7.5YR, 7/1 to 7/2, Pinkish Gray, Sandy, Fine to Very Fine Grained Quartz Sand, Dry	Caliche	
	10	Silty Sand, 10YR, 6/4, Light Yellowish ..., Very Fine to Fine Grained Quartz Sand, Poorly Sorted, Subrounded, Loose	SM	
	15	7.5YR, 6/6, Reddish Yellow Below 10', Poorly Sorted, ... Round	SM	
	20	10YR, 7/4, Very Pale Brown Below 15'	SM	
	25	Sand, 5YR, 5/6 to 6/6, Yellowish Red to Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Round, Moist, Very Moist	SW	
	30	Below 35'	SW	
	35	Sandstone, 5YR, 6/6, Reddish Yellow, Very Fine Grained Quartz Sand,Poorly Sorted, Moderately Well Cemented to Well Cemented	Sand Stone	
	40		Sand Stone	
46.72	45		Sand Stone	
	50		Sand Stone	
	55	Gravelly Sand, 7.5YR, 6/6, Reddish Yellow, Fine to Medium Grained Quartz Sand, Round, Cobbles to 40mm	Sand Stone	
	60		SP	
		TD: 62'		

Surface Elevation:
TOC Elecation:

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

NUMBER | RECOVERY | DEPTH



ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache Corp./ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : _____
DRILLING METHOD : SR/WR

Larson & Associates, Inc. Environmental Consultants

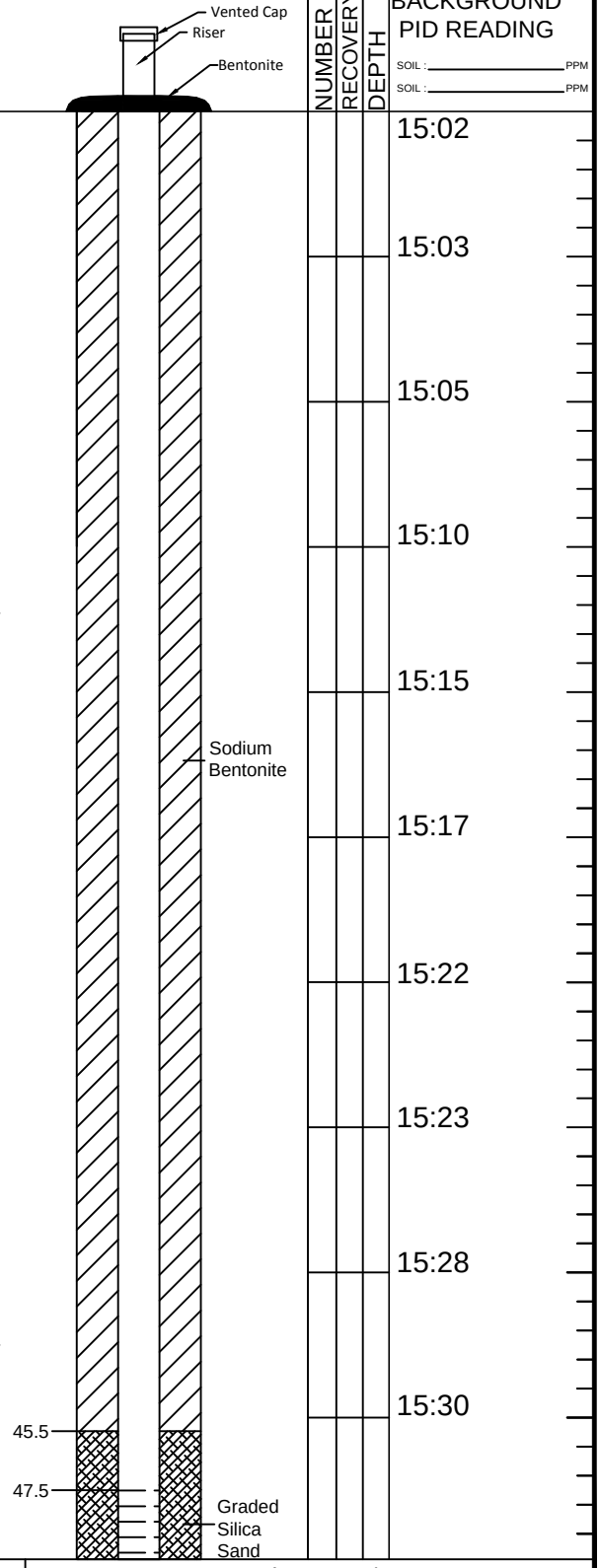
DRILL DATE : 9-19-2019

BORING NUMBER : TMW-1

BORING RECORD

GEOLOGIC UNIT	DEPTH	Start: 15:02 Finish: 15:55 DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	REMARKS BACKGROUND PID READING SOIL : PPM SOIL : PPM
	0	Silty Clay, 10YR, 5/6, Ash Brown, Dry	CL		15:02
	5	Caliche, 7.5YR, 8/2, Pinkish White, Sandy to Moderate Very Fine Grained Quartz Sand	Caliche		15:03
	10				15:05
	15	Silty Sand, 7.5YR, 7/2, Pinkish Gray, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SM		15:10
	20				15:15
	25	Sand, 5YR, 6/0, Reddish Yellow, Very Fine Grained Quartz Sand, Poorly Sorted, Dry	SW		15:17
	30				15:22
	35				15:23
	40				15:28
	45	Sand, 5YR, 6/6, Reddish Yellow, Moderate Well Cemented, Poorly Sorted, Dry	SW		15:30
		Continue			

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'



ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
LABORATORY TEST LOCATION
PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019

BORING NUMBER : TMW-2

JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

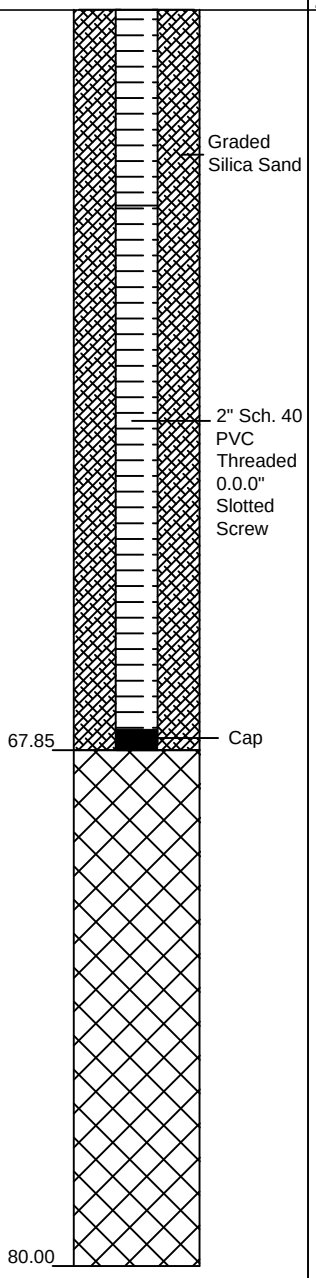
BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	50	*Continue*		
	55	Silty and Clayey Below 50', Moist at 55'	SM-SC	
	60			
	65			
	70			
	75	Gravel, 7.5YR, 4/3, Light Brown, Poorly Sorted, Round, Red Bed	GW	
	80	TD: 79'		

Start: 15:02
Finish: 15:55

Surface Elevation: 3,563.50'
TOC Elecation: 3,566.23'

Continue



NUMBER	RECOVERY	DEPTH	REMARKS BACKGROUND PID READING
			SOIL : PPM SOIL : PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

LArson & Associates, Inc. Environmental Consultants

DRILL DATE : 9-20-2019

BORING NUMBER : TMW-2

JOB NUMBER : Apache Corp. / 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : M. Larson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 09:35 MST
Finish: 10:30 MST

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Sand, 7.5YR 4/4, Brown, Fine to Very Fine Quartz Sand,Quartz and Feldspar Moderate to Well Sorted, Sub Rounded to Well Rounded	SM	
	5			
	10	Caliche, 7.5YR 8/2, Pinkish White, Sandy, Fine to Very Fine Grains, Well Sorted, Well Rounded	Caliche	
	15			
	20	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand	SM	
	25			
	30	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Grained Quartz Sand with Increase in Depth Lithology Remains the Same		
	35			
	40	@37' becomes Silty to Very Fine Grained Quartz Sand to 65'		
	45			
	50			
	55		SM	
	60			
	65			
	70	Gravelly Sand, 7.5YR, Strong Brown, Fine to Very Fine Coarse Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel(5-15mm), Poorly Sorted	SP	
	75			
		TD: 68.41'		

PID READING
PPM X _____
2 4 6 8 10 12 14 16 18

SAMPLE NUMBER	PID READING	RECOVERY	DEPTH
1			1
2			5
3			10
4			15
5			20
6			25
7			30
8			35
9			40
10			45
11			50
12			55
13			60
14			65
15			68

REMARKS
BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020
BORING NUMBER : TMW-3

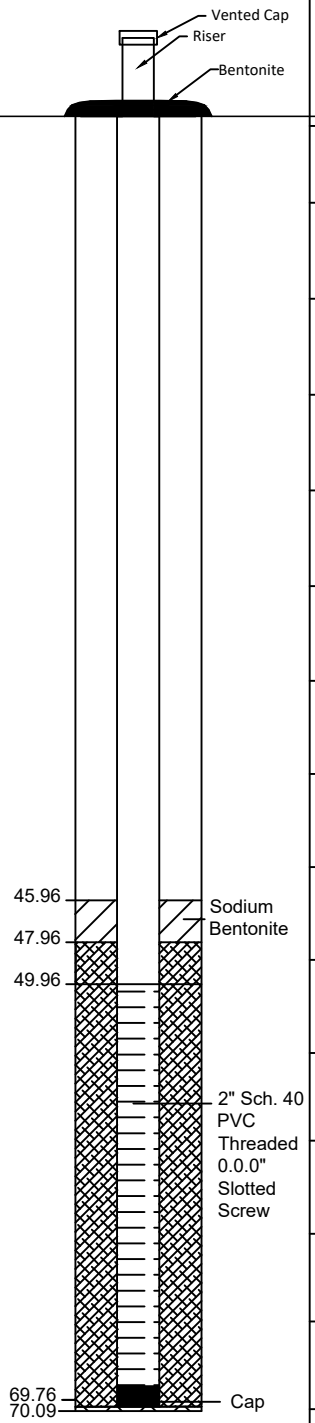
JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

BORING RECORD

Start: 12:45
Finish: 13:40

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG
	0	Caliche, 7.5YR 8/2, Pinkish White, Medium to Very Fine, Poorly Sorted, Sub Angular to Sub Rounded	Caliche	
	15	Sand, 10YR 8/2, Very Pale Brown, Quartz Rich Sand, Well Rounded to Very Well Rounded, Very Well Sorted, Fine to Very Fine Quartz Sand	SM	
	25	7.5YR 5/6, Strong Brown, Oxidized, Quartz Rich Sand, Sub Angular to Sub Rounded, Poorly Sorted, Coarse to Fine Grained Quartz Sand with Increase in Depth @34' Lithology Remained Constant and Grain Size Decreased to Fine to Very Fine Quartz Sand, Well Sorted, Rounded to Well Rounded		
	55	Sand, 7.5YR, Strong Brown, With Gravel, Fine to Very Coarse Quartz Sand, Quartz and Feldspar, Oxidized, Sub Angular to Sub Rounded, Gravel (5-15mm), Poorly Sorted	SM	
	70	TD: 70.09'		

PID READING / SAMPLE / REMARKS



NUMBER	RECOVERY	DEPTH
1		1
2		5
3		10
4		15
5		20
6		25
7		30
8		35
9		40
10		45
11		50
12		55
13		60
14		65
15		70

BACKGROUND PID READING
SOIL : _____ PPM
SOIL : _____ PPM

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : Apache/ 19-0112-49
HOLE DIAMETER : 5"
LOCATION : EBDU #37
LAI GEOLOGIST : T. Jackson
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE : 09-29-2020

BORING NUMBER : TMW-4

Appendix D

Laboratory Report

eurofins | Environment Testing America



ANALYTICAL REPORT

Eurofins Xenco, Midland
1211 W. Florida Ave
Midland, TX 79701
Tel: (432)704-5440

Laboratory Job ID: 880-387-1
Client Project/Site: Apache-EBDU #37

For:
Larson & Associates, Inc.
507 N Marienfeld
Suite 202
Midland, Texas 79701

Attn: Mr. Mark J Larson

Holly Taylor

Authorized for release by:
3/26/2021 9:50:23 AM

Holly Taylor, Project Manager
(806)794-1296
holly.taylor@eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

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

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

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Laboratory Job ID: 880-387-1

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Detection Summary 5
Client Sample Results 6
Surrogate Summary 9
QC Sample Results 10
QC Association Summary 15
Lab Chronicle 17
Certification Summary 19
Method Summary 20
Sample Summary 21
Chain of Custody 22
Receipt Checklists 23

Definitions/Glossary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

HPLC/IC

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

Subcontract

Qualifier	Qualifier Description
K	Sample analyzed outside of recommended hold time.
U	Analyte was not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Job ID: 880-387-1

Laboratory: Eurofins Xenco, Midland

Narrative

Job Narrative
880-387-1

Comments
No additional comments.

Receipt
The samples were received on 3/15/2021 9:18 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.5º C.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract non-Sister
See attached subcontract report.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method TDS: This method was subcontracted to Eurofins Stafford. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-1 — Lab Sample ID: 880-387-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	10.9		0.500		mg/L	1		300.0	Total/NA
Total Dissolved Solids	360	K	5.00		mg/L	1		TDS	Total/NA

Client Sample ID: TWM-3 — Lab Sample ID: 880-387-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	213		5.00		mg/L	10		300.0	Total/NA
Total Dissolved Solids	900	K	5.00		mg/L	1		TDS	Total/NA

Client Sample ID: TWM-2 — Lab Sample ID: 880-387-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	293		5.00		mg/L	10		300.0	Total/NA
Total Dissolved Solids	1000	K	5.00		mg/L	1		TDS	Total/NA

Client Sample ID: TWM-4 — Lab Sample ID: 880-387-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	834		10.0		mg/L	20		300.0	Total/NA
Total Dissolved Solids	1960	K	5.00		mg/L	1		TDS	Total/NA

Client Sample ID: Windmill — Lab Sample ID: 880-387-5

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	252		2.50		mg/L	5		300.0	Total/NA
Total Dissolved Solids	745	K	5.00		mg/L	1		TDS	Total/NA

Client Sample ID: Dup-1 — Lab Sample ID: 880-387-6

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Chloride	259		2.50		mg/L	5		300.0	Total/NA
Total Dissolved Solids	798	K	5.00		mg/L	1		TDS	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Xenco, Midland

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-1
Date Collected: 03/11/21 08:53
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-1
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/24/21 02:09	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/24/21 02:09	1
Toluene	<2.00	U	2.00		ug/L			03/24/21 02:09	1
Total BTEX	<2.00	U	2.00		ug/L			03/24/21 02:09	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/24/21 02:09	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/24/21 02:09	1
o-Xylene	<2.00	U	2.00		ug/L			03/24/21 02:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*70 - 130*		*03/24/21 02:09*	*1*
1,4-Difluorobenzene (Surr)	*102*		*70 - 130*		*03/24/21 02:09*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**10.9**		0.500		mg/L			03/17/21 23:08	1

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**360**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample ID: TWM-3
Date Collected: 03/11/21 09:12
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-2
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Toluene	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Total BTEX	<2.00	U	2.00		ug/L			03/20/21 10:50	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/20/21 10:50	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/20/21 10:50	1
o-Xylene	<2.00	U	2.00		ug/L			03/20/21 10:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*03/20/21 10:50*	*1*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*		*03/20/21 10:50*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**213**		5.00		mg/L			03/17/21 23:17	10

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**900**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-2

Date Collected: 03/11/21 09:36
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-3
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/20/21 11:11	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/20/21 11:11	1
Toluene	<2.00	U	2.00		ug/L			03/20/21 11:11	1
Total BTEX	<2.00	U	2.00		ug/L			03/20/21 11:11	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/20/21 11:11	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/20/21 11:11	1
o-Xylene	<2.00	U	2.00		ug/L			03/20/21 11:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*03/20/21 11:11*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*03/20/21 11:11*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**293**		5.00		mg/L			03/17/21 23:26	10

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1000**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample ID: TWM-4

Date Collected: 03/11/21 10:05
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-4
Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/20/21 11:31	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/20/21 11:31	1
Toluene	<2.00	U	2.00		ug/L			03/20/21 11:31	1
Total BTEX	<2.00	U	2.00		ug/L			03/20/21 11:31	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/20/21 11:31	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/20/21 11:31	1
o-Xylene	<2.00	U	2.00		ug/L			03/20/21 11:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*03/20/21 11:31*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*03/20/21 11:31*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**834**		10.0		mg/L			03/17/21 23:35	20

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1960**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: Windmill

Lab Sample ID: 880-387-5
Matrix: Water
Date Collected: 03/12/21 13:26
Date Received: 03/15/21 09:18

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/20/21 11:52	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/20/21 11:52	1
Toluene	<2.00	U	2.00		ug/L			03/20/21 11:52	1
Total BTEX	<2.00	U	2.00		ug/L			03/20/21 11:52	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/20/21 11:52	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/20/21 11:52	1
o-Xylene	<2.00	U	2.00		ug/L			03/20/21 11:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*70 - 130*		*03/20/21 11:52*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*03/20/21 11:52*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**252**		2.50		mg/L			03/18/21 00:02	5

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**745**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Client Sample ID: Dup-1

Lab Sample ID: 880-387-6
Matrix: Water
Date Collected: 03/12/21 00:00
Date Received: 03/15/21 09:18

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Toluene	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Total BTEX	<2.00	U	2.00		ug/L			03/24/21 02:30	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/24/21 02:30	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/24/21 02:30	1
o-Xylene	<2.00	U	2.00		ug/L			03/24/21 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*03/24/21 02:30*	*1*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*		*03/24/21 02:30*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**259**		2.50		mg/L			03/18/21 00:11	5

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**798**	**K**	5.00		mg/L		03/21/21 12:30	03/21/21 12:30	1

Surrogate Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
		BFB1	DFBZ1
Lab Sample ID	Client Sample ID	(70-130)	(70-130)
820-139-B-4 MS	Matrix Spike	93	99
820-139-B-4 MSD	Matrix Spike Duplicate	97	101
880-387-1	TWM-1	91	102
880-387-2	TWM-3	102	99
880-387-3	TWM-2	108	101
880-387-4	TWM-4	107	101
880-387-5	Windmill	108	101
880-387-6	Dup-1	95	101
890-344-A-1 MS	Matrix Spike	100	98
890-344-A-1 MSD	Matrix Spike Duplicate	103	95
LCS 880-592/3	Lab Control Sample	100	100
LCS 880-750/33	Lab Control Sample	94	94
LCSD 880-592/4	Lab Control Sample Dup	100	100
LCSD 880-750/34	Lab Control Sample Dup	97	100
MB 880-592/8	Method Blank	102	97
MB 880-598/5-A	Method Blank	111	95
MB 880-750/39	Method Blank	115	96

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DFBZ = 1,4-Difluorobenzene (Surr)

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-592/8
Matrix: Water
Analysis Batch: 592

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00		ug/L			03/19/21 10:29	1
Ethylbenzene	<2.00	U	2.00		ug/L			03/19/21 10:29	1
Toluene	<2.00	U	2.00		ug/L			03/19/21 10:29	1
Total BTEX	<2.00	U	2.00		ug/L			03/19/21 10:29	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/19/21 10:29	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/19/21 10:29	1
o-Xylene	<2.00	U	2.00		ug/L			03/19/21 10:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*03/19/21 10:29*	*1*
1,4-Difluorobenzene (Surr)	*97*		*70 - 130*		*03/19/21 10:29*	*1*

Lab Sample ID: LCS 880-592/3
Matrix: Water
Analysis Batch: 592

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			100	104.1		ug/L		104	70 - 130		
Ethylbenzene			100	114.1		ug/L		114	70 - 130		
Toluene			100	110.0		ug/L		110	70 - 130		
m-Xylene & p-Xylene			200	233.0		ug/L		117	70 - 130		
o-Xylene			100	112.0		ug/L		112	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 880-592/4
Matrix: Water
Analysis Batch: 592

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			100	110.6		ug/L		111	70 - 130	6	20
Ethylbenzene			100	119.9		ug/L		120	70 - 130	5	20
Toluene			100	115.8		ug/L		116	70 - 130	5	20
m-Xylene & p-Xylene			200	244.2		ug/L		122	70 - 130	5	20
o-Xylene			100	117.1		ug/L		117	70 - 130	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 890-344-A-1 MS
Matrix: Water
Analysis Batch: 592

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<2.00	U F1	100	114.4		ug/L		114	70 - 130		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 890-344-A-1 MS
Matrix: Water
Analysis Batch: 592

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	<2.00	U F1	100	121.0		ug/L		121	70 - 130
Toluene	<2.00	U F1	100	118.2		ug/L		118	70 - 130
m-Xylene & p-Xylene	<4.00	U F1	200	247.1		ug/L		124	70 - 130
o-Xylene	<2.00	U F1	100	119.3		ug/L		119	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*70 - 130*
1,4-Difluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: 890-344-A-1 MSD
Matrix: Water
Analysis Batch: 592

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
Ethylbenzene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
Toluene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25
m-Xylene & p-Xylene	<4.00	U F1	200	<4.00	U F1	ug/L		0	70 - 130	NC	25
o-Xylene	<2.00	U F1	100	<2.00	U F1	ug/L		0	70 - 130	NC	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*

Lab Sample ID: MB 880-598/5-A
Matrix: Water
Analysis Batch: 750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Ethylbenzene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Toluene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Total BTEX	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
Xylenes, Total	<4.00	U	4.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
m-Xylene & p-Xylene	<4.00	U	4.00	ug/L		03/23/21 10:55	03/23/21 14:21	1
o-Xylene	<2.00	U	2.00	ug/L		03/23/21 10:55	03/23/21 14:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*111*		*70 - 130*	*03/23/21 10:55*	*03/23/21 14:21*	*1*
1,4-Difluorobenzene (Surr)	*95*		*70 - 130*	*03/23/21 10:55*	*03/23/21 14:21*	*1*

Lab Sample ID: MB 880-750/39
Matrix: Water
Analysis Batch: 750

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00	U	2.00	ug/L			03/24/21 01:27	1
Ethylbenzene	<2.00	U	2.00	ug/L			03/24/21 01:27	1

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: MB 880-750/39
Matrix: Water
Analysis Batch: 750

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<2.00	U	2.00		ug/L			03/24/21 01:27	1
Total BTEX	<2.00	U	2.00		ug/L			03/24/21 01:27	1
Xylenes, Total	<4.00	U	4.00		ug/L			03/24/21 01:27	1
m-Xylene & p-Xylene	<4.00	U	4.00		ug/L			03/24/21 01:27	1
o-Xylene	<2.00	U	2.00		ug/L			03/24/21 01:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*115*		*70 - 130*		*03/24/21 01:27*	*1*
1,4-Difluorobenzene (Surr)	*96*		*70 - 130*		*03/24/21 01:27*	*1*

Lab Sample ID: LCS 880-750/33
Matrix: Water
Analysis Batch: 750

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene			100	96.25		ug/L		96	70 - 130		
Ethylbenzene			100	93.87		ug/L		94	70 - 130		
Toluene			100	99.05		ug/L		99	70 - 130		
m-Xylene & p-Xylene			200	191.1		ug/L		96	70 - 130		
o-Xylene			100	93.23		ug/L		93	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*
1,4-Difluorobenzene (Surr)	*94*		*70 - 130*

Lab Sample ID: LCSD 880-750/34
Matrix: Water
Analysis Batch: 750

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene			100	93.34		ug/L		93	70 - 130	3	20
Ethylbenzene			100	93.86		ug/L		94	70 - 130	0	20
Toluene			100	98.22		ug/L		98	70 - 130	1	20
m-Xylene & p-Xylene			200	183.2		ug/L		92	70 - 130	4	20
o-Xylene			100	92.33		ug/L		92	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*100*		*70 - 130*

Lab Sample ID: 820-139-B-4 MS
Matrix: Water
Analysis Batch: 750

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Benzene	<2.00	U	100	96.80		ug/L		97	70 - 130		
Ethylbenzene	<2.00	U	100	95.39		ug/L		95	70 - 130		
Toluene	<2.00	U	100	101.2		ug/L		101	70 - 130		

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 820-139-B-4 MS
Matrix: Water
Analysis Batch: 750

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	<4.00	U	200	190.3		ug/L		95	70 - 130
o-Xylene	<2.00	U	100	91.70		ug/L		92	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*
1,4-Difluorobenzene (Surr)	*99*		*70 - 130*

Lab Sample ID: 820-139-B-4 MSD
Matrix: Water
Analysis Batch: 750

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	<2.00	U	100	99.07		ug/L		99	70 - 130	2	25
Ethylbenzene	<2.00	U	100	101.1		ug/L		101	70 - 130	6	25
Toluene	<2.00	U	100	104.3		ug/L		104	70 - 130	3	25
m-Xylene & p-Xylene	<4.00	U	200	201.7		ug/L		101	70 - 130	6	25
o-Xylene	<2.00	U	100	98.08		ug/L		98	70 - 130	7	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*70 - 130*
1,4-Difluorobenzene (Surr)	*101*		*70 - 130*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-549/3
Matrix: Water
Analysis Batch: 549

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.500	U	0.500		mg/L			03/17/21 22:13	1

Lab Sample ID: LCS 880-549/4
Matrix: Water
Analysis Batch: 549

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride			25.0	23.89		mg/L		96	90 - 110

Lab Sample ID: LCSD 880-549/5
Matrix: Water
Analysis Batch: 549

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			25.0	23.77		mg/L		95	90 - 110	1	20

QC Sample Results

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-415-A-1 MS
Matrix: Water
Analysis Batch: 549

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	51.0		25.0	75.29		mg/L		97	90 - 110

Lab Sample ID: 880-415-A-1 MSD
Matrix: Water
Analysis Batch: 549

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	51.0		25.0	75.26		mg/L		97	90 - 110	0	20

Method: TDS - SM 2540C Total Dissolved Solids (TDS)

Lab Sample ID: 3154281-1-BLK
Matrix: WATER
Analysis Batch: 3154281

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 3154281_P

Analyte	BLANK Result	BLANK Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<5	U	5		mg/L		03/21/21 12:30	03/21/21 12:30	1

Lab Sample ID: 3154281-1-BKS
Matrix: WATER
Analysis Batch: 3154281

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 3154281_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	987		mg/L		99	80 - 120

Lab Sample ID: 3154281-1-BSD
Matrix: WATER
Analysis Batch: 3154281

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 3154281_P

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	955		mg/L		96	80 - 120	3	10

Lab Sample ID: 692017-006 D
Matrix: WATER
Analysis Batch: 3154281

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 3154281_P

Analyte	Sample Result	Sample Qualifier	DUP Result	DUP Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	798		742		mg/L		7	10

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

GC VOA

Analysis Batch: 592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-2	TWM-3	Total/NA	Water	8021B	
880-387-3	TWM-2	Total/NA	Water	8021B	
880-387-4	TWM-4	Total/NA	Water	8021B	
880-387-5	Windmill	Total/NA	Water	8021B	
MB 880-592/8	Method Blank	Total/NA	Water	8021B	
LCS 880-592/3	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-592/4	Lab Control Sample Dup	Total/NA	Water	8021B	
890-344-A-1 MS	Matrix Spike	Total/NA	Water	8021B	
890-344-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

Prep Batch: 598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 880-598/5-A	Method Blank	Total/NA	Water	5035	

Analysis Batch: 750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	8021B	
880-387-6	Dup-1	Total/NA	Water	8021B	
MB 880-598/5-A	Method Blank	Total/NA	Water	8021B	598
MB 880-750/39	Method Blank	Total/NA	Water	8021B	
LCS 880-750/33	Lab Control Sample	Total/NA	Water	8021B	
LCSD 880-750/34	Lab Control Sample Dup	Total/NA	Water	8021B	
820-139-B-4 MS	Matrix Spike	Total/NA	Water	8021B	
820-139-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8021B	

HPLC/IC

Analysis Batch: 549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	300.0	
880-387-2	TWM-3	Total/NA	Water	300.0	
880-387-3	TWM-2	Total/NA	Water	300.0	
880-387-4	TWM-4	Total/NA	Water	300.0	
880-387-5	Windmill	Total/NA	Water	300.0	
880-387-6	Dup-1	Total/NA	Water	300.0	
MB 880-549/3	Method Blank	Total/NA	Water	300.0	
LCS 880-549/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 880-549/5	Lab Control Sample Dup	Total/NA	Water	300.0	
880-415-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
880-415-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Subcontract

Analysis Batch: 3154281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	TDS	3154281_P
880-387-2	TWM-3	Total/NA	Water	TDS	3154281_P
880-387-3	TWM-2	Total/NA	Water	TDS	3154281_P
880-387-4	TWM-4	Total/NA	Water	TDS	3154281_P
880-387-5	Windmill	Total/NA	Water	TDS	3154281_P
880-387-6	Dup-1	Total/NA	Water	TDS	3154281_P
3154281-1-BLK	Method Blank	Total/NA	WATER	TDS	3154281_P

QC Association Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Subcontract (Continued)

Analysis Batch: 3154281 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
3154281-1-BKS	Lab Control Sample	Total/NA	WATER	TDS	3154281_P
3154281-1-BSD	Lab Control Sample Dup	Total/NA	WATER	TDS	3154281_P
692017-006 D	Duplicate	Total/NA	WATER	TDS	3154281_P

Prep Batch: 3154281_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
880-387-1	TWM-1	Total/NA	Water	NONE	
880-387-2	TWM-3	Total/NA	Water	NONE	
880-387-3	TWM-2	Total/NA	Water	NONE	
880-387-4	TWM-4	Total/NA	Water	NONE	
880-387-5	Windmill	Total/NA	Water	NONE	
880-387-6	Dup-1	Total/NA	Water	NONE	
3154281-1-BLK	Method Blank	Total/NA	WATER	***DEFAULT PREP***	
3154281-1-BKS	Lab Control Sample	Total/NA	WATER	***DEFAULT PREP***	
3154281-1-BSD	Lab Control Sample Dup	Total/NA	WATER	***DEFAULT PREP***	
692017-006 D	Duplicate	Total/NA	WATER	***DEFAULT PREP***	

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: TWM-1
Date Collected: 03/11/21 08:53
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	750	03/24/21 02:09	PXS	XM
Total/NA	Analysis	300.0		1	549	03/17/21 23:08	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Client Sample ID: TWM-3
Date Collected: 03/11/21 09:12
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 10:50	MR	XM
Total/NA	Analysis	300.0		10	549	03/17/21 23:17	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Client Sample ID: TWM-2
Date Collected: 03/11/21 09:36
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 11:11	MR	XM
Total/NA	Analysis	300.0		10	549	03/17/21 23:26	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Client Sample ID: TWM-4
Date Collected: 03/11/21 10:05
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 11:31	MR	XM
Total/NA	Analysis	300.0		20	549	03/17/21 23:35	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Client Sample ID: Windmill
Date Collected: 03/12/21 13:26
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	592	03/20/21 11:52	MR	XM
Total/NA	Analysis	300.0		5	549	03/18/21 00:02	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Lab Chronicle

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Client Sample ID: Dup-1
Date Collected: 03/12/21 00:00
Date Received: 03/15/21 09:18

Lab Sample ID: 880-387-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8021B		1	750	03/24/21 02:30	PXS	XM
Total/NA	Analysis	300.0		5	549	03/18/21 00:11	CH	XM
Total/NA	Prep	NONE		1	3154281_P	03/21/21 12:30		XS
Total/NA	Analysis	TDS		1	3154281	03/21/21 12:30	DTN	XS

Laboratory References:

XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

XS = Eurofins Stafford, 4147 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Laboratory: Eurofins Xenco, Midland

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

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-20-21	06-30-21

Laboratory: Eurofins Stafford

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704215-21-39	06-30-21

Method Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XM
300.0	Anions, Ion Chromatography	MCAWW	XM
2540C	SM 2540C Total Dissolved Solids (TDS)	SM	XS
5030B	Purge and Trap	SW846	XM

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XM = Eurofins Xenco, Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440
XS = Eurofins Stafford, 4147 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Larson & Associates, Inc.
Project/Site: Apache-EBDU #37

Job ID: 880-387-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
880-387-1	TWM-1	Water	03/11/21 08:53	03/15/21 09:18	
880-387-2	TWM-3	Water	03/11/21 09:12	03/15/21 09:18	
880-387-3	TWM-2	Water	03/11/21 09:36	03/15/21 09:18	
880-387-4	TWM-4	Water	03/11/21 10:05	03/15/21 09:18	
880-387-5	Windmill	Water	03/12/21 13:26	03/15/21 09:18	
880-387-6	Dup-1	Water	03/12/21 00:00	03/15/21 09:18	

880-387 Chain of Custody

№ 1539

CHAIN-OF-CUSTODY

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

DATE: 3/15/2021 PAGE 1 OF 1
PO#: LAB WORK ORDER#:
PROJECT LOCATION OR NAME: Apache - EBDU #32
LAI PROJECT #: 19-0112-49 COLLECTOR: RN, TJ MS

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State MST

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

PRESERVATION: HCl x3 | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE x2 | UNPRESSERVED

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

Field Sample I D	Lab #	Date	Time	Matrix	# of Containers	HCl x3	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE x2	UNPRESSERVED	BTEX ☒	TDS ☒	CHLORIDES ☒	FIELD NOTES
TMW-1		3/11/21	0853	W	5						X			Direct Bill to Apache
TMW-3		"	0912	"	"						"			
TMW-2		"	0936	"	"						"			
TMW-4		"	1005	"	"						"			Liter, 250, 3 VOA + HCl
windmill		3/12/21	1326	"	"						"			
Dup-1				W	"						"			
TOTAL														

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
	3/15/21 918	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)

LABORATORY Xenco

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

LABORATORY USE ONLY:
RECEIVING TEMP 3.0/3.5 THERM# IR8
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

3/26/2021

Received by OCD: 1/9/2025 3:05:52 PM1

Released to Imaging: 1/9/2025 4:04:07 PM1

Login Sample Receipt Checklist

Client: Larson & Associates, Inc.

Job Number: 880-387-1

Login Number: 387
List Number: 1
Creator: Teel, Brianna

List Source: Eurofins Midland

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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

Operator: APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	OGRID: 873
	Action Number: 33961
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
chensley	The OCD approves Apache's continued quarterly monitoring of groundwater in wells TMW-1 through TMW-4 and the windmill during 2021 with laboratory analysis of groundwater samples for BTEX, chloride and TDS.	7/16/2021

State of New Mexico
Energy, Minerals and Natural Resources Department

Michele Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Cabinet Secretary

Dylan Fuge
Acting Director
Oil Conservation Division

May 5, 2023

Apache Corporation OGRID: 873
Bruce Baker
303 Veterans Airpark Ln
Midland TX 79705

Re: Incident NDHR1922141227 (1RP-5636) - Scope of Work for Additional Monitoring Wells
Apache Corp., EBDU #37, Lea County, New Mexico

Mr. Baker:

The New Mexico Oil Conservation Division (OCD) has requested that Apache complete a groundwater investigation to determine if groundwater has been impacted (and if so, the extent of contamination) from incident **NDHR1922141227.** The OCD has reviewed the proposed scope of work received, via email, on April 27, 2023. OCD appreciates Apache's willingness to continue investigation activities. It should be noted chlorides in the area of Apache's operations exceed WQCC regulations and therefore must be investigated to identify any potential sources. OCD may require additional monitoring wells, if deemed necessary, for continued investigation of the elevated chlorides. NMOCD approves the scope of work with the attached conditions:

- Drilling must be performed within 30days or an extension for cause shall be provided to the OCD for review and approval.
- The reported findings must be supplied to the OCD within 30 days of the sampling activities or within 14 days of the receipt of the sampling results from the laboratory, whichever is greater.
- Apache shall provide OCD the drilling schedule no later than 3 business days prior to starting.

If you have any questions, please contact Mike Bratcher at (505) 626-0857 or by email at mike.bratcher@emnrd.nm.gov.

Respectfully,

Rosa M Romero

Rosa Romero
Environmental Bureau Chief – NMOCD
CC: MB/NV

APACHE EXHIBIT C-2

Released to Imaging: 1/9/2025 4:04:07 PM

Larson & Associates, Inc.
Environmental Consultants

April 5, 2023

VIA EMAIL: nelson.velez@emnrd.nm.gov
mike. batcher @emnrd.nm.gov

Mr. Nelson Velez, Environmental Specialist
State of New Mexico – Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Re: Incident NDHR1922141227 (1RP-5636) - Scope of Work for Additional Monitoring Wells
Apache Corp., EBDU #37, Lea County, New Mexico

Dear Mr. Velez,
Larson & Associates, Inc. (LAI), on behalf of Apache Corp. (Apache) has prepared this scope of work (SOW) for New Mexico Oil Conservation Division (NMOCD) approval to install four (4) additional monitoring wells (TMW-7 through TMW-10) at the East Blinebry Drinkard Unit (EBDU) #37 (Site) located in Unit E (SW/NW), Section 13, Township 21 South, Range 37 East, Lea County, New Mexico. Apache believes that the remediation work it performed in 2019, which was approved by NMOCD, was extensive and successfully remediated any adverse impact to the area. In the spirit of cooperation and to ensure a thorough remediation, however, Apache agrees to install the additional wells that NMOCD has requested. The geodetic position is North 32.479569° and West -103.122061°. Figure 1 presents a topographic map.

Purpose and Background

The purpose for the additional groundwater monitoring wells is to assess the source and extent of chloride reported in soil and groundwater samples from a produced water release that occurred on July 14, 2019. The release originated from a flowline at a pipeline junction located about 720 feet east from Well #37. Produced fluids (oil and water) flowed west about 350 feet west from the release origin, and south about 450 feet before terminating in low-lying area. The volume of the release and recovered fluid are unknown.

On October 29, 2019, Apache submitted to the NMOCD a remediation plan titled, "1RP-5636 REMEDIATION PLAN, East Blinebry Drinkard Unit #37 Produced water Spill, Lea County, New Mexico, October 29, 2019". On December 23, 2019, NMOCD approved an addendum to the remediation plan based on a telephone call on December 20, 2019 (Bradford Billings) with the following conditions:

- Apache will install a boring in the bottom of the excavation to delineate the vertical extent of chloride in soil. Soil samples will be collected beginning at the bottom of the excavation and every five (5) feet thereafter until chloride decreases below 600 mg/Kg or groundwater is encountered.
- Apache will install two (2) additional monitoring wells at locations shown on the attached drawing. The monitoring wells will be constructed similar to monitoring well TMW-1 and TMW-2 with about 20 feet of screen placed above and below the groundwater level observed during drilling. Groundwater is expected to occur around 50 feet bgs therefore the borings will be advanced to around 70 feet bgs.
- Survey wells for top of elevation (top of casing and ground) for groundwater potentiometric surface elevation, flow direction and gradient.
- Apache will close the excavation at Area 1 according to the remediation plan dated October 29, 2019.

- Apache will close the excavation at Area 2, based on the laboratory results of samples from the boring to be placed in the bottom of the excavation, by filling the excavation to approximately 5 feet bgs with clean caliche, installing a 20-mill thickness polyethylene liner at approximately 5 feet bgs and backfilling to surface with clean topsoil.
- Seed Area 1 and Area 2 following remediation according to landowner requirement.
- Perform quarterly groundwater monitoring (5 wells) and reporting.

Apache performed the remediation, installed four (4) monitoring wells (TMW-1 through TMW-4), and performed quarterly (4 times per year) groundwater monitoring from monitoring wells and a water well (windmill). In all, Apache has spent over $750,000 to ensure the remediation was thorough and properly done in accordance with the approved plan.

Between November 28 and 30, 2022, at NMOCD request, Apache installed two (2) additional monitoring wells (TMW-5 and TMW-6) east of the playa where the release terminated. Soil samples were collected from seven (7) borings (BH-1 and BH-3 from BH-8) installed in the playa (BH-1 and BH-3 to BH-5) and the release corridor north of the playa (BH-6, BH-7 and BH-8).

On April 4, 2023, during a conference call. NMOCD, then requested Apache to install four (4) additional monitoring wells (TMW-7 through TMW-11). In the spirit of cooperation and to ensure all potential impacts are addressed, Apache agreed. Figure 2 presents an aerial map showing the proposed monitoring well locations.

Scope of Work

LAI, on behalf of Apache, will prepare and submit permit applications to the State of New Mexico Office of the State Engineering (NMOSE) for approval to install four (4) additional monitoring wells at locations shown on Figure 2. Monitoring well TMW-7 will be installed at the source for the release located about 475 feet northeast from the playa. Monitoring well TMW-8 will be installed within about five (5) feet north or south of BH-7. Wells TM-9 and TMW-10 will be installed about one hundred (100) feet west and east, respectively, from monitoring well TMW-1 located south of the playa. The wells will be installed about twenty (20) feet into the uppermost groundwater unit estimated to occur at about fifty-six (56), fifty-five (55), and forty-seven (47) feet below ground surface (bgs) near TMW-7, TMW-8 and TMW-9/TMW-10, respectively. A nominal five (5) diameter bore will be drilled at each location with an air rotary rig. The lithologies will be described and logs prepared according to the Unified Soil Classification System (USCS) in ASTM D-2487 (*Standard Practice for Classification of Soils for Engineering Purposes*). The monitoring wells will be constructed in accordance with ASTMD5092-04 (Reapproved 2010) in *Standard Practice for Design and Installation of Groundwater Monitoring Wells* using 2-inch diameter schedule 40 threaded screw-threaded PVC riser and approximately twenty (20) feet of 0.01-inch factory slotted screen. A filter pack of appropriately sized silica sand will be placed around the borehole by evenly pouring around the PVC riser. The sand will extend from the bottom of the borings to about two (2) feet above the screen. Sodium bentonite chips will be placed around the riser from the top of the filter sand to about 1-foot bgs at wells TMW-7 and TMW-9 and hydrated with potable water. A slurry of portland cement and bentonite will be used to TMW-8 to seal the bore above the sand to about 1-foot bgs. The purpose of the cement and bentonite slurry at TMW-8 is to prevent surface water intrusion below a 20-mil thickness polyethylene liner positioned at about 4-feet bgs. The wells will be secured with locking steel covers anchored into a concrete apron measuring about 3 by 3 feet and about 4-inches thick. A State of New Mexico Licensed Professional Land Surveyor (PLS) will survey the wells for position and elevation including natural ground and top of casing (TOC). LAI personnel will develop the wells by pumping with a Waterra mechanical pump to remove

sediment disturbed during drilling and well installation. The pump will be fitted with new polyethene discharge tubing that will be discarded between wells. The Waterra foot valve will be thoroughly cleaned between wells with a solution of laboratory-grade detergent (Alconox®) and rinsed distilled water. Purged water and sediment will be captured in 55-gallon drums for disposal in a NMOCD permitted Class II commercial salt-water disposal (SWD) well. Drill cuttings will be placed on the ground adjacent to the wells. The proposed well and screen depths are so follows:

Well Number	Est. Water Level, Feet bgs	Est. Well Depth, Feet bgs	Est. Screen Interval, Feet bgs
TMW-7	60	80	60 – 80
TMW-8	55	75	55 – 75
TMW-9	48	68	48 – 68
TMW-10	48	68	48 – 68

The wells will be allowed to recover to near the pre-development depth to groundwater level before collecting groundwater samples. Depth to groundwater will be gauged at TOC with an electronic water level meter. Groundwater samples will be collected from each monitoring well using the low stress or low flow method according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017) where an environmental pump is submerged near the middle of the water column and the well is pumped at a low rate until environmental parameters stabilize. Groundwater samples were collected from discharge through dedicated disposable Tygon® tubing. The tubing was discarded after each use and the pump was thoroughly cleaned with a solution of potable water and Alconox® and rinsed with distilled water. The samples will be transferred to labeled laboratory containers, packed in an ice chest filled with ice, and delivered under chain of custody control to EUROFINS Xenco Laboratories (Xenco), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Midland, Texas. A groundwater sample will be collected from the discharge at the windmill. A duplicate sample will be collected for laboratory quality assurance and quality control (QA/QC). Xenco will analyze the samples for benzene, toluene, ethylbenzene, xylene (BTEX) according to EPA SW-846 Method SW-8260D, total dissolved solids (TDS) by Method SM 2540C, and chloride by EPA Method 300. BTEX according to EPA SW-846 Method SW-8260D, cations (calcium, magnesium, potassium, and sodium) by Method SW-6020B, anions (chloride and sulfate) by EPA Method 300, alkalinity by EPA Method M-2320B, and total dissolved solids (TDS) by EPA Method M-2540C.

Report

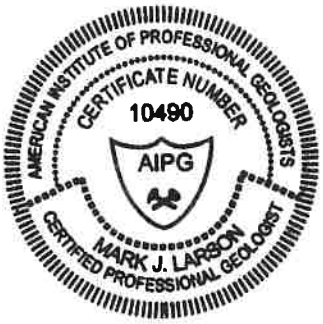
Apache will prepare a report after receipt of the laboratory report that will include the following:

- Description of well installation and groundwater sample collection procedures and conclusions.
- Groundwater potentiometric and contaminant concentration maps.
- Laboratory analytical reports and chain of custody documentation.
- Lithologic logs and well completion diagrams.
- Photographs.

Your approval of this SOW for additional groundwater monitoring wells is requested. Please contact Bruce Baker with Apache at (432) 631-6982 or email Larry.aBaker@apachecorp.com, Robert Nelson at (432) 687-0901 or rnelson@laenvironmental.com or me to discuss any questions you may have.

Respectively,

Larson & Associates, Inc.

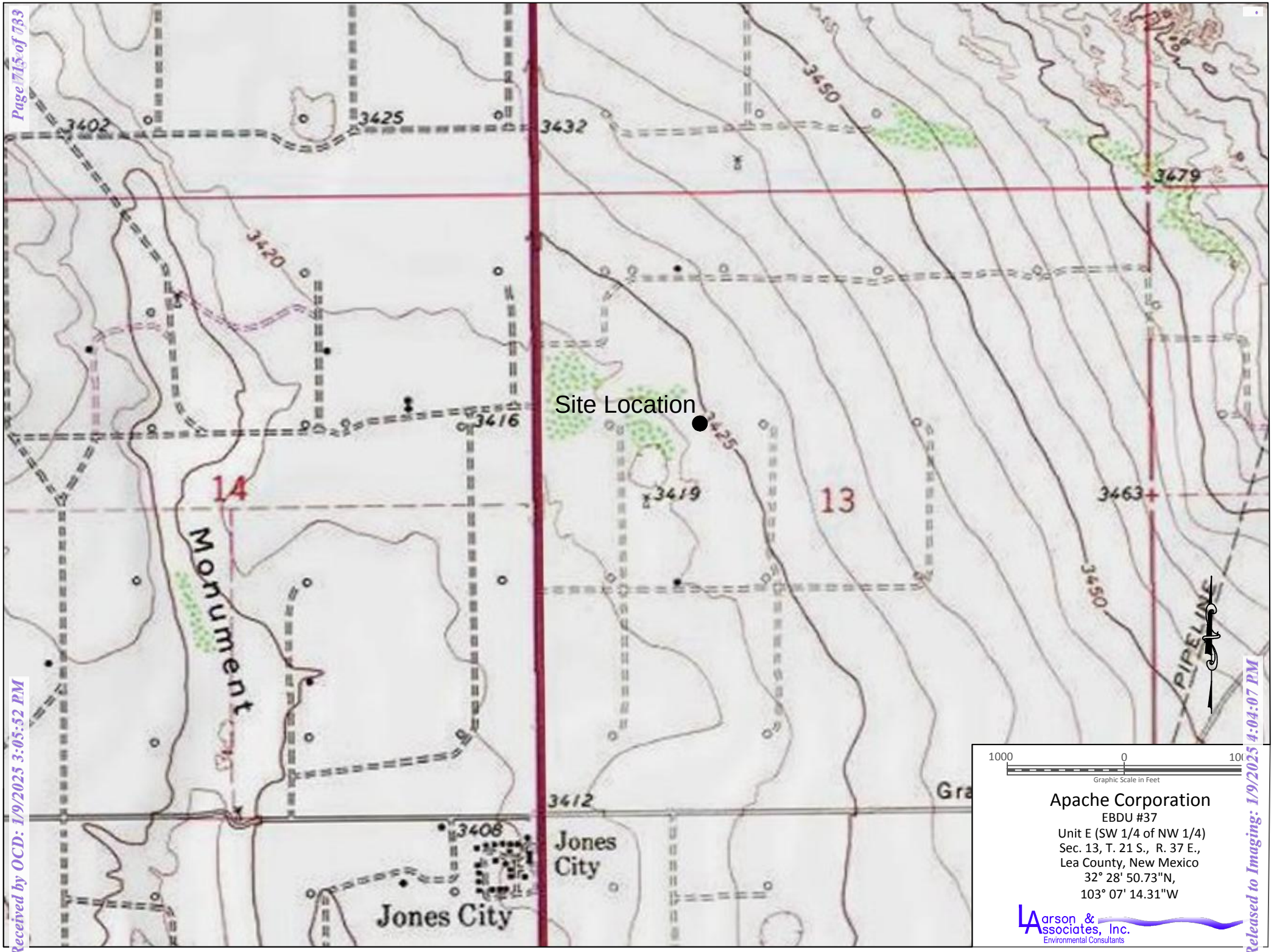


Mark J. Larson, P.G.
President/Sr. Hydrogeologist
Certified Professional Geologist #10490

Encl.

Figures

Page 715 of 733



Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

Figure 1 - Topographic Map

Page 716 of 733

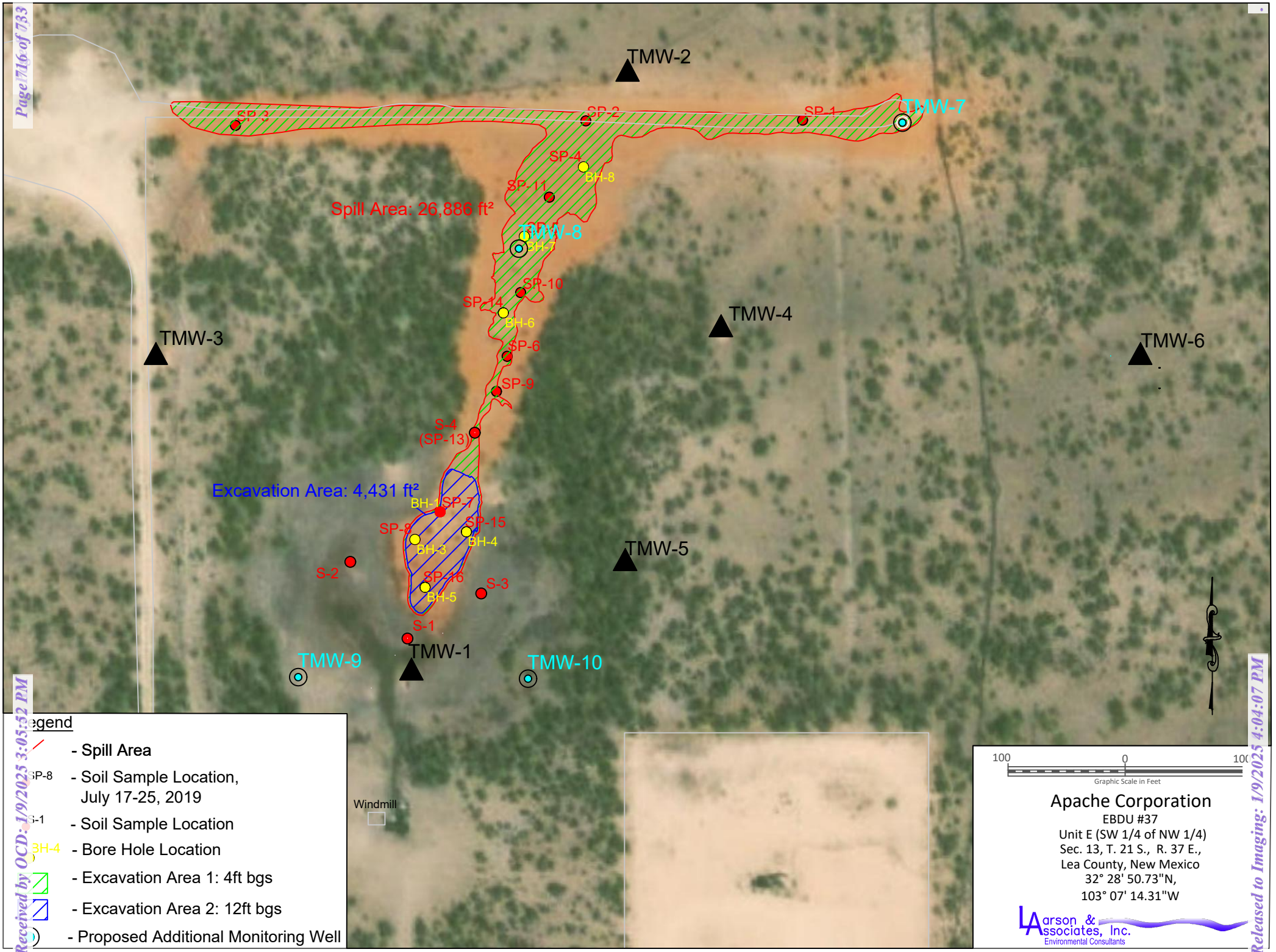


Figure 2 - Aerial Map Showing Excavation Area and Proposed Additional Monitoring Well Locations

Received by OCD: 1/9/2025 3:05:52 PM

Released to Imaging: 1/9/2025 4:04:07 PM

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

Operator:	OGRID:
APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705	873
	Action Number: 214931
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	NMOCD approves the scope of work with the attached conditions: • Drilling must be performed within 30 days or an extension for cause shall be provided to the OCD for review and approval. • The reported findings must be supplied to the OCD within 30 days of the sampling activities or within 14 days of the receipt of the sampling results from the laboratory, whichever is greater. • Apache shall provide OCD the drilling schedule no later than 3 business days prior to starting.	5/9/2023

APACHE CORPORATION

PRE-HEARING EXHIBITS

PART 5

EXHIBITS:

C-4, C-5, D

APACHE EXHIBIT C-4

N

TMW-29
TMW-31
TMW-12
458
TMW-22
289
3365'
TMW-32
500
TMW-11
423
3365'
TMW-31
TMW-13
1580
TMW-2
276
TMW-7
1100
BH-9
TMW-33
TMW-8
570
3364.5'
TMW-4
612
TMW-3
183
3365'
TMW-6
1330
TMW-21
284
GW Flow Direction
TMW-27
5,000
TMW-5
3990
TMW-14
7790
10,000
TMW-34
3364'
TMW-9
66
TMW-1
128
TMW-10
208
TMW-17
14900
TMW-35
3421 ft
TMW-15
7160
Windmill
3363.5'
TMW-36
TMW-20
312
TMW-16
171
TMW-37
GW Flow Direction
TMW-18
7820
3363'
TMW-19
907
TMW-40
TMW-38
20'
TMW-30
3362.5'
TMW-26
15'
TMW-24
330
10'
TMW-23
1010
1,000
TMW-41
TMW-31

DATA SOURCES: Bing

Feet
0 100 200 400

- Existing Monitoring Well
- Windmill
- Proposed Monitoring Well
- OCD Requested Monitoring Well
- Static Control GPS
- Groundwater Contours October 2024
- Chloride Isoconcentration October 2024
- Chloride Isoconcentration October 2024 (Inferred)
- Saturated Thickness from Larson Report May 8, 2024
- Inferred Release

Project No.:	KH247030
Date:	Jan 08 2025
Drawn By:	JWL
Reviewed By:	JRG

terracon
4526 W Pierce St
Carlsbad, NM
PH. 806-300-0140 terracon.com

Groundwater Flow & Chloride Concentrations

EBDU 37
32.4807053, -103.123085
Apache Corporation
Eunice, Lea County, New Mexico

C:\GIS_Projects\KH247030_EBDU_37\Maps\KH247030_EBDU_37KH247030_EBDU_37.aprx



Project No.:	KH247030
Date:	Jan 03 2025
Drawn By:	JWL
Reviewed By:	JRG

terracon
4526 W Pierce St
Carlsbad, NM
PH. 806-300-0140 terracon.com

Well Location Map

EBDU 37
32.4807053, -103.123085
Apache Corporation
Eunice, Lea County, New Mexico

RECORD OF NOTICE

No.	Title of Document	Addressee	Date of Mailing	Status of Delivery	Date of Delivery
1	Copy of the Filed Application for an Adjudicatory Hearing to M. Buchanan	M. Buchanan, EMNRD, OCD	10/02/2024	Received	10/08/2024
2	Copy of the Filed Application for an Adjudicatory Hearing to R. Romero	R. Romero, EMNRD, OCD	10/02/2024	Received	10/03/2024
3	Copy of the Filed Application for an Adjudicatory Hearing to J. Tremaine	J. Tremaine, Legal Director, NMOCD	10/02/2024	Received	10/03/2024
4	Letter to Mr. William O. Stephens, Jr. C/O Atty, Kenneth D. Dugan. Re: OCD Case No. 24912, Application of Apache Corp., for an Adjudicatory Hearing to Contest, Conditions of Approval on Apache Corps. Scope of Work for Addl. Investigation, Lea, County, N.M. from G & K.	Pl, W. O. Stephens, C/O Atty, K. Dugan	10/09/2024	Received	10/17/2024

APACHE EXHIBIT D

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF APACHE CORPORATION FOR AN ADJUDICATORY HEARING TO CONTEST THE DIVISION'S CONDITIONS OF APPROVAL ON APACHE CORPORATION'S SCOPE OF WORK FOR ADDITIONAL INVESTIGATION, LEA COUNTY, NEW MEXICO.

CASE NO.:_____

APPLICATION FOR ADJUDICATORY HEARING

Apache Corporation ("Apache" or "Applicant") (OGRID No. 873), through its undersigned attorneys, files this application ("Application") with the Oil Conservation Division ("OCD" or "Division"), pursuant to the provisions of 19.15.4.8 and 19.15.29.12.C(5) NMAC, requesting an adjudicatory hearing to contest the OCD's Conditions of Approval on Action No. 342416, Apache's Scope of Work for Additional Investigation in Lea County, New Mexico, related to EBDU No. 37, Incident No. NDHR1922141227 (remediation permit number 1RP-5636). In support of its Application, Apache states as follows:

1. Apache is the operator of record of the East Blinebry Drinkard Unit #037 well, also known as "EBDU #37" ("the Well"), API No. 30-025-06556, a water injection well, located in Section 13, Township 21 South, Range 37 East, in Lea County, New Mexico.

2. On July 14, 2019, Apache notified the OCD of a release at a pipeline junction approximately 720 feet east of the Well (the "Release") by filing a C-141 Initial Response Form.

3. On October 29, 2019, Apache submitted to OCD its Remediation Plan, which was approved with conditions on December 23, 2019.

31662-0006

UNITED STATES POSTAL SERVICE.

SANTA FE
120 S FEDERAL PL STE 101
SANTA FE, NM 87501-9902
(800)275-8777

10/02/2024 08:43 AM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367696			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4473 06			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367689			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 83			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367672			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 76			$4.10
Total			$11.26
Grand Total:			$33.78
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX1127 Approval #: 002717 Transaction #: 352 AID: A0000000031010 AL: VISA CREDIT PIN: Not Required		Chip	$33.78

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Santa Fe, NM 87505

OFFICIAL USE

Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
- ☑ Return Receipt (hardcopy) $4.10
- ☐ Return Receipt (electronic) $0.00
- ☐ Certified Mail Restricted Delivery $0.00
- ☐ Adult Signature Required $0.00
- ☐ Adult Signature Restricted Delivery $0.00

Postage $2.31

Total Postage and Fees $11.26

Sent To: Michael Buchanan
Street and Apt. No., or PO Box No.: 1220 S. St. Francis Dr.
City, State, ZIP+4®: Santa Fe, N.M. 87505

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

USPS SANTA FE NM 87501 0500 33 Postmark Here OCT 02 2024 10/02/2024 SANTA FE NM MAIN POST OFFICE

7019 0700 0001 9736 7672

SENDER: COMPLETE THIS SECTION
- ■ Complete items 1, 2, and 3.
- ■ Print your name and address on the reverse so that we can return the card to you.
- ■ Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Michael Buchanan, 1220 S. St. Francis Dr. Santa Fe, N.M. 87505

2. Article Number (Transfer from service label)
9590 9402 5049 9092 4472 76

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY
A. Signature
X
☐ Agent
☐ Addressee
B. Received by (Printed Name)
C. Date of Delivery
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Priority Mail Express®
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Email Us - Domestic Tracking & Shipping

Email Us

This page is for domestic shipments only (sent inside the U.S. only). To inquire about mail sent internationally (inbound or outbound), please visit our International Inquiry page (https://www.usps.com/help/claims.htm?tab=echo) to start an Inquiry.

Please enter the USPS Tracking® number if available

If you're asking about a package or service that gave you a USPS Tracking® number, please enter the number below.

Tracking Number: 70190700000197367672

Track Another Package

Latest Status As Of

TUESDAY
8 October 2024
by **9:58 am**

Status

Delivered

October 8, 2024 at 9:58 am
Delivered, Front Desk/Reception/Mail Room
SANTA FE, NM - 87505

Feedback

Delivered

Having an issue related to this tracking number?

Start our Package Tracking form to file a case.

Start

Or please choose one of the issues below.

What's the reason for your inquiry?

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF APACHE CORPORATION FOR AN ADJUDICATORY HEARING TO CONTEST THE DIVISION'S CONDITIONS OF APPROVAL ON APACHE CORPORATION'S SCOPE OF WORK FOR ADDITIONAL INVESTIGATION, LEA COUNTY, NEW MEXICO.

CASE NO.:_____

APPLICATION FOR ADJUDICATORY HEARING

Apache Corporation ("Apache" or "Applicant") (OGRID No. 873), through its undersigned attorneys, files this application ("Application") with the Oil Conservation Division ("OCD" or "Division"), pursuant to the provisions of 19.15.4.8 and 19.15.29.12.C(5) NMAC, requesting an adjudicatory hearing to contest the OCD's Conditions of Approval on Action No. 342416, Apache's Scope of Work for Additional Investigation in Lea County, New Mexico, related to EBDU No. 37, Incident No. NDHR1922141227 (remediation permit number 1RP-5636). In support of its Application, Apache states as follows:

1. Apache is the operator of record of the East Blinebry Drinkard Unit #037 well, also known as "EBDU #37" ("the Well"), API No. 30-025-06556, a water injection well, located in Section 13, Township 21 South, Range 37 East, in Lea County, New Mexico.

2. On July 14, 2019, Apache notified the OCD of a release at a pipeline junction approximately 720 feet east of the Well (the "Release") by filing a C-141 Initial Response Form.

3. On October 29, 2019, Apache submitted to OCD its Remediation Plan, which was approved with conditions on December 23, 2019.

31662-0006

UNITED STATES POSTAL SERVICE.

SANTA FE
120 S FEDERAL PL STE 101
SANTA FE, NM 87501-9902
(800)275-8777

10/02/2024 08:43 AM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367696			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4473 06			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367689			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 83			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367672			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 76			$4.10
Total			$11.26
Grand Total:			$33.78
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX1127 Approval #: 002717 Transaction #: 352 AID: A0000000031010 AL: VISA CREDIT PIN: Not Required		Chip	$33.78

7019 0700 0001 9736 7689

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.
Santa Fe, NM 87505

OFFICIAL USE

Certified Mail Fee	$4.85
Extra Services & Fees (check box, add fee as appropriate)	
☑ Return Receipt (hardcopy)	$4.10
☐ Return Receipt (electronic)	$0.00
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$0.00
Postage	$2.31
Total Postage and Fees	$11.26

Postmark Here
OCT 02 2024
SANTA FE NM 87501
10/02/2024

Sent To: Rosa Romero
Street and Apt. No., or PO Box No.: 1220 S. St. Francis Dr.
City, State, ZIP+4®: Santa Fe, N.M. 87505

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to: Environmental Rosa Romero, Bureau Chief 1220 S. St. Francis Dr. Santa Fe, N.M. 87505

2. Article Number (Transfer from service label) 9590 9402 5049 9092 4472 83

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

7019 0700 0001 9736 7689

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Matthew Lovato ☐ Agent ☐ Addressee

B. Received by (Printed Name) Matthew Lovato C. Date of Delivery 10/2/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

Received by OCD: 1/9/2025 3:05:52 PM

ALERT: HURRICANES HELENE AND MILTON, FLOODING, AND SEVERE WEATHER IN THE SOU...

USPS Tracking®

FAQs >

Tracking Number: Remove X

70190700000197367689

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Latest Update

Your item was delivered to the front desk, reception area, or mail room at 10:22 am on October 3, 2024 in SANTA FE, NM 87502.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Feedback

Delivered

Delivered, Front Desk/Reception/Mail Room

SANTA FE, NM 87502
October 3, 2024, 10:22 am

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates ⌄

USPS Tracking Plus® ⌄

Product Information ⌄

See Less ^

Track Another Package

Released to Imaging: 1/9/2025 4:04:07 PM

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

APPLICATION OF APACHE CORPORATION FOR AN ADJUDICATORY HEARING TO CONTEST THE DIVISION'S CONDITIONS OF APPROVAL ON APACHE CORPORATION'S SCOPE OF WORK FOR ADDITIONAL INVESTIGATION, LEA COUNTY, NEW MEXICO.

CASE NO.:_____

APPLICATION FOR ADJUDICATORY HEARING

Apache Corporation ("Apache" or "Applicant") (OGRID No. 873), through its undersigned attorneys, files this application ("Application") with the Oil Conservation Division ("OCD" or "Division"), pursuant to the provisions of 19.15.4.8 and 19.15.29.12.C(5) NMAC, requesting an adjudicatory hearing to contest the OCD's Conditions of Approval on Action No. 342416, Apache's Scope of Work for Additional Investigation in Lea County, New Mexico, related to EBDU No. 37, Incident No. NDHR1922141227 (remediation permit number 1RP-5636). In support of its Application, Apache states as follows:

1. Apache is the operator of record of the East Blinebry Drinkard Unit #037 well, also known as "EBDU #37" ("the Well"), API No. 30-025-06556, a water injection well, located in Section 13, Township 21 South, Range 37 East, in Lea County, New Mexico.

2. On July 14, 2019, Apache notified the OCD of a release at a pipeline junction approximately 720 feet east of the Well (the "Release") by filing a C-141 Initial Response Form.

3. On October 29, 2019, Apache submitted to OCD its Remediation Plan, which was approved with conditions on December 23, 2019.

31662-0006

UNITED STATES POSTAL SERVICE.

SANTA FE
120 S FEDERAL PL STE 101
SANTA FE, NM 87501-9902
(800)275-8777

10/02/2024 08:43 AM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367696			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4473 06			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367689			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 83			$4.10
Total			$11.26
First-Class Mail® Large Envelope Santa Fe, NM 87505 Weight: 0 lb 3.60 oz Estimated Delivery Date Fri 10/04/2024	1		$2.31
Certified Mail® Tracking #: 70190700000197367672			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4472 76			$4.10
Total			$11.26
Grand Total:			$33.78
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX1127 Approval #: 002717 Transaction #: 352 AID: A0000000031010 AL: VISA CREDIT PIN: Not Required		Chip	$33.78

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Santa Fe, NM 87505

Certified Mail Fee $4.85

Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $4.10
- Return Receipt (electronic) $
- Certified Mail Restricted Delivery $
- Adult Signature Required $
- Adult Signature Restricted Delivery $

Postage $2.31

Total Postage and Fees $11.26

Postmark Here
OCT 02 2024
SANTA FE NM MAIN POST OFFICE
10/02/2024

Sent To: Jesse Tremaine.
Street and Apt. No., or PO Box No.: 1220 S. St. Francis Dr.
City, State, ZIP+4®: Santa Fe, N.M. 87505

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7019 0700 0001 9736 7696

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Jesse Tremaine
Legal Director
1220 S. St. Francis Dr.
Santa Fe, N.M. 87505

2. Article Number (Transfer from service label)
9590 9402 5049 9092 4473 06

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name)
Matthew Lovett
C. Date of Delivery
10/3/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

Received by OCD: 1/9/2025 3:05:52 PM

ALERT: HURRICANES HELENE AND MILTON, FLOODING, AND SEVERE WEATHER IN THE SOU...

USPS Tracking®

FAQs >

Remove X

Tracking Number:

70190700000197367696

Copy Add to Informed Delivery (https://informeddelivery.usps.com/)

Latest Update

Your item was delivered to the front desk, reception area, or mail room at 10:22 am on October 3, 2024 in SANTA FE, NM 87502.

Get More Out of USPS Tracking:

USPS Tracking Plus®

Feedback

Delivered

Delivered, Front Desk/Reception/Mail Room

SANTA FE, NM 87502
October 3, 2024, 10:22 am

See All Tracking History

What Do USPS Tracking Statuses Mean? (https://faq.usps.com/s/article/Where-is-my-package)

Text & Email Updates ⌄

USPS Tracking Plus® ⌄

Product Information ⌄

See Less ^

Track Another Package

Released to Imaging: 1/9/2025 4:04:07 PM

Gallagher&Kennedy

Dalva L. Moellenberg
Shareholder
Direct: (505) 989-7278
Email: dlm@gknet.com

October 9, 2024

VIA CERTIFIED U.S. MAIL AND EMAIL
Mr. William O. Stephens, Jr.
c/o Kenneth D. Dugan
Martin, Dugan & Martin
509 W. Pierce St.
P.O. Box 2168
Carlsbad, NM 88221-2168
kdugan@lawmdm.com

Re: ***OCD Case No. 24912, Application of Apache Corporation for an Adjudicatory Hearing to Contest the Division's Conditions of Approval on Apache Corporation's Scope of Work for Additional Investigation, Lea County, New Mexico.***

Dear Mr. Stephens,

This letter is to advise you that, pursuant to the provisions of 19.15.4.8 and 19.15.29.12.C(5) NMAC, Apache Corporation ("Apache") filed its Application to contest the Oil Conservation Division's ("OCD") conditions of approval on Apache's scope of work for additional investigation, related to EBDU No. 37, Incident No. NDHR1922141227, remediation permit number 1RP-5636, on October 1, 2024. A file-stamped copy of the Application is enclosed with this letter for your convenience.

This Application has been set for hearing before the OCD on November 7, 2024, beginning at 8:30 a.m. MST. The hearing will take place in a hybrid format, in-person at 1220 South St. Francis, Santa Fe, New Mexico, 87505, and online via the OCD's preferred web platform. A link to the meeting will be published on the OCD's website.

You are not required to attend this hearing, but as an owner of an interest that may be affected by this Application, you may appear and present testimony. Failure to appear at that time and become a party of record will preclude you from challenging the matter at a later date. Parties who wish to appear in an adjudicatory hearing before the OCD, under rule 19.15.4.13.B NMAC, must enter an appearance and file a pre-hearing statement at least four business days in advance of the scheduled hearing, but no later than 5:00 p.m. MST on the Thursday prior to the scheduled hearing date, which falls on October 31, 2024. The procedural rules for filing an entry of appearance in an adjudicatory hearing are located at 19.15.4.10.B NMAC. The rules for intervention are located at 19.15.4.11 NMAC and the requirements for pre-hearing statements are located at 19.15.4.13.B NMAC.

31662-0006

UNITED STATES POSTAL SERVICE.

CORONADO
2071 S PACHECO ST
SANTA FE, NM 87505-9998
(800)275-8777

10/09/2024 04:55 PM

Product	Qty	Unit Price	Price
First-Class Mail® Large Envelope Carlsbad, NM 88221 Weight: 0 lb 3.90 oz Estimated Delivery Date Tue 10/15/2024	1		$2.31
Certified Mail® Tracking #: 70221670000211811267			$4.85
Return Receipt Tracking #: 9590 9402 5049 9092 4473 20			$4.10
Total			$11.26
Grand Total:			$11.26
Credit Card Remit Card Name: VISA Account #: XXXXXXXXXXXX1127 Approval #: 009985 Transaction #: 027 AID: A0000000031010 AL: VISA CREDIT PIN: Not Required		Chip	$11.26

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

In a hurry? Self-service kiosks offer quick and easy check-out. Any Retail Associate can show you how.

Preview your Mail
Track your Packages
Sign up for FREE @
https://informed.delivery.usps.com

All sales final on stamps and postage.

7022 1670 0002 1181 1267

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

Carlsbad, NM 88221

OFFICIAL USE

Certified Mail Fee	$4.35	0501 66
Extra Services & Fees (check box, add fee as appropriate)	$4.10	
☐ Return Receipt (hardcopy)	$0.00	
☐ Return Receipt (electronic)	$0.00	Postmark Here
☐ Certified Mail Restricted Delivery	$0.00	
☐ Adult Signature Required	$0.00	
☐ Adult Signature Restricted Delivery	$	
Postage	$2.31	
Total Postage and Fees	$11.26	10/09/2024
Sent To	Mr. William O. Stephens, Jr. c/o Kenneth D. Dugan Martin, Dugan & Martin 509 W. Pierce St. P.O. Box 2168 Carlsbad, NM 88221-2168	
Street and Apt. No.		
City, State, ZIP+4		

PS Form 3800, ... Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Mr. William O. Stephens, Jr.
c/o Kenneth D. Dugan
Martin, Dugan & Martin
509 W. Pierce St.
P.O. Box 2168
Carlsbad, NM 88221-2168

9590 9402 5049 9092 4473 20

2. Article Number (Transfer from service label)
7022 1670 0002 1181 1267

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
Stacey Jones ☐ Agent ☐ Addressee

B. Received by (Printed Name) Stacey Jones C. Date of Delivery 10/17/24

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☐ Adult Signature ☐ Priority Mail Express®
☐ Adult Signature Restricted Delivery ☐ Registered Mail™
☐ Certified Mail® ☐ Registered Mail Restricted Delivery
☐ Certified Mail Restricted Delivery ☐ Return Receipt for Merchandise
☐ Collect on Delivery ☐ Signature Confirmation™
☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation Restricted Delivery
Restricted Delivery

OCT 17 2024 CARLSBAD NM SERVICE

Email Us - Domestic Tracking & Shipping

Email Us

This page is for domestic shipments only (sent inside the U.S. only). To inquire about mail sent internationally (inbound or outbound), please visit our International Inquiry page (https://www.usps.com/help/claims.htm?tab=echo) to start an Inquiry.

Please enter the USPS Tracking® number if available

If you're asking about a package or service that gave you a USPS Tracking® number, please enter the number below.

Tracking Number: 70221670000211811267

Track Another Package

Latest Status As Of

THURSDAY
17 October 2024
by **3:46 pm**

Status

Delivered

October 17, 2024 at 3:46 pm
Delivered, Individual Picked Up at Post Office
CARLSBAD, NM - 88220

Feedback

Delivered

Having an issue related to this tracking number?

Start our Package Tracking form to file a case.

Start

Or please choose one of the issues below.

What's the reason for your inquiry?