

## 2023 Annual Report

MCA 357 (1RP-3025) Lea County, New Mexico

**REVIEWED** 

By Mike Buchanan at 8:52 am, Apr 23, 2024

Review of the 2023 Annual Report MCA 357 (1RP-3025) for groundwater: Content Satisfactory 1. Maverick has approval to move sampling events from quarterly to semiannual. 2. If monitoring wells: MW-12, MW-11 and MW-6 continue to remain dry during sampling events, Maverick must propose a contingency plan; for example, return in 30 days to attempt sampling dry wells again, or drilling deeper to reach water level, etc. 3. Continue groundwater monitoring and submit the 2024 Annual Report by April 1, 2025.

#212C-HN-02007 January 31, 2024



## 2023 Annual Report

MCA 357 (1RP-3025) Lea County, New Mexico

#212C-HN-02007 January 31, 2024

#### **PRESENTED TO**

Maverick Natural Resources, LLC 1410 NW County Road Hobbs, NM 88240

#### PRESENTED BY

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01/31/2024



MCA 357 (1RP-3025)	
Lea County, New Mexico	

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**1.0 INTRODUCTION** 

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On behalf of Maverick Natural Resources, LLC (Maverick), this report details the continuing groundwater monitoring and remedial activities at the Maverick Natural Resources, LLC (Maverick) MCA 357 Site in Lea County, New Mexico (Site). The Site is located in Unit M, Section 28, T17S, R32E, approximately 3.7 miles south of Maljamar, New Mexico, as shown in **Figure 1**. Groundwater monitoring and remediation at the Site are conducted under New Mexico Oil Conservation District (NMOCD) Administrative/Environmental Order AP-115-1. The Site and surrounding areas are rural grasslands used primarily for oil and gas production.

### 2.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

In December 2013, the Site operator submitted a Release Notification and Corrective Action Form C-141 to the NMOCD detailing a release with the source recorded as a flowline failure due to external corrosion. The release affected approximately 5,600 square feet of ground surface and pasture in the vicinity of the flowline failure. The Release Notification documents an estimated 24 barrels (bbls) of produced water was released and no fluids were subsequently recovered.

Previous environmental assessment activities include a drilling and soil sampling program, analytical laboratory analyses, and preliminary determinations of impacts to environmental media. Based on the preliminary determinations, a Corrective Action Plan (CAP) was submitted to the NMOCD in October 2014, approved in October 2014, and completed in December 2014.

Following the CAP approval, groundwater samples in the source area indicated the concentrations of chloride in groundwater (39,500 milligrams per liter [mg/L]) were reported at concentrations greater than the New Mexico Water Quality Control Commission (NMWQCC) guidance levels of 250 mg/L.

Four additional monitor wells (MW-2 through MW-5) were installed at the Site in September 2017, monitor wells MW-6 through MW-9 were installed in April 2019, monitor wells MW-10 through MW-12 were installed in April 2020, and monitor well MW-13 was installed in September 2020. Monitor wells MW-6, MW-11, MW-12, and MW-13 have been dry since installation. Phase-separated hydrocarbons (PSH) have not been historically measured at the Site.

Previously the Site was owned and operated by ConocoPhillips up until June 2022 when Maverick took over operation of the Site.

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#### 3.0 HYDROGEOLOGY

### 3.1 GEOLOGY

The Site is located in the Querecho Plains of southeastern New Mexico. This area generally consists of a thin cover of Quaternary sand dunes overlying the undivided Triassic Upper Chinle Group. The soil consists of well-drained sand and sandy clay loam. Typically, the surface layer is reddish-brown loamy fine sand. It is underlain by red light sandy clay. Below this is white moderately to well-indurated caliche. Underlying the caliche are dark reddish shales and thin sandstones of the undivided Triassic Upper Chinle Group. The Upper Chinle Group consists of silty shale, thin-bedded to massive, purplish red to reddish-brown with greenish reduction spots. The Upper Chinle Group is interbedded with thin beds of fine-grained sandstone with chert pebble gravel.

#### **3.2 SITE HYDROGEOLOGY**

The water-bearing zone consists of the Pliocene-age Ogallala aquifer under unconfined conditions at the Site. The Ogallala aquifer is located at the base of the Ogallala Formation. In general, the Ogallala Formation consists of quartz sand and gravel that is poorly to well-cemented with calcium carbonate and contains minor amounts of clay. The wells installed at the Site were drilled to depths of approximately 102 to 134 feet below ground surface (bgs) with static groundwater water levels at approximately 80 to 120 feet bgs.



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#### 4.0 GROUNDWATER MONITORING

The Site is currently the subject of quarterly groundwater monitoring under the NMOCD-approved abatement plan. The 2023 quarterly groundwater monitoring events were performed in March, May, September, and November of 2023.

As part of the ongoing groundwater monitoring program approved by the NMOCD, The groundwater monitor well network at the Site is comprised of monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13, sampled on a quarterly basis, with samples submitted for analysis of bromide, chloride, sulfate, and total dissolved solids (TDS). Annual reports are prepared and submitted to the NMOCD before the end of the first quarter of the following year.

#### 4.1 GROUNDWATER LEVEL MEASUREMENTS

Prior to purging and sampling the monitor well network, Tetra Tech personnel gauged each well to measure the depth to groundwater and the presence of PSH, if present. Groundwater level measurements are presented in **Table 1** along with calculated groundwater elevations. PSH was not identified in any of the Site wells in 2023. All of the monitoring wells in the Site monitoring well network were gauged during each groundwater monitoring event in 2023. Historical groundwater gauging data is presented in **Appendix C**.

Groundwater elevations ranged from 3,817.28 feet above mean sea level (AMSL) in MW-9 to 3,882.47 feet AMSL in MW-7 in 2023. Calculated groundwater elevations and the groundwater potentiometric surface maps for each groundwater monitoring event are presented in **Figures 3** through **5**. Groundwater flow at the Site is to the south with an average hydraulic gradient of 0.02420 feet per foot in 2023, generally consistent with historical groundwater flow at the Site.

#### 4.2 GROUNDWATER SAMPLING

During the 2023 monitoring events, wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, and MW-9 were sampled in March, May, September, and November. MW-10 and MW-13 were dry in March but were sampled in May, September, and November. Low-flow sampling methodology was utilized to purge and sample each well using a bladder pump with dedicated disposable tubing and bladders in accordance with United States Environmental Protection Agency (EPA) guidance. The bladder pump intake was set to the approximate center of the screened interval for each monitor well prior to purging. **Table 2** presents a summary of the groundwater field analytical parameters that were tested during the sampling of the wells.

Groundwater quality parameters including temperature, pH, Specific Conductivity (SC), Dissolved Oxygen (DO), Oxygen Reduction Potential (ORP), and turbidity were recorded during purging in addition to well drawdown and flow rate to document monitor well stabilization. Once field parameters stabilized at each well, samples were collected into laboratory-provided pre-preserved sample containers, immediately placed on ice, and transported to Pace Analytical National in Mount Juliet, Tennessee, under chain-of-custody documentation for analysis of the following constituents of concern (COCs):

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- Bromide by EPA Method 9056A;
- Chloride by EPA Method 9056A
- Sulfate by EPA Method 9056A; and
- Total dissolved solids (TDS) by Method 2540 C-2011.

#### **4.3 GROUNDWATER ANALYTICAL RESULTS**

During the March 2023 sampling event, monitoring wells MW-1 through MW-4 and MW-5 through MW-9 were sampled. Monitor Wells MW-6 and MW-10 through MW-13 did not contain enough water to sample. Chloride and TDS concentrations for all wells sampled exceeded the applicable NMWQCC Groundwater Quality Standards of 250 mg/L and 1,000 mg/L, respectively. Additionally, the sulfate concentration for MW-1 exceeded the NMWQCC standard of 600 mg/L during the January monitoring event. Two duplicate samples were collected from MW-1 during this event, both of which exceeded the NMWQCC standards for chloride and TDS. No additional exceedances were reported.

During the March, May, September, and November 2023 sampling events, chloride was reported at concentrations greater than NMWQCC standards in all of the sampled monitoring wells and TDS was reported at concentrations greater than the NMWQCC standards in all sampled monitoring wells except for MW-7 during the March and October groundwater monitoring events. Sulfate was only reported at a concentration greater than the NMWQCC standard in MW-1 during the January groundwater monitoring event. One duplicate sample was collected from MW-1 during each of the three groundwater monitoring events. No additional regulatory exceedances were reported during 2022.

The highest concentrations of chloride and TDS were reported in MW-1. Concentrations of chloride in MW-1 ranged from 55,800 mg/L in January 2022 to 10,200 mg/L in October 2022. Concentrations in the majority of monitor wells appear to be relatively stable. Concentrations of TDS in MW-1 ranged from 21,300 in April 2022 to 83,200 in January 2022. The January analytical results reported for the samples collected from MW-1 are believed to be anomalous due to the disturbance of settled fines in the well during sampling, and the concentrations reported during the April and October groundwater monitoring events are believed to be representative of COC concentrations at this location.

**Table 3** presents a summary of the groundwater analytical results screened against NMWQCC Groundwater Quality Standards. The laboratory analytical data packages including chain-of-custody documentation are provided in **Appendix A**, chloride, sulfate, and TDS concentration maps are provided in **Figures 6** through **11**, and chloride concentration trend graphs are presented in **Appendix B**.

**5.0 QUALITY ASSURANCE/QUALITY CONTROL** 

A total of eight primary groundwater samples were collected and analyzed during each groundwater monitoring event in 2022. Additionally, two field duplicates in January and April and one field duplicate in October were collected and analyzed.

### 5.1 FIELD AND LABORATORY PRECISION

The project measurement quality objectives are 30 percent for relative-percent-difference (RPD) between primary and duplicate sample results for inorganic analytes including bromide, chloride, sulfate, and TDS. Where estimated concentrations are present and reported concentrations are J-flagged, the RPDs are elevated to 60 percent. **Table 3** presents primary and duplicate sample results and RPD calculations. Out of the 12 RPD calculations, the bromide, chloride, and TDS analytical results for the primary-duplicate sample pair for MW-1 during the January groundwater monitoring event were greater than the project data quality objectives of 30 percent.

During the January sampling event, Tetra Tech field staff experienced equipment problems with the bladder pump down the well during the sampling of MW-1. Consequently, settled fines from the bottom of this monitoring well are believed to have been disturbed, contributing to elevated COC concentrations in both the primary and duplicate samples and generating the disparity in reported concentrations between the primary and duplicate samples collected from MW-1 during this event. Additionally, reported COC concentrations at MW-1 were much higher than expected based on historical concentrations and concentrations reported in the April and October groundwater monitoring events at MW-1.

### **5.2 LABORATORY DATA QUALIFICATION**

No laboratory analytical results were qualified in the three analytical data packages during the three 2022 groundwater monitoring events.

### 5.3 DATA USABILITY

Groundwater analytical data are deemed useable for the purpose of determining groundwater COC concentrations at the Site with the exception of primary and duplicate sample results collected from MW-1 during the January groundwater monitoring event. As discussed above, fines settled in MW-1 are believed to have been disturbed during sampling causing elevated analytical results of COCs analyzed. Otherwise, field duplicate samples reported results within Data quality objectives.

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#### 6.0 2024 WORKPLAN

Based on the size of the monitor well network and data accumulated to date, Tetra Tech previously requested the groundwater sampling program be reduced to a semi-annual basis in the 2021 Annual Monitoring and Remedial Activities Report for the Site dated March 24, 2022, and the 2022 Annual Report dated January 27, 2023. As of the date of this report, no response to this request has been received and Tetra Tech respectfully reiterates the request to shift the annual program to a Semi-annual basis with annual reporting to the NMOCD.



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#### 7.0 REFERENCES

Nicholson Jr., A. and Clebsch Jr., A. (1961). Geology and Ground-Water Conditions in Souther Lea County, New Mexico. Socorro, NM: State Bureau of Mines and Mineral Resources and New Mexico Institute of Mining & Technology Campus Stationuthor.



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## FIGURES

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## TABLES

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# Table 12023 Groundwater Elevation SummaryMCA 357Lea County, New Mexico

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3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 5/24/2023 9/13/2023	102.7           102.7           102.7           102.7           107.8           107.8           107.7           117.3           117.3           117.3           117.3           117.3           117.3           113.0           113.0	84.15 84.40 84.60 84.24 89.45 83.39 83.55 83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	(feet AMSL) 3,956.78 3,956.78 3,956.78 3,956.78 3,963.58 3,963.58 3,963.58 3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39	(feet) 3,872.63 3,872.38 3,872.18 3,872.54 3,874.13 3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,863.44 3,863.44 3,850.59 3,851.13 3,851.13 3,851.43 3,861.02
5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 5/24/2023 9/13/2023	102.7           102.7           102.7           107.8           107.8           107.7           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           113.0	84.40 84.60 84.24 89.45 83.39 83.55 83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,956.78 3,956.78 3,963.58 3,963.58 3,963.58 3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,872.38 3,872.18 3,872.54 3,874.13 3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         9/13/2023         9/13/2023	102.7           102.7           107.8           107.8           107.7           117.3           117.3           117.3           117.3           117.3           117.3           113.0	84.60 84.24 89.45 83.39 83.55 83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,956.78 3,956.78 3,963.58 3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,872.18 3,872.54 3,874.13 3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         9/13/2023	102.7           107.8           107.8           107.7           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           113.0	84.24 89.45 83.39 83.55 83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,956.78 3,963.58 3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,872.54 3,874.13 3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 5/24/2023 9/13/2023	107.8           107.8           107.7           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           117.3           113.0	89.45           83.39           83.55           83.29           87.73           88.19           89.06           87.90           94.80           94.23           93.96           89.35           89.66	3,963.58 3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,874.13 3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         9/13/2023         9/13/2023	107.8           107.7           117.3           117.3           117.3           117.3           117.3           103.2           103.2           103.2           103.2           117.3	83.55 83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,963.58 3,963.58 3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,880.19 3,880.03 3,880.29 3,863.61 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         11/30/2023         5/24/2023         9/13/2023         5/24/2023         9/13/2023         5/24/2023         9/13/2023         9/13/2023         9/13/2023	107.7           117.3           117.3           117.3           117.3           117.3           103.2           103.2           103.2           103.2           103.2           117.3	83.29 87.73 88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,963.58 3,951.34 3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,880.29 3,863.61 3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
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5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023	117.3           117.3           117.3           103.2           103.2           103.2           103.2           103.2           117.3	88.19 89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,951.34 3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39	3,863.15 3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023         9/13/2023         9/13/2023         9/13/2023	117.3           117.3           103.2           103.2           103.2           103.2           103.2           113.0           113.0	89.06 87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,951.34 3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,950.37	3,862.28 3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
11/30/2023         3/28/2023         5/24/2023         9/13/2023         11/30/2023         3/28/2023         5/24/2023         9/13/2023	117.3           103.2           103.2           103.2           103.2           103.2           103.2           113.0           113.0	87.90 94.80 94.23 94.26 93.96 89.35 89.66	3,951.34 3,945.39 3,945.39 3,945.39 3,945.39 3,945.39 3,950.37	3,863.44 3,850.59 3,851.16 3,851.13 3,851.43
3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023	103.2           103.2           103.2           103.2           103.2           113.0           113.0	94.80 94.23 94.26 93.96 89.35 89.66	3,945.39 3,945.39 3,945.39 3,945.39 3,950.37	3,850.59 3,851.16 3,851.13 3,851.43
5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023	103.2 103.2 103.2 113.0 113.0	94.23 94.26 93.96 89.35 89.66	3,945.39 3,945.39 3,945.39 3,950.37	3,851.16 3,851.13 3,851.43
9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023	103.2           103.2           113.0           113.0	94.26 93.96 89.35 89.66	3,945.39 3,945.39 3,950.37	3,851.13 3,851.43
11/30/2023 3/28/2023 5/24/2023 9/13/2023	103.2 113.0 113.0	93.96 89.35 89.66	3,945.39 3,950.37	3,851.43
3/28/2023 5/24/2023 9/13/2023	113.0 113.0	89.35 89.66	3,950.37	3,851.43
5/24/2023 9/13/2023	113.0	89.66		
9/13/2023				
9/13/2023			3,950.37	3,860.71
		89.67	3,950.37	3,860.70
	112.9	89.35	3,950.37	3,861.02
3/28/2023	128.1	Dry	3,952.96	Dry
5/24/2023	128.1	Dry	3,952.96	Dry
9/13/2023	128.1	Dry	3,952.96	Dry
11/30/2023	128.1	Dry	3,952.96	Dry
3/28/2023	127.3	88.15	3,972.11	3,883.96
5/24/2023	127.3	89.69	3,972.11	3,882.42
9/13/2023	127.3	89.88	3,972.11	3,882.23
11/30/2023	127.3	89.58	3,972.11	3,882.53
3/28/2023	118.0	95.13	3,956.83	3,861.70
				3,861.70
				3,860.55
				3,862.03
				3,818.13
				3,817.89
				3,817.64
				3,818.28
				3,838.47
				3,838.59
			· · · · · · · · · · · · · · · · · · ·	3,839.10
				3,839.10 Dry
				Dry
J/LT/LULJ			· · · · · · · · · · · · · · · · · · ·	Dry
	132.9			Dry
	5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 9/13/2023 3/28/2023 5/24/2023 9/13/2023 11/30/2023 3/28/2023 5/24/2023 5/24/2023 9/13/2023	5/24/2023118.09/13/2023118.011/30/2023118.13/28/2023133.55/24/2023133.59/13/2023133.511/30/2023133.03/28/2023132.55/24/2023132.59/13/2023132.55/24/2023132.59/13/2023132.59/13/2023132.511/30/2023132.59/13/2023132.95/24/2023132.99/13/2023132.9	5/24/2023118.095.139/13/2023118.096.2811/30/2023118.194.803/28/2023133.5118.405/24/2023133.5118.649/13/2023133.5118.8911/30/2023133.0118.253/28/2023132.5Dry5/24/2023132.5124.739/13/2023132.5124.6111/30/2023132.5124.6111/30/2023132.9Dry5/24/2023132.9Dry9/13/2023132.9Dry9/13/2023132.9Dry	5/24/2023118.095.133,956.839/13/2023118.096.283,956.8311/30/2023118.194.803,956.833/28/2023133.5118.403,936.535/24/2023133.5118.643,936.539/13/2023133.5118.893,936.5311/30/2023133.0118.253,936.533/28/2023132.5Dry3,963.205/24/2023132.5124.733,963.209/13/2023132.5124.613,963.2011/30/2023132.5124.613,963.203/28/2023132.5124.613,963.203/28/2023132.9Dry3,948.305/24/2023132.9Dry3,948.30



# Table 12023 Groundwater Elevation SummaryMCA 357Lea County, New Mexico

Well ID	Gauging Date	Well Total Depth (feet)	Depth to Water (feet BTOC)	Top of Casing Elevation (feet AMSL)	Groundwater Elevation (feet)
	3/28/2023	132.3	Dry	3,930.91	Dry
MW-12	5/24/2023	132.3	Dry	3,930.91	Dry
	9/13/2023	132.3	Dry	3,930.91	Dry
	11/30/2023	132.0	Dry	3,930.91	Dry
	3/28/2023	132.3	Dry	3,931.32	Dry
MW-13	5/24/2023	132.3	109.20	3,931.32	3,822.12
14144-13	9/13/2023	132.3	109.49	3,931.32	3,821.83
	11/30/2023	132.9	109.20	3,931.32	3,822.12

Notes:

BTOC: Below Top of Casing

AMSL: Above Mean Sea Level

NG: Not gauged



## Table 22023 Groundwater Field ParametersMCA 357Lea County, New Mexico

Well ID	Gauging Date	РН	Temperature (C)	Specific Conducivity (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation- Reduction Potential (mV)	Turbidity (NTU)
	3/28/2023	7.02	20.8	46,254	1.2	38.8	NS
MW-1	5/24/2023	6.59	23.5	3,430	1.9	97.4	11.5
101 0 0 - 1	9/13/2023	6.48	19.8	4,020	1.6	64.2	26.1
	11/30/2023	5.92	18.5	85,200	1.7	133.2	36.1
	3/28/2023	7.5	20.7	15,001	-38.7	-164.5	NS
MW-2	5/24/2023	6.34	20.6	18,330	1.1	93.7	27.2
	9/13/2023	6.27	19.3	14,410	1.6	58.1	6.7
	11/30/2023	6.33	19.2	15,420	1.4	71.3	4.9
	3/28/2023	7.04	20.8	13,095	24.5	-141.1	NS
MANA/ O	5/24/2023	6.56	20.7	7,910	3.4	92.5	25.6
MW-3	9/13/2023	6.65	19.6	8,650	1.8	152.3	3.1
	11/30/2023	6.43	17.6	8,810	1.2	109.3	4.0
	3/28/2023	7.4	20.7	19,635	-34.5	-139.8	NS
	5/24/2023	6.8	20.9	21,200	4.8	93.3	14.6
MW-4	9/13/2023	6.63	19.5	16,410	5.0	122.6	6.1
	11/30/2023	6.36	18.7	18,100	5.8	119.4	4.8
	3/28/2023	7.48	20.6	3,075	4.3	69.9	NS
	5/24/2023	7.23	20.6	5,080	3.4	64.5	186.0
MW-5	9/13/2023	7.39	19.8	4,130	2.2	89.9	6.6
	11/30/2023	6.86	18.4	3,480	5.5	98.2	2.7
	3/28/2023	NS	NS	 NS	NS	NS	NS
	5/24/2023	NS	NS	NS	NS	NS	NS
MW-6	9/13/2023	NS	NS	NS	NS	NS	NS
	11/30/2023	NS	NS	NS	NS	NS	NS
	3/28/2023	20.7	7.8	1,031	2.0	-191.4	NS
	5/24/2023	7.78	21.5	4,230	1.9	148.3	11.0
MW-7	9/13/2023	7.04	20.0	3,240	1.9	-36.1	15.5
	11/30/2023	6.63	19.6		1.0	-30.1	7.8
			20.7	3,450			
	3/28/2023	7.83		6,331	1.8	30.8	NS 24.0
MW-8	5/24/2023	6.65	24.0	5,080	8.5	86.2	34.6
	9/13/2023	6.48	19.8	6,850	2.9	148.8	5.7
	11/30/2023	6.64	19.0	5,370	0.7	106.8	6.9
	3/28/2023	7.33	20.7	11,266	1.5	6.7	NS
MW-9	5/24/2023	6.72	21.8	13,750	6.7	143.7	35.2
	9/13/2023	6.76	19.7	9,180	1.8	145.6	32.9
	11/30/2023	6.42	18.2	12,960	4.2	136.9	26.0
	3/28/2023	NS	NS	NS	NS	NS	NS
MW-10	5/24/2023	6.85	22.4	7,680	1.5	-60.8	8.6
-	9/13/2023	6.65	19.8	5,870	2.5	17.0	5.9
	11/30/2023	6.58	19.2	4,810	1.4	20.2	18.6
	3/28/2023	NS	NS	NS	NS	NS	NS
MW-11	5/24/2023	NS	NS	NS	NS	NS	NS
	9/13/2023	NS	NS	NS	NS	NS	NS
	11/30/2023	NS	NS	NS	NS	NS	NS



#### Table 2 2023 Groundwater Field Parameters MCA 357 Lea County, New Mexico

Well ID	Gauging Date	РН	Temperature (C)	Specific Conducivity (µS/cm)	Dissolved Oxygen (mg/L)	Oxidation- Reduction Potential (mV)	Turbidity (NTU)
	3/28/2023	NS	NS	NS	NS	NS	NS
MW-12	5/24/2023	NS	NS	NS	NS	NS	NS
	9/13/2023	NS	NS	NS	NS	NS	NS
	11/30/2023	NS	NS	NS	NS	NS	NS
	3/28/2023	NS	NS	NS	NS	NS	NS
MW-13	5/24/2023	7.79	20.4	4,225	3.3	74.3	40.2
141 44-13	9/13/2023	7.37	19.4	5,870	3.0	110.2	23.2
	11/30/2023	7.09	17.6	4,590	5.6	126.4	47.1

Notes:

BTOC: Below Top of Casing

AMSL: Above Mean Sea Level

NS: Not Sampled



# Table 32023 Groundwater Analytical SummaryMCA 357Lea County, New Mexico

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Well ID	Well ID Sample Date		Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)			
IMWQCC Groundwa	ater Quality Standards	NE	250	600	1,000			
	3/28/2023	17.4	7,680	148	23,000			
	5/24/2023	69.9	29,700	453	59,300			
MW-1	9/13/2023	108	38,900	560	64,100 Q			
	11/30/2023	84.8	35,900	547	103,000			
	3/28/2023	0.897 J	296	85	958			
	5/24/2023	9.31 J	5,340	290	11,400			
MW-2	9/13/2023	9.33 J	5,500	309	13,300			
	11/30/2023	7.79 J	5,450	341	14,000			
	3/28/2023	10.0 J	3,450	160	9,340			
	5/24/2023	10.2	3,590	158	8,480			
MW-3	9/13/2023	10.2	3,750	171	9,220			
	11/30/2023	6.10 J	3,800	179	9,760			
	3/28/2023	8.09 J	6,290	191	15,800			
	5/24/2023	10.9	6,350	172	16,100			
MW-4	9/13/2023	11.2	6,640	186	14,400			
	11/30/2023	7.04 J	7,180	203	16,700			
		5.61	<u>610</u>		· · ·			
MW-5	3/28/2023			154	3,290			
	5/24/2023	4.37 J	1,300	<u>113</u> 118	3,660			
	9/13/2023	4.41 J	1,420		4,500 3,960			
	11/30/2023	0.612 J 1,350 131 3,9 Not Sampled - Dry						
	3/28/2023			npled - Dry				
MW-6	5/24/2023			1 2				
	9/13/2023			npled - Dry				
	11/30/2023	10.0		npled - Dry	44,000			
	3/28/2023	12.2	5,140	295	14,200			
MW-7	5/24/2023	6.69 J	976	181	2,130			
	9/13/2023	4.03 J	1,010	198	2,240			
	11/30/2023	1.63 B	890	175	2,260			
	3/28/2023	7.29 J	1,950	75.9	5,090			
MW-8	5/24/2023	7.51 J	2,030	88.3	4,040			
	9/13/2023 11/30/2023	7.52 J 4.50 J	2,100 2,210	95.4 97.2	6,330 5,900			
	3/28/2023	4.50 J 10.4	5,540	460	16,300			
	5/24/2023	10.4	6,050	460	12,100			
MW-9	9/13/2023	10.3	6,040	463	15,600			
	9/13/2023	10.3	5,400	400	16,200			
	3/28/2023	10.5	· · · ·	npled - Dry	10,200			
	5/24/2023	10.3	5,950	482	17,300			
MW-10	9/13/2023	7.22 J	1,910	52.1 B	4,590			
	11/30/2023	7.77 J	1,680	52.2	4,920			
	3/28/2023	1.11.0		npled - Dry	7,020			
	5/24/2023			npled - Dry				
MW-11	9/13/2023			npled - Dry				
				· ·				
	11/30/2023		Not Sam	npled - Dry				



## Table 32023 Groundwater Analytical SummaryMCA 357Lea County, New Mexico

Well ID	Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)			
NMWQCC Groundwater Quality Standards		NE	250	600	1,000			
	3/28/2023	Not Sampled - Dry						
MW-12	5/24/2023	Not Sampled - Dry						
101 00-12	9/13/2023	Not Sampled - Dry						
	11/30/2023		Not Sam	oled - Dry				
	3/28/2023		Not Sam	oled - Dry				
MW-13	5/24/2023	9.30 J 1,380 210 3,730 C						
101 00-13	9/13/2023	6.72	1,460	220	3,190			
	11/30/2023	4.59	1,610	216	3,680			

Notes:

NMWQCC: New Mexico Water Quality Control Commission

Exceeds applicable regulatory standards

NE: Not Established

B: The same analyte is found in the associated blank.

TDS: Total Dissolved Solids

Q: Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

J: The identification of the analyte is acceptable; the reported value is an estimate



# Table 4Quality Assurance/Quality Control SummaryMCA 357Lea County, New Mexico

Well ID	Sample Date	Analyte	Primary Sample Result (mg/L)	Duplicate Sample Result (mg/L)	RPD	Within DQOs
		Bromide	17.4	17.8	2.3%	Yes
MW-1	3/28/2023	Chloride	7,680	8,050	4.7%	Yes
141 4 4 - 1	5/20/2025	Sulfate	148	154	4.0%	Yes
		TDS	23,000	27,000	16.0%	Yes
		Bromide	69.9	83.9	18.2%	Yes
MW-1	5/24/2023	Chloride	29,700	31,100	4.6%	Yes
141 4 4 - 1	5/24/2025	Sulfate	453	425	6.4%	Yes
		TDS	59,300	57,500	3.1%	Yes
		Bromide	6.72	6.68	0.6%	Yes
MW-13	9/13/2023	Chloride	1,460	1,470	0.7%	Yes
10100-13	9/13/2023	Sulfate	220	217	1.4%	Yes
		TDS	3,190	3,050	4.5%	Yes
		Bromide	4.59	4.65	1.3%	Yes
MW-13	11/30/2023	Chloride	1,610	1,530	5.1%	Yes
101 00 - 1 3	11/30/2023	Sulfate	216	202	6.7%	Yes
		TDS	3,680	3,650	0.8%	Yes

Notes:

RPD: Relative Percent Difference calculated as = (SR-DR)\*200/(SR+DR)

DQO: Data Quality Objectives

ND: Not Detected above the laboratory method detection limit

N/A: Not Applicable

2023 Annual Report January 31, 2024

## APPENDIX A: LABORATORY ANALYTICAL DATA

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Pace Analytical® ANALYTICAL REPORT

## Tetra Tech EMI - Houston, TX

April 12, 2023

Sample Delivery Group: Samples Received: Project Number: Description:

Report To:

L1600787 04/01/2023 212C-HN-02228 MNR - MCA 357 2023

Dylon Breyman 1500 CityWest Boulevard Suite 1000 Houston, TX 77042

Entire Report Reviewed By:

that tphat

Chad A Upchurch Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

### Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

Released to Imaging: 4/23/2024 9:03:08 AM Tetra Tech EMI - Houston, TX

PROJECT: 212C-HN-02228

SDG: L1600787

DATE/TIME: 04/12/23 17:18

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# SAMPLE SUMMARY

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MW-8 L1600787-01 GW			Collected by Matthew C.	Collected date/time 03/28/23 15:45	Received da 04/01/23 08:	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG2034511	1	04/03/23 01:39	04/03/23 08:18	ARD	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG2036083	10	04/05/23 19:56	04/05/23 19:56	GEB	Mt. Juliet, T
Net Chemistry by Method 9056A	WG2036083	100	04/05/23 20:10	04/05/23 20:10	GEB	Mt. Juliet, TI
			Collected by	Collected date/time	Received da	te/time
MW-3 L1600787-02 GW			Matthew C.	03/29/23 09:30	04/01/23 08:	30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG2036083	10	04/05/23 20:23	04/05/23 20:23	GEB	Mt. Juliet, Tl
Wet Chemistry by Method 9056A	WG2036083	100	04/05/23 20:36	04/05/23 20:36	GEB	Mt. Juliet, TI
			Collected by Matthew C.	Collected date/time 03/29/23 10:50	Received da 04/01/23 08:	
MW-9 L1600787-03 GW						
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036083	10	04/05/23 20:48	04/05/23 20:48	GEB	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036083	100	04/05/23 21:01	04/05/23 21:01	GEB	Mt. Juliet, T
			Collected by	Collected date/time	Received da	te/time
MW-4 L1600787-04 GW			Matthew C.	03/29/23 12:35	04/01/23 08:	30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG2036975	10	04/06/23 13:44	04/06/23 13:44	LBR	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG2036975	100	04/06/23 13:57	04/06/23 13:57	LBR	Mt. Juliet, T
			Collected by	Collected date/time	Received da	te/time
MW-2 L1600787-05 GW			Matthew C.	03/29/23 14:40	04/01/23 08:	30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036975	1	04/06/23 14:10	04/06/23 14:10	LBR	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036975	5	04/08/23 01:27	04/08/23 01:27	LBR	Mt. Juliet, TI
			Collected by	Collected date/time	Received da	
MW-7 L1600787-06 GW			Matthew C.	03/30/23 10:20	04/01/23 08:	:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036975	10	04/08/23 01:40	04/08/23 01:40	LBR	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2036975	100	04/08/23 01:54	04/08/23 01:54	LBR	Mt. Juliet, TI

**PROJECT**: 212C-HN-02228

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MW-5 L1600787-07 GW			Collected by Matthew C.	Collected date/time 03/30/23 12:35	Received da: 04/01/23 08:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2036975	5	04/08/23 02:07	04/08/23 02:07	LBR	Mt. Juliet, TN
MW-1 L1600787-08 GW			Collected by Matthew C.	Collected date/time 03/30/23 14:20	Received da: 04/01/23 08:	
Method	Batch	Dilution	Preparation	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, TN
Net Chemistry by Method 9056A	WG2036975	10	04/08/23 02:34	04/08/23 02:34	LBR	Mt. Juliet, TN
Vet Chemistry by Method 9056A	Batch Dilution Preparation date/time   WG2034730 1 04/04/23 09::   WG2036975 10 04/08/23 02::	04/08/23 02:48	04/08/23 02:48	LBR	Mt. Juliet, TN	
			Collected by Matthew C.	Collected date/time 03/30/23 00:00	Received da: 04/01/23 08:	
DUP-1 L1600787-09 GW	2.11	D.1				
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2034730	1	04/04/23 09:26	04/04/23 16:48	AS	Mt. Juliet, TN
Net Chemistry by Method 9056A	WG2036975	10	04/08/23 03:01	04/08/23 03:01	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2036975	100	04/08/23 03:15	04/08/23 03:15	LBR	Mt. Juliet, TN

SDG: L1600787 DATE/TIME: 04/12/23 17:18 PAGE: 4 of 23

# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

that tphat

Chad A Upchurch Project Manager



PROJECT: 212C-HN-02228

SDG: L1600787 DATE/TIME:

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#### SAMPLE RESULTS - 01 L1600787

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# Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	 'Ср
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	5090		100	1	04/03/2023 08:18	WG2034511	Tc

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time				
Bromide	7.29	J	3.53	10.0	10	04/05/2023 19:56	<u>WG2036083</u>			
Chloride	1950		37.9	100	100	04/05/2023 20:10	<u>WG2036083</u>			
Sulfate	75.9		5.94	50.0	10	04/05/2023 19:56	WG2036083			

SAMPLE RESULTS - 02 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					'Cn
	Result	Qualifier I	RDL Dilut	ion Analysis	Batch	Ср
Analyte	mg/l	r	ng/l	date / time		2
Dissolved Solids	9340	2	200 1	04/04/2023 16:48	WG2034730	Tc

Wet Chemist	Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn		
Bromide	10.0	J	3.53	10.0	10	04/05/2023 20:23	WG2036083				
Chloride	3450		37.9	100	100	04/05/2023 20:36	WG2036083		5		
Sulfate	160		5.94	50.0	10	04/05/2023 20:23	WG2036083		Sr		

SAMPLE RESULTS - 03 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					1 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	16300	200	1	04/04/2023 16:48	WG2034730	ЪС

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	10.4		3.53	10.0	10	04/05/2023 20:48	WG2036083		CII	
Chloride	5540		37.9	100	100	04/05/2023 21:01	WG2036083		5	
Sulfate	460		5.94	50.0	10	04/05/2023 20:48	WG2036083		Sr	

SAMPLE RESULTS - 04 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	-	·						l'Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		15800		200	1	04/04/2023 16:48	WG2034730	Тс

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			$^{4}$ Cn	
Bromide	8.09	J	3.53	10.0	10	04/06/2023 13:44	WG2036975		CII	
Chloride	6290		37.9	100	100	04/06/2023 13:57	WG2036975		5	
Sulfate	191		5.94	50.0	10	04/06/2023 13:44	WG2036975		Sr	

SAMPLE RESULTS - 05 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	1	·						1 Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		958		20.0	1	04/04/2023 16:48	WG2034730	Тс

Wet Chemist	try by Method 9	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	0.897	J	0.353	1.00	1	04/06/2023 14:10	WG2036975	CII
Chloride	296		1.90	5.00	5	04/08/2023 01:27	WG2036975	5
Sulfate	84.5		0.594	5.00	1	04/06/2023 14:10	WG2036975	Sr

SAMPLE RESULTS - 06 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					1 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	14200	200	1	04/04/2023 16:48	WG2034730	Тс

Wet Chemist	try by Method §	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	12.2		3.53	10.0	10	04/08/2023 01:40	WG2036975	CII
Chloride	5140		37.9	100	100	04/08/2023 01:54	WG2036975	5
Sulfate	295		5.94	50.0	10	04/08/2023 01:40	WG2036975	Sr

SAMPLE RESULTS - 07 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					 1'Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	3290	50.0	1	04/04/2023 16:48	WG2034730	Tc

Wet Chemist	ry by Method S	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		$^{4}$ Cn
Bromide	5.61		1.76	5.00	5	04/08/2023 02:07	WG2036975	CII
Chloride	610		1.90	5.00	5	04/08/2023 02:07	WG2036975	5
Sulfate	154		2.97	25.0	5	04/08/2023 02:07	WG2036975	ဳSr

SAMPLE RESULTS - 08 L1600787

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#### Gravimetric Analysis by Method 2540 C-2011

	,						 1'Cn
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	23000		400	1	04/04/2023 16:48	WG2034730	Tc

Wet Chemist	try by Method §	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	17.4		3.53	10.0	10	04/08/2023 02:34	WG2036975	CII
Chloride	7680		37.9	100	100	04/08/2023 02:48	WG2036975	5
Sulfate	148		5.94	50.0	10	04/08/2023 02:34	WG2036975	Sr

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#### Gravimetric Analysis by Method 2540 C-2011

	<u> </u>					 (Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		 2
Dissolved Solids	27000	400	1	04/04/2023 16:48	WG2034730	Tc

Wet Chemist	ry by Method S	9056A						
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
Bromide	17.8		3.53	10.0	10	04/08/2023 03:01	<u>WG2036975</u>	
Chloride	8050		37.9	100	100	04/08/2023 03:15	WG2036975	
Sulfate	154		5.94	50.0	10	04/08/2023 03:01	WG2036975	

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Gravimetric Analysis by Method 2540 C-2011

#### QUALITY CONTROL SUMMARY L1600787-01

Method Blank (MB)

(MB) R3909358-1 04	4/03/23 08:18			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

#### L1599970-01 Original Sample (OS) • Duplicate (DUP)

L1599970-01 Orig	· ·			· · · ·		
(OS) L1599970-01 04/03	3/23 08:18 • (DUP	) R3909358-3	3 04/03/2	3 08:18		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	3170	3210	1	1.26		5

#### L1600410-01 Original Sample (OS) • Duplicate (DUP)

L1600410-01 Orig	ginal Sample	(OS) • Dup	plicate (	DUP)			<sup>7</sup> Gl
(OS) L1600410-01 04/0	03/23 08:18 • (DUP	) R3909358-4	4 04/03/2	3 08:18			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	<sup>8</sup> Al
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	426	431	1	1.17		5	°Sc

#### Laboratory Control Sample (LCS)

(LCS) R3909358-2 04	1/03/23 08:18				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	7820	88.9	77.3-123	

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Gravimetric Analysis by Method 2540 C-2011

#### QUALITY CONTROL SUMMARY L1600787-02,03,04,05,06,07,08,09

#### Method Blank (MB)

(MB) R3910412-1 04/0	04/23 16:48			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

#### L1600164-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1600164-01 04	<u> </u>	· · ·		,			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		6	
Dissolved Solids	1130	1120	1	0.890		)	

# L1600187-01 Original Sample (OS) • Duplicate (DUP)

L1600187-01 Ori	ginal Sample	(OS) • Dup	olicate (I	DUP)		
OS) L1600187-01 04/	04/23 16:48 • (DUP	) R3910412-4	04/04/23	16:48		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	465	467	1	0.429		5

#### Laboratory Control Sample (LCS)

(LCS) R3910412-2 04/04/23 16:48								
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	mg/l	mg/l	%	%				
Dissolved Solids	8800	8460	96.1	77.3-123				

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# QUALITY CONTROL SUMMARY

#### Method Blank (MB)

(MB) R3910082-1 04/05/23 09:57

. ,	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	mg/l		mg/l	mg/l	1
Bromide	U		0.353	1.00	
Chloride	0.392	J	0.379	1.00	3
Sulfate	U		0.594	5.00	Ľ

#### L1599592-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1599592-01 04/05/23 12:38 • (DUP) R3910082-3 04/05/23 12:52									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	mg/l	mg/l		%		%			
Bromide	0.570	0.588	1	0.000		15			
Chloride	124	123	1	0.722		15			
Sulfate	275	276	1	0.486	E	15			

#### L1600488-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1600488-09 04/05/	23 17:17 • (DUP)	) R3910082-6	04/05/23	3 17:30		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	0.538	0.536	1	0.298	J	15
Chloride	4.02	4.06	1	0.938		15
Sulfate	7.79	7.96	1	2.15		15

#### Laboratory Control Sample (LCS)

(LCS) R3910082-2 04/0	(LCS) R3910082-2 04/05/23 10:10							
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	mg/l	mg/l	%	%				
Bromide	40.0	38.6	96.5	80.0-120				
Chloride	40.0	38.5	96.3	80.0-120				
Sulfate	40.0	38.5	96.3	80.0-120				

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# QUALITY CONTROL SUMMARY

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#### L1599592-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1599592-01 04/05/	23 12:38 • (MS)	R3910082-4 0	4/05/23 13:05	• (MSD) R3910	082-5 04/05/2	23 13:19						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	0.570	44.3	45.0	87.5	88.8	1	80.0-120			1.48	15
Chloride	50.0	124	166	166	83.9	84.8	1	80.0-120			0.257	15
Sulfate	50.0	275	316	316	82.7	82.3	1	80.0-120	E	E	0.0658	15

#### L1600488-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1600488-09 04/05	/23 17:17 • (MS)	R3910082-7 0	4/05/23 17:4	3			
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	50.0	0.538	47.5	94.0	1	80.0-120	
Chloride	50.0	4.02	52.1	96.1	1	80.0-120	
Sulfate	50.0	7.79	56.3	97.0	1	80.0-120	

DATE/TIME: 04/12/23 17:18

#### QUALITY CONTROL SUMMARY L1600787-04,05,06,07,08,09

#### Method Blank (MB)

(MB) R3910937-1	04/06/23 10:11

(INID) K2810827-1 C	14/00/23 10.11				
	MB Result	MB Qualifier	MB MDL	MB RDL	
Analyte	mg/l		mg/l	mg/l	
Bromide	U		0.353	1.00	
Chloride	U		0.379	1.00	
Sulfate	U		0.594	5.00	

#### L1601388-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1601388-01 04/06/2	DS) L1601388-01 04/06/23 12:53 • (DUP) R3910937-3 04/06/23 13:05							
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	mg/l	mg/l		%		%		
Bromide	U	U	1	0.000		15		
Chloride	32.8	32.8	1	0.226		15		
Sulfate	54.8	54.9	1	0.286		15		

# L1601497-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1601497-01 04/07/23 07:45 • (DUP) R3911005-1 04/07/23 07:58								
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	mg/l	mg/l		%		%		
Bromide	1.03	0.999	1	2.79	J	15		
Chloride	48.4	48.6	1	0.371		15		
Sulfate	83.0	83.0	1	0.0636		15		

#### Laboratory Control Sample (LCS)

(LCS) R3910937-2 04/06/23 10:24						
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier	
Analyte	mg/l	mg/l	%	%		
Bromide	40.0	39.0	97.6	80.0-120		
Chloride	40.0	39.1	97.7	80.0-120		
Sulfate	40.0	38.5	96.2	80.0-120		

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Tetra Tech EMI - Ho	ouston, TX

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# QUALITY CONTROL SUMMARY

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# L1601388-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1601388-01 04/06/2	DS) L1601388-01 04/06/23 12:53 • (MS) R3910937-4 04/06/23 13:18 • (MSD) R3910937-5 04/06/23 13:31											
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	U	44.8	44.3	89.6	88.7	1	80.0-120			1.10	15
Chloride	50.0	32.8	81.9	82.0	98.3	98.4	1	80.0-120			0.0134	15
Sulfate	50.0	54.8	98.9	98.6	88.4	87.7	1	80.0-120			0.348	15

#### L1601497-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1601497-01 04/07/2	(OS) L1601497-01 04/07/23 07:45 • (MS) R3911005-2 04/07/23 08:10								
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier		
Analyte	mg/l	mg/l	mg/l	%		%			
Bromide	50.0	1.03	50.2	98.4	1	80.0-120			
Chloride	50.0	48.4	96.0	95.2	1	80.0-120			
Sulfate	50.0	83.0	128	90.9	1	80.0-120			

SDG: L1600787 DATE/TIME: 04/12/23 17:18 PAGE: 20 of 23

# Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

#### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.
Qualifier	Description

	·
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

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# Received by OCD: 2/22/2024 12:14:14 PACCREDITATIONS & LOCATIONS

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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
lorida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
ldaho	TN00003	Ohio-VAP	CL0069
llinois	200008	Oklahoma	9915
ndiana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky <sup>16</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>14</sup>	2006
ouisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
lichigan	9958	Virginia	110033
Vinnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

SDG: L1600787

DAT 04/12 PAGE: 22 of 23

Cn Sr Qc Gl Sc

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cceived by OCD: 2/22/2024 12: Company Name/Address:	14:14 F M		Billing Info	ormation:		-			Δ	nalysis / Co	ontainer / P	reservative		Chain of Cust	ody Page 1 of 1		
Tetra Tech EMI - Housto 1500 CityWest Boulevard Suite 1000 Houston, TX 77042	0 CityWest Boulevard		Accounts Payable 901 West Wall Suite 100 Midland, TX 79701											- (4	Pace Pace		
Report to:	-		Email To:	1		-	res		12-1	1			1	MT	JULIET, TN		
Dylon Breyman			dylon.brey	man@tetratech.co	@tetratech.com;matthew.cast		lop		1		10		1.1.1	Submitting a samp	Mount Juliet, TN 37122 le via this chain of custody		
Project Description: MNR - MCA 357 2023		City/State Collected:			Please Ci PT MT C		DPE-N		57					Pace Terms and Co	ledgment and acceptance of the nditions found at: bs.com/hubfs/pas-standard-		
hone: 832-251-5160	Client Project 212C-HN-0			Lab Project # TETRAHTX-M	CA357		250mIHDPE-NoPr	oPres						SDG #	60078 E098		
Collected by (print):	Site/Facility ID	) #		P.O. #						N-W	5	1		1 and	-		2000
Matthew Lastrojan						1	SID	DP	Pre		-		1	Acctnum: TI	ETRAHTX		
Collected by (signature):		ab MUST Be		Quote #			CHLORIDE	HIM	NoPres		3		1	Template:T			
mmediately Packed on Ice N Y	Same Da Next Da Two Day Three Da	/ 10 Da	Day / (Rad Only) ay (Rad Only)	Date Results	Needed No.		A CONTRACTOR	SULFATE 250mIHDPE-NoPres	11-HDPE					Prelogin: <b>PS</b> PM: <b>3564 - C</b> PB:	188299 Chad A Upchurch		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	BROMIDE,	SULFA	TDS 1L					Shipped Via: Remarks	Sample # (lab only)		
MW-8	G	GW		3-28-23	1545	3	X	X	X						-01		
MW-3	6	GW	1	3-29-23	0930	3	X	X	X						-02		
MW-9	6	GW		3-29-23	1050	3	X	X	X						-03		
MW-4	6	GW		3-29-23	1235	3	X	X	X			Contraction of the			-04		
MW-2	B	GW		3-29-23	1440	33	X	X	X						-05		
MW-7	6	GW	-	3-30-23	1020	3	X	X	X						- 0r.		
new-5	G	GW		3-30-23		3	X	X	X						-07		
Mew-1	6	GW	100	3-30-23		3	X	X	X		1				-08		
Dup	6	GW		-	-	3	×	X	X						-09		
		GW				15	1		-						10000		
G - Soil AIR - Air F - Filter W - Groundwater B - Bioassay W - WasteWater	marks:									pH	Tem		COC Sea COC Sign Bottles	ample Receipt l Present/Intac ned/Accurate: arrive intact: bottles used:	t: VNP Y N		
	mples returned UPS FedEx			Trackin	g #		1.25		Te -	- 7 -		1	1. 672531	ant volume sent <u>If Applica</u> Headspace:			
elinquished by : (Signature)	Da	5-31-		800 C	ed by: (Signati	2	/	/	T	rip Blank R		HCL / MeoH TBR	Preserva RAD Scro	ation Correct/C een <0.5 mR/hr:	Zr ⊒n		
telinquished by : (Signature)	Da	331/2	.) Time	700 J	NA				1	emp/35/	170	tles Received:		ation required by L			
telinquished by : (Signature)	Da	te: /	Time	and the second se	d for lab by:	Signat	ure) 17	1		)ate:	-23 Tim	10: \$30	Hold:		Condition: NCF / OK		

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e Analyti	ioui	ICAL REPORT	<sup>1</sup> Cp
			<sup>2</sup> Tc
	Tetra Tech EMI - Ho	ouston, TX	<sup>3</sup> Ss
	Sample Delivery Group:	L1620419	<sup>↑</sup> Cn
	Samples Received:	05/26/2023	<sup>5</sup> Sr
	Project Number:	212C-HN-02228	
	Description:	MNR - MCA 357 GW	<sup>6</sup> Qc
	Report To:	Dylon Breyman	<sup>7</sup> Gl
		1500 CityWest Boulevard	<sup>8</sup> Al
		Suite 1000	9
		Houston, TX 77042	<sup>ື</sup> Sc

Entire Report Reviewed By:

that tphat

Chad A Upchurch Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

# Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

Released to Imaging: 4/23/2024 9:03:08 AM Tetra Tech EMI - Houston, TX PROJECT: 212C-HN-02228

SDG: L1620419 DATE/TIME: 06/16/23 15:40

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# SAMPLE SUMMARY

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Ср

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MW-1 L1620419-01 GW			Collected by G.S/H.M.I	Collected date/time 05/24/23 13:55	Received da 05/26/23 09	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	10	06/12/23 02:37	06/12/23 02:37	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	500	06/12/23 02:50	06/12/23 02:50	GEB	Mt. Juliet, TN
MW-2 L1620419-02 GW			Collected by G.S/H.M.I	Collected date/time 05/24/23 16:20	Received da 05/26/23 09	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	10	06/12/23 03:03	06/12/23 03:03	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	100	06/12/23 03:17	06/12/23 03:17	GEB	Mt. Juliet, TN
			Collected by G.S/H.M.I	Collected date/time 05/24/23 14:05	Received da 05/26/23 09	
MW-3 L1620419-03 GW	<b>D</b>	<b>D</b> <sup>11</sup> ···				
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	10	06/12/23 03:30	06/12/23 03:30	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	100	06/12/23 03:44	06/12/23 03:44	GEB	Mt. Juliet, TN
			Collected by G.S/H.M.I	Collected date/time 05/24/23 17:15	Received da 05/26/23 09	
MW-4 L1620419-04 GW				05/24/25 17.15	05/20/25 05	7.00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	10	06/12/23 04:24	06/12/23 04:24	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2075572	100	06/12/23 04:37	06/12/23 04:37	GEB	Mt. Juliet, TN
			Collected by	Collected date/time		
MW-5 L1620419-05 GW			G.S/H.M.I	05/24/23 15:40	05/26/23 09	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	20	06/13/23 18:14	06/13/23 18:14	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	5	06/13/23 18:01	06/13/23 18:01	GEB	Mt. Juliet, TN
MW-7 L1620419-06 GW			Collected by G.S/H.M.I	Collected date/time 05/24/23 14:25	Received da 05/26/23 09	
	Patch	Dilution	Proparation	Applycic	Applyct	Location
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	10	06/13/23 18:27	06/13/23 18:27	GEB	Mt. Juliet, TN
MW-8 L1620419-07 GW			Collected by G.S/H.M.I	Collected date/time 05/24/23 13:25	Received da 05/26/23 09	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	10	06/13/23 18:41	06/13/23 18:41	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	100	06/13/23 18:54	06/13/23 18:54	GEB	Mt. Juliet, TN
Released to Imaging: 4/25/2024 9:03:08 AM	PROJECT:		SDG:	DAT	E/TIME:	
	212C-HN-02228		L1620419		/23 15:40	

SE: 3 of 27 Received by OCD: 2/22/2024 12:14:14 PM

# SAMPLE SUMMARY

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MM 0 14620440 00 004			Collected by G.S/H.M.I	Collected date/time 05/24/23 14:50	Received dat 05/26/23 09	
MW-9 L1620419-08 GW						
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	10	06/13/23 19:08	06/13/23 19:08	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	100	06/13/23 19:48	06/13/23 19:48	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	te/time
MW-10 L1620419-09 GW			G.S/H.M.I	05/24/23 18:10	05/26/23 09	:00
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	10	06/13/23 20:01	06/13/23 20:01	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	te/time
MW-13 L1620419-10 GW			G.S/H.M.I	05/24/23 15:10	05/26/23 09	:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2071808	1	06/05/23 12:50	06/05/23 14:29	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	10	06/13/23 20:28	06/13/23 20:28	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received dat	te/time
DUP-01 L1620419-11 GW			G.S/H.M.I	05/24/23 15:30	05/26/23 09	:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2068920	1	05/31/23 08:34	05/31/23 09:57	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2076785	50	06/13/23 20:55	06/13/23 20:55	GEB	Mt. Juliet, TN
Wet chemistry by Method 5050A						

**PROJECT**: 212C-HN-02228

SDG: L1620419 DATE/TIME: 06/16/23 15:40

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# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

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Chad A Upchurch Project Manager



SDG: L1620419 DATE/TIME: 06/16/23 15:40

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#### SAMPLE RESULTS - 01 L1620419

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#### Gravimetric Analysis by Method 2540 C-2011

	<i>,</i>					 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	59300	1000	1	05/31/2023 09:57	WG2068920	⁻Tc

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time				
Bromide	69.9		3.53	10.0	10	06/12/2023 02:37	WG2075572			
Chloride	29700		190	500	500	06/12/2023 02:50	WG2075572			
Sulfate	453		5.94	50.0	10	06/12/2023 02:37	WG2075572			

SAMPLE RESULTS - 02 L1620419

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	11400	200	1	05/31/2023 09:57	WG2068920	Тс

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	9.31	J	3.53	10.0	10	06/12/2023 03:03	WG2075572			
Chloride	5340		37.9	100	100	06/12/2023 03:17	WG2075572		5	
Sulfate	290		5.94	50.0	10	06/12/2023 03:03	WG2075572		Sr	

SAMPLE RESULTS - 03 L1620419

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### Gravimetric Analysis by Method 2540 C-2011

	1	, ,						l'Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		8480		200	1	05/31/2023 09:57	WG2068920	Tc

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	10.2		3.53	10.0	10	06/12/2023 03:30	WG2075572		CII	
Chloride	3590		37.9	100	100	06/12/2023 03:44	WG2075572		5	
Sulfate	158		5.94	50.0	10	06/12/2023 03:30	WG2075572		Sr	

SAMPLE RESULTS - 04 L1620419

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## Gravimetric Analysis by Method 2540 C-2011

								1'C	5
		Result	Qualifier	RDL	Dilution	Analysis	Batch		Ρ
A	nalyte	mg/l		mg/l		date / time		2	_
D	ssolved Solids	16100		200	1	05/31/2023 09:57	<u>WG2068920</u>	ĒΤα	С

Wet Chemist	Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch						
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn				
Bromide	10.9		3.53	10.0	10	06/12/2023 04:24	WG2075572		CII				
Chloride	6350		37.9	100	100	06/12/2023 04:37	WG2075572		5				
Sulfate	172		5.94	50.0	10	06/12/2023 04:24	WG2075572		Sr				

SAMPLE RESULTS - 05 L1620419

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#### Gravimetric Analysis by Method 2540 C-2011

	2	, ,						l'Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		3660		50.0	1	05/31/2023 09:57	WG2068920	Tc

Wet Chemist	Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch						
Analyte	mg/l		mg/l	mg/l		date / time		4	Cn				
Bromide	4.37	J	1.76	5.00	5	06/13/2023 18:01	WG2076785		СП				
Chloride	1300		7.58	20.0	20	06/13/2023 18:14	WG2076785	5					
Sulfate	113		2.97	25.0	5	06/13/2023 18:01	WG2076785		Sr				

SAMPLE RESULTS - 06 L1620419

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### Gravimetric Analysis by Method 2540 C-2011

	,	,						Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		2130		50.0	1	05/31/2023 09:57	WG2068920	Tc

Wet Chemist	Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch						
Analyte	mg/l		mg/l	mg/l		date / time		4	<sup>4</sup> Cn				
Bromide	6.69	J	3.53	10.0	10	06/13/2023 18:27	WG2076785		CII				
Chloride	976		3.79	10.0	10	06/13/2023 18:27	WG2076785		5				
Sulfate	181		5.94	50.0	10	06/13/2023 18:27	WG2076785		Sr				

SAMPLE RESULTS - 07 L1620419

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#### Gravimetric Analysis by Method 2540 C-2011

	, ,					l'Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	4040	100	1	05/31/2023 09:57	WG2068920	⁻Tc

Wet Chemist	Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch						
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn				
Bromide	7.51	J	3.53	10.0	10	06/13/2023 18:41	WG2076785		CII				
Chloride	2030		37.9	100	100	06/13/2023 18:54	WG2076785		5				
Sulfate	88.3		5.94	50.0	10	06/13/2023 18:41	WG2076785		Sr				

SAMPLE RESULTS - 08 L1620419

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## Gravimetric Analysis by Method 2540 C-2011

	· · ·					1 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	12100	200	1	05/31/2023 09:57	WG2068920	ЪТс

Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch					
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn			
Bromide	10.3		3.53	10.0	10	06/13/2023 19:08	WG2076785		CII			
Chloride	6050		37.9	100	100	06/13/2023 19:48	WG2076785		5			
Sulfate	463		5.94	50.0	10	06/13/2023 19:08	WG2076785		Sr			

SAMPLE RESULTS - 09 L1620419

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### Gravimetric Analysis by Method 2540 C-2011

	· ·	,						1 Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		2310		50.0	1	05/31/2023 09:57	WG2068920	Тс

Wet Chemist	Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch						
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn				
Bromide	7.23	J	3.53	10.0	10	06/13/2023 20:01	WG2076785		CII				
Chloride	1900		3.79	10.0	10	06/13/2023 20:01	WG2076785		5				
Sulfate	45.1	Ţ	5.94	50.0	10	06/13/2023 20:01	WG2076785		Sr				
### SAMPLE RESULTS - 10 L1620419

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## Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l		mg/l		date / time	—	2
Dissolved Solids	3730	Q	50.0	1	06/05/2023 14:29	WG2071808	Tc

### Wet Chemistry by Method 9056A

Wet Chemist	try by Method 9	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	9.30	J	3.53	10.0	10	06/13/2023 20:28	WG2076785	
Chloride	1380		3.79	10.0	10	06/13/2023 20:28	WG2076785	5
Sulfate	210		5.94	50.0	10	06/13/2023 20:28	WG2076785	Sr

DATE/TIME: 06/16/23 15:40

### SAMPLE RESULTS - 11 L1620419

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## Gravimetric Analysis by Method 2540 C-2011

,	,					Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	57500	1000	1	05/31/2023 09:57	WG2068920	ЪТс

### Wet Chemistry by Method 9056A

Wet Chemist	try by Method §	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	83.9		17.6	50.0	50	06/13/2023 20:55	WG2076785	CII
Chloride	31100		190	500	500	06/13/2023 21:08	WG2076785	5
Sulfate	425		29.7	250	50	06/13/2023 20:55	WG2076785	Sr

## Reg cy gl & 600 202/2024 12:14:14 PM

Gravimetric Analysis by Method 2540 C-2011

### QUALITY CONTROL SUMMARY L1620419-01,02,03,04,05,06,07,08,09,11

Method Blank (MB)

Method Blank (	ĺΜΒ)				1
(MB) R3931855-1 05	/31/23 09:57				Cp
	MB Result	MB Qualifier	MB MDL	MB RDL	2
Analyte	mg/l		mg/l	mg/l	Тс
Dissolved Solids	U		10.0	10.0	
					<sup>3</sup> Ss

## L1620076-01 Original Sample (OS) • Duplicate (DUP)

L1620076-01 Orig	inal Sample	e (OS) • Du	plicate	(DUP)			
(OS) L1620076-01 05/31	/23 09:57 • (DUI	P) R3931855-3	05/31/23	09:57			
	Original Result	t DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	360	369	1	2.47		5	

## L1620161-01 Original Sample (OS) • Duplicate (DUP)

L1620161-01 Orig	ginal Sample (	OS) • Dup	olicate (E	OUP)			<sup>7</sup> Gl
(OS) L1620161-01 05/3	31/23 09:57 • (DUP)	R3931855-4	05/31/23	09:57			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	<sup>8</sup> Al
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	172	184	1	6.74	<u>J3</u>	5	°Sc

## Laboratory Control Sample (LCS)

(LCS) R3931855-2 05/3	31/23 09:57				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	7780	88.4	77.3-123	

## Reg @ 21607980 8/22/2024 12:14:14 PM

Gravimetric Analysis by Method 2540 C-2011

## QUALITY CONTROL SUMMARY L1620419-10

### Method Blank (MB)

(MB) R3934370-1 06	6/05/23 14:29			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

## L1620293-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1620293-03 OFIC	· ·	× /		× /		
	Original Result				DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	7540	7840	1	3.90		5

## L1620293-04 Original Sample (OS) • Duplicate (DUP)

L1620293-04 Ori	ginal Sample	e (OS) • Du	uplicate	(DUP)			<sup>7</sup> Gl
(OS) L1620293-04 06/0	05/23 14:29 • (DL	IP) R3934370-	4 06/05/2	23 14:29			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	<sup>8</sup> Al
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	6170	5960	1	3.46		5	<sup>9</sup> Sc

## Laboratory Control Sample (LCS)

(LCS) R3934370-2 06	6/05/23 14:29				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8550	97.2	77.3-123	

DATE/TIME: 06/16/23 15:40

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Ss

Wet Chemistry by Method 9056A

## QUALITY CONTROL SUMMARY L1620419-01,02,03,04

## Method Blank (MB)

(MB) R3935997-1	06/11/23 22:33	

	MB Result	MB Qualifier	MB MDL	MB RDL	
alyte	mg/l		mg/l	mg/l	
omide	U		0.353	1.00	
oride	U		0.379	1.00	
ulfate	U		0.594	5.00	

## L1620519-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1620519-03 06/12/2	3 05:18 • (DUP)	R3935997-4	06/12/23	05:31		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	0.766	0.769	1	0.482	J	15
Chloride	12.8	13.0	1	1.38		15
Sulfate	0.642	0.647	1	0.775	J	15

## L1620519-17 Original Sample (OS) • Duplicate (DUP)

(OS) L1620519-17 06/12/2	3 09:47 • (DUP)	R3935997-7	06/12/23	10:00		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	0.873	0.872	1	0.115	J	15
Chloride	92.3	92.0	1	0.295		15
Sulfate	55.3	55.1	1	0.292		15

## Laboratory Control Sample (LCS)

(LCS) R3935997-3 06/12	2/23 00:50				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Bromide	40.0	37.9	94.9	80.0-120	
Chloride	40.0	38.1	95.4	80.0-120	
Sulfate	40.0	37.5	93.8	80.0-120	

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# QUALITY CONTROL SUMMARY

Wet Chemistry by Method 9056A

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## L1620519-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620519-03 06/12/2	3 05:18 • (MS) I	R3935997-5 0	6/12/23 05:45	• (MSD) R3935	997-6 06/12/2	3 05:58						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	0.766	48.0	48.4	94.5	95.3	1	80.0-120			0.869	15
Chloride	50.0	12.8	62.3	62.9	98.9	100	1	80.0-120			0.996	15
Sulfate	50.0	0.642	47.2	47.9	93.2	94.5	1	80.0-120			1.34	15

## L1620519-17 Original Sample (OS) • Matrix Spike (MS)

(OS) L1620519-17 06/12/2	3 09:47 • (MS) F	R3935997-8 0	6/12/23 10:14				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	50.0	0.873	46.5	91.2	1	80.0-120	
Chloride	50.0	92.3	138	91.1	1	80.0-120	
Sulfate	50.0	55.3	101	91.4	1	80.0-120	

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Wet Chemistry by Method 9056A

# QUALITY CONTROL SUMMARY

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## Method Blank (MB)

(MB) R3936689-1	06/13/23	14:33		
		MB Result	MB Qualifier	MB MDL

Analyte	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Chloride	0.416	J	0.379	1.00
Sulfate	U		0.594	5.00

## L1620489-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1620489-01 06/1	3/23 23:23 • (DUF	P) R3936689-3	3 06/13/23	3 23:36			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		%	
Bromide	0.544	0.542	1	0.387	J	15	
Chloride	2.80	2.74	1	1.92		15	
Sulfate	2.90	2.85	1	1.74	J	15	

MB RDL

## L1620489-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1620489-09 06/14/	23 02:17 • (DUP	) R3936689-6	6 06/14/23	02:31		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	0.654	0.634	1	2.98	J	15
Chloride	5.93	5.79	1	2.49		15
Sulfate	U	U	1	0.000		15

## Laboratory Control Sample (LCS)

(LCS) R3936689-2 06/	13/23 14:46				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Bromide	40.0	38.5	96.3	80.0-120	
Chloride	40.0	38.6	96.6	80.0-120	
Sulfate	40.0	38.0	95.0	80.0-120	

<b>Released</b> to	Imaging <sup>AC4</sup> /23>2024	9:03:08 AM
	Tetra Tech EMI - Houston,	TX

DATE/TIME: 06/16/23 15:40

Wet Chemistry by Method 9056A

## QUALITY CONTROL SUMMARY L1620419-05,06,07,08,09,10,11

## L1620489-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1620489-01 06/13/2	(OS) L1620489-01 06/13/23 23:23 • (MS) R3936689-4 06/13/23 23:50 • (MSD) R3936689-5 06/14/23 00:03											
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	50.0	0.544	48.3	47.9	95.6	94.7	1	80.0-120			0.893	15
Chloride	50.0	2.80	51.7	51.3	97.8	97.0	1	80.0-120			0.770	15
Sulfate	50.0	2.90	50.3	50.1	94.8	94.3	1	80.0-120			0.455	15

## L1620489-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1620489-09 06/14/	/23 02:17 • (MS)	R3936689-7 (	06/14/23 02:	44			
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	50.0	0.654	47.8	94.4	1	80.0-120	
Chloride	50.0	5.93	55.6	99.4	1	80.0-120	
Sulfate	50.0	U	47.4	94.8	1	80.0-120	

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## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

#### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the resu reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

SDG: L1620419 DATE/TIME: 06/16/23 15:40

## Received by OCD: 2/22/2024 12:14:14 PACCREDITATIONS & LOCATIONS

Page	82	of	181
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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
daho	TN00003	Ohio-VAP	CL0069
llinois	200008	Oklahoma	9915
ndiana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky <sup>16</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
ouisiana	AI30792	Tennessee <sup>14</sup>	2006
ouisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

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<sup>2</sup>Tc <sup>3</sup>Ss <sup>4</sup>Cn <sup>5</sup>Sr <sup>6</sup>Qc <sup>7</sup>Gl <sup>8</sup>Al <sup>9</sup>Sc

Company Name/Address:	1.10		Billing Info	rmation:			1.00			A	nalvsis	Contain	er / Preservative	1	Chain of Custod	Page _ of
Tetra Tech EMI - Housto 1500 CityWest Boulevard Suite 1000 Houston, TX 77042	on, TX	n, TX Accounts Payable 901 West Wall Suite 100 Midland, TX 79701			Pres Chk								- People	ACCE"		
Report to: Dylon Breyman				reyman@tetratech.com;matthew.castre				oPres						196	12065 Lebanon Rd Mo Submitting a sample vi	a this chain of custody
Project Description: MNR - MCA 357 GW		City/State Collected: M			Please Circle:					= 2					Pace Terms and Condit	gment and acceptance of the lions found at: om/hubfs/pas-standard-
Phone: 832-251-5160	Client Project 212C-HN-0	#		Lab Projec	Lab Project # TETRAHTX-MCA357			250mlHDPE-NoPr	oPres						SDG # LIG	B038
Collected by (print): Greg Scherbensice HMI	Site/Facility ID	) #	P.O. #		P.O. #				DPE-NG	res					Table	20
Collected by (signature):	Same Da	Lab MUST Be I ay Five D y 5 Day y 10 Dar ay	ay (Rad Only)	y) Date Results Needed			No. of	IIDE, CHLORIDE	SULFATE 250miHDPE-NoPres	11-HDPE NoPres					Template: <b>T21</b> Prelogin: <b>P99</b> PM: <b>3564 - Ch</b> : PB:	9559
Sample ID	Comp/Grab	Matrix *	Depth	Date	e	Time	Cntrs	BROMIDE,	ULFA	TDS 1		ŕ.	1.4		Shipped Via: Remarks	Sample # (lab only)
MW-1	linto	GW		5/24	123	1355	2	×	X	×						-01
MW-Z	1	GW		1		1620	1	1	1	1			5-1	al a	1	-02
MW -3		GW				1405										-03
MW-4		GW				1715	T							Contraction of the	1	-04
MW-5		GW				1540	11			-			2 - 2	The state		-05
-MW-6		GW			-						-	NOT	strupted	OKes		
MW-7		GW				1425	11			T				1231	1	-00
MW-8		GW				1325	11						1933	15		-07
MW-9		GW				1450							1			-08
MW-10		GW		1		1810	1		11	1		13				-09
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water Sau	marks: mples returned UPS V FedEx			21	Tracking	#			24		pH Flow		_ Temp	COC Seal E COC Signed Bottles an Correct bo Sufficient	ple Receipt Ch resent/Intact NAccurate: rive intact: ttles used: volume sent: <u>If Applicab</u> leadspace:	iecklist NP N N N N N N N N N N N N N
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Relinquished by : (Signature)	Da	ate:	Time	e: Received by: (Signature)		ure)				Temp:	°(	Bottles Received:	If preservation required by Login: Date/Time			
Relinquished by : (Signature)		ate:	Time		Received	l for lab by:	(Signati		E.	-	Date:	+07	Time:	Hold:		Condition NCF / K

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at 500	10			

Released to Imaging: 4/23/2024 9:03:08 AM

Received by OCD: 2/22/2024 12:14:14 PM

Company Name/Address:			Billing Infor	mation:			<u> </u>			Δ	nalvsis /	Contair	ner / Pri	eservati	VP		Chain of C	ustody	Page Lof
1500 CityWest Boulevard 901 We Suite 100		Accounts 901 Wes Suite 100	s Payabl t Wall D													- F	Pac PEOPLE ADV	CC°	
Report to: Dylon Breyman			Email To: dylon.breyman@tetratech.com;matthew.castre					oPres									12065 Leband		uliet, TN 37122
Project Description: MNR - MCA 357 GW		City/State	· ~· · ·	JAMAR, NM Please Circle: PT MT CT ET				PE-NG									constitutes ac Pace Terms an	knowledgmen nd Conditions	chain of custody at and acceptance of the found at: hubfs/pas-standard-
Phone: 832-251-5160	Client Project 212C-HN-	ct #			Lab Project # TETRAHTX-MCA357			250mlHDPE-NoPr	res								SDG #	L16	20419
Collected by (print): Greg Shevbensie - 1	Site/Facility	/Facility ID #		P.O. #					250miHDPE-NoPres	ss							Table #		
Collected by (signature):		(Lab MUST Be N	Notified)	Quote	#			CHLORIDE	IHD	NoPres						-	Template		
Immediately Packed on Ice N Y	Next I	Day Five D Day 5 Day Day 10 Day Day	(Rad Only)	Dat	e Results	Needed	No. of		TE 250n	11-HDPE							Prelogin: PM: 3564 PB:		59 A Upchurch
Sample ID	Comp/Grat	Matrix *	Depth	Da	ate	Time	Cntrs	ROMIDE,	SULFATE	TDS 11							Shipped Rema		Sample # (lab only)
25 MW-11	Guns	GW		5/2	4/23		2	∞ ×	X	×	-	NOT	SA.	mple	d'	DRy		1	
N. MW-12		GW		1			I			-	-	NOT	SA	mple	d,	Dry			
MW-13		GW				1510	11							Y.S.		1000			-10
Pup-01	V	GW			1	1530			L	V		+		4					-11
		GW								1-1			(13)						and the state
		GW																	
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		GW						100											
		GW						1									1		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water	Remarks:										pH Flow		Temp Othe		_	COC Seal COC Sign Bottles Correct	arrive inta bottles use	tact: _ : ct: d:	NP Y N Y N Y N N
DW - Drinking Water OT - Other	Samples returne	d via: ix Courier			Trackin	g #											nt volume s <u>If Appl</u> Headspace:	icable	Let _N
Relinquished by (Signature)	1	Date: 5/25/23	Time:	30	Receive	d by: (Signat	ure)				Trip Blan	k Receiv		HCL/Me		Preserva	tion Correc en <0.5 mR/	t/Check	ed: $\underbrace{\overset{Y}{\underset{X}}}_{\overset{Y}{\underset{N}}}$
Relinquished by : (Signature)		Date:	Time	:	Receive	d by: (Signat	ure)				Temp:	°(		les Receiv		If preserva	tion required l	by Login:	Date/Time
Relinquished by : (Signature) ed to Imaging: 4/23/2024 9:		Date:	Time	:	Receive	d for lab by:	(Signat	ure)	15		Date:	623	Tim	p.	-	Hold:	Ser -		Condition: NCF / 00



Received by OCD: 2/22/2024 12:14:14 PM

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Analytical <sup>®</sup> ANALYT	ICAL REPORT	1
Tetra Tech EMI - H	ouston, TX	
Sample Delivery Group:	L1656006	
Samples Received:	09/14/2023	E
Project Number:	212C-HN-02228	
Description:	MNR - MCA 357 GW	
Report To:	Dylon Breyman	
	1500 CityWest Boulevard	3
	Suite 1000	
	Houston, TX 77042	

Entire Report Reviewed By:

that tphat

Chad A Upchurch Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

## Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

Released to Imaging: 4/23/2024 9:03:08 AM Tetra Tech EMI - Houston, TX PROJECT: 212C-HN-02228

SDG: L1656006 DATE/TIME: 10/02/23 17:04

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## SAMPLE SUMMARY

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MW-1 L1656006-01 GW			Collected by MI Team	Collected date/time 09/13/23 10:20	Received da 09/14/23 08:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2139037	1	09/25/23 16:15	09/26/23 09:36	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	50	09/20/23 11:59	09/20/23 11:59	GEB	Mt. Juliet, TI
Net Chemistry by Method 9056A	WG2134880	500	09/20/23 12:37	09/20/23 12:37	GEB	Mt. Juliet, TI
			Collected by	Collected date/time	Received da	te/time
MW-2 L1656006-02 GW			MI Team	09/13/23 09:40	09/14/23 08:	45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	10	09/20/23 12:50	09/20/23 12:50	GEB	Mt. Juliet, TN
Net Chemistry by Method 9056A	WG2134880	100	09/20/23 13:03	09/20/23 13:03	GEB	Mt. Juliet, TN
MW-3 L1656006-03 GW			Collected by MI Team	Collected date/time 09/13/23 09:40	Received da 09/14/23 08:	
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
0 · · · · A · · · · · · · · · · · · · ·	14/2010 10/20		date/time	date/time	14.0	
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2134880 WG2134880	10 100	09/20/23 13:16 09/20/23 13:29	09/20/23 13:16	GEB GEB	Mt. Juliet, Th
Net Chemistry by Method 9056A	WG2134660	100	09/20/23 13.29	09/20/23 13:29	GED	Mt. Juliet, Ti
MW-4 L1656006-04 GW			Collected by MI Team	Collected date/time 09/13/23 12:05	Received da 09/14/23 08:	
	Datab	Dilution	Droporation	Apolycic	Applyct	Location
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	10	09/20/23 13:41	09/20/23 13:41	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	100	09/20/23 13:54	09/20/23 13:54	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-5 L1656006-05 GW			MI Team	09/13/23 11:05	09/14/23 08:	45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, Tl
Wet Chemistry by Method 9056A	WG2134880	20	09/20/23 14:20	09/20/23 14:20	GEB	Mt. Juliet, Ti
Wet Chemistry by Method 9056A	WG2134880	5	09/20/23 14:07	09/20/23 14:07	GEB	Mt. Juliet, Th
			Collected by	Collected date/time	Received da	
MW-7 L1656006-06 GW			MI Team	09/13/23 09:00	09/14/23 08:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, T
Wet Chemistry by Method 9056A	WG2134880	20	09/20/23 15:11	09/20/23 15:11	GEB	Mt. Juliet, TI
Wet Chemistry by Method 9056A	WG2134880	5	09/20/23 14:33	09/20/23 14:33	GEB	Mt. Juliet, TN

**PROJECT**: 212C-HN-02228

SDG: L1656006 DATE/TIME: 10/02/23 17:04

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## SAMPLE SUMMARY

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MW-8 L1656006-07 GW			Collected by MI Team	Collected date/time 09/13/23 08:25	Received da 09/14/23 08:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	10	09/20/23 15:24	09/20/23 15:24	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	100	09/20/23 15:37	09/20/23 15:37	GEB	Mt. Juliet, TN
MW-9 L1656006-08 GW			Collected by MI Team	Collected date/time 09/13/23 10:20	Received da 09/14/23 08:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	10	09/20/23 15:51	09/20/23 15:51	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	100	09/20/23 16:05	09/20/23 16:05	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-10 L1656006-09 GW			MI Team	09/13/23 09:00	09/14/23 08:	45
Method	Batch	Dilution	Preparation	Analysis	Analyst	Location
			date/time	date/time		
Gravimetric Analysis by Method 2540 C-2011	WG2134672	1	09/18/23 23:56	09/19/23 19:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	10	09/20/23 16:18	09/20/23 16:18	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	100	09/20/23 16:31	09/20/23 16:31	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received date/time	
MW-13 L1656006-10 GW			MI Team	09/13/23 11:05	09/14/23 08:	45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134675	1	09/19/23 00:12	09/19/23 15:40	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	20	09/20/23 16:57	09/20/23 16:57	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	5	09/20/23 16:44	09/20/23 16:44	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
DUP-01 L1656006-11 GW			MI Team	09/13/23 10:00	09/14/23 08:	45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2134675	1	09/19/23 00:12	09/19/23 15:40	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	20	09/20/23 17:48	09/20/23 17:48	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2134880	5	09/20/23 17:10	09/20/23 17:10	GEB	Mt. Juliet, TN

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## CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

that tphat

Chad A Upchurch Project Manager



SDG: L1656006 DATE/TIME: 10/02/23 17:04

1ME: 17:04 PAGE: 5 of 25

# SAMPLE RESULTS - 01

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## Gravimetric Analysis by Method 2540 C-2011

							Cn
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	64100	Q	1000	1	09/26/2023 09:36	WG2139037	⁻Tc

### Wet Chemistry by Method 9056A

	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
Bromide	108		17.6	50.0	50	09/20/2023 11:59	WG2134880	
Chloride	38900		190	500	500	09/20/2023 12:37	WG2134880	
Sulfate	560		29.7	250	50	09/20/2023 11:59	WG2134880	

SAMPLE RESULTS - 02 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	<i>· · · · · · · · · ·</i>					1 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	13300	200	1	09/19/2023 19:39	WG2134672	ЪТс

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn
Bromide	9.33	J	3.53	10.0	10	09/20/2023 12:50	WG2134880		CII
Chloride	5500		37.9	100	100	09/20/2023 13:03	WG2134880		5
Sulfate	309		5.94	50.0	10	09/20/2023 12:50	WG2134880		Sr

#### Sample Narrative:

L1656006-02 WG2134880: Dilution due to matrix.

Released to Imaging: 4/25/2024 9:03:08 AM Tetra Tech EMI - Houston, TX

SDG: L1656006

SAMPLE RESULTS - 03 L1656006

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## Collected date/time: 09/13/23 09:40 Gravimetric Analysis by Method 2540 C-2011

Gravinietiic Analysis by Method 2540 C-2011									
	Result	Qualifier	RDL	Dilution	Analysis	Batch		Cp	
Analyte	mg/l		mg/l		date / time			2	
Dissolved Solids	9220		200	1	09/19/2023 19:39	WG2134672		⁻Tc	

## Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			$^{4}$ Cn
Bromide	10.2		3.53	10.0	10	09/20/2023 13:16	WG2134880		
Chloride	3750		37.9	100	100	09/20/2023 13:29	WG2134880		5
Sulfate	171		5.94	50.0	10	09/20/2023 13:16	WG2134880		Sr

SAMPLE RESULTS - 04 L1656006

	Result	Qualifier RDL	Dilution	Analysis	Batch	 Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	14400	200	1	09/19/2023 19:39	WG2134672	Tc

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn
Bromide	11.2		3.53	10.0	10	09/20/2023 13:41	WG2134880		CII
Chloride	6640		37.9	100	100	09/20/2023 13:54	WG2134880		5
Sulfate	186		5.94	50.0	10	09/20/2023 13:41	WG2134880		Sr

SDG: L1656006 DATE/TIME:

SAMPLE RESULTS - 05 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier RDL	Dilution	Analysis	Batch	 Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	4500	50.0	1	09/19/2023 19:39	WG2134672	Tc

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	4.41	J	1.76	5.00	5	09/20/2023 14:07	WG2134880		CII	
Chloride	1420		7.58	20.0	20	09/20/2023 14:20	WG2134880		5	
Sulfate	118		2.97	25.0	5	09/20/2023 14:07	WG2134880		Sr	

#### Sample Narrative:

L1656006-05 WG2134880: Dilution due to matrix.

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PROJECT: 212C-HN-02228

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DATE/TIME: 10/02/23 17:04

### SAMPLE RESULTS - 06 L1656006

Collected date/time: 09/13/23 09:00

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Gravimetric Analysis by Method 2540 C-2011

UI										
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср		
Anal	yte	mg/l		mg/l		date / time		2		
Diss	olved Solids	2240		50.0	1	09/19/2023 19:39	WG2134672	⁻Tc		

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time				
Bromide	4.03	J	1.76	5.00	5	09/20/2023 14:33	WG2134880			
Chloride	1010		7.58	20.0	20	09/20/2023 15:11	WG2134880			
Sulfate	198		2.97	25.0	5	09/20/2023 14:33	WG2134880			

### Sample Narrative:

L1656006-06 WG2134880: Dilution due to matrix.

Collected date/time: 09/13/23 08:25

SAMPLE RESULTS - 07 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	, ,					Cn.
	Result	Qualifier RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	6330	100	1	09/19/2023 19:39	WG2134672	⁻Tc

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			$^{4}$ Cn	
Bromide	7.52	J	3.53	10.0	10	09/20/2023 15:24	WG2134880		CII	
Chloride	2100		37.9	100	100	09/20/2023 15:37	WG2134880		5	
Sulfate	95.4		5.94	50.0	10	09/20/2023 15:24	WG2134880		Sr	

#### Sample Narrative:

L1656006-07 WG2134880: Dilution due to matrix.

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SDG: L1656006

SAMPLE RESULTS - 08 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	· ·	,						1'Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		17300		200	1	09/19/2023 19:39	WG2134672	⁻Tc

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	10.3		3.53	10.0	10	09/20/2023 15:51	WG2134880		CII	
Chloride	5950		37.9	100	100	09/20/2023 16:05	WG2134880		5	
Sulfate	482		5.94	50.0	10	09/20/2023 15:51	WG2134880		Sr	

SAMPLE RESULTS - 09 L1656006

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Collected date/time: 09/13/23 09:00

#### Gravimetric Analysis by Method 2540 C-2011 Result Qualifier RDL Dilution Analysis Batch Analyte mg/l mg/l date / time **Dissolved Solids** 4590 100 1 09/19/2023 19:39 WG2134672

## Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	7.22	J	3.53	10.0	10	09/20/2023 16:18	WG2134880			
Chloride	1910		37.9	100	100	09/20/2023 16:31	WG2134880		5	
Sulfate	52.1	B	5.94	50.0	10	09/20/2023 16:18	WG2134880		Sr	

#### Sample Narrative:

L1656006-09 WG2134880: Dilution due to matrix.

### SAMPLE RESULTS - 10 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch		Cp		
Analyte	mg/l		mg/l		date / time			2		
Dissolved Solids	3190		50.0	1	09/19/2023 15:40	WG2134675		ЪТс		

### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A										
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch			
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn	
Bromide	6.72		1.76	5.00	5	09/20/2023 16:44	WG2134880		CII	
Chloride	1460		7.58	20.0	20	09/20/2023 16:57	WG2134880		5	
Sulfate	220		2.97	25.0	5	09/20/2023 16:44	WG2134880		Sr	

### SAMPLE RESULTS - 11 L1656006

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## Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch		Cp		
Analyte	mg/l		mg/l		date / time			2		
Dissolved Solids	3050		50.0	1	09/19/2023 15:40	WG2134675		Tc		

## Wet Chemistry by Method 9056A

Wet Chemist	ry by Method 9	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
Bromide	6.68		1.76	5.00	5	09/20/2023 17:10	WG2134880	
Chloride	1470		7.58	20.0	20	09/20/2023 17:48	WG2134880	5
Sulfate	217		2.97	25.0	5	09/20/2023 17:10	WG2134880	Sr

## Reg @ 24b3 26D: 2/22/2024 12:14:14 PM

Gravimetric Analysis by Method 2540 C-2011

### QUALITY CONTROL SUMMARY L1656006-02,03,04,05,06,07,08,09

### Method Blank (MB)

(MB) R3977257-1 09	9/19/23 19:39			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

## L1655970-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1655970-08 09/19						
	Original Result		Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte Dissolved Solids	mg/l 3290	mg/l 3340	1	% 1.51		% 5

## L1655972-04 Original Sample (OS) • Duplicate (DUP)

L1655972-04 OI	riginal Sample	e (OS) • Du	plicate	(DUP)			<sup>7</sup> Gl
(OS) L1655972-04 09	)/19/23 19:39 • (DUF	P) R3977257-4	1 09/19/23	19:39			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	<sup>8</sup> Al
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	677	719	1	5.92	<u>13</u>	5	°Sc

## Laboratory Control Sample (LCS)

(LCS) R3977257-2 09/	19/23 19:39				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8520	96.8	77.3-123	

DATE/TIME: 10/02/23 17:04 Тс

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Gravimetric Analysis by Method 2540 C-2011

## QUALITY CONTROL SUMMARY L1656006-10,11

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Ss

## Method Blank (MB)

(MB) R3975959-1 09	9/19/23 15:40			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

## L1656258-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1656258-02 09/19		× /	1	<u> </u>			 	
<b>、</b> ,	Original Result			DUP RPD	DUP Qualifier	DUP RPD Limits		
Analyte	mg/l	mg/l		%		%		
Dissolved Solids	535	541	1	1.12		5		

## L1656258-03 Original Sample (OS) • Duplicate (DUP)

L1656258-03 Or	iginal Sample	e (OS) • Du	plicate	(DUP)		
(OS) L1656258-03 09/	/19/23 15:40 • (DUF	P) R3975959-4	4 09/19/23	3 15:40		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	859	849	1	1.09		5

## Laboratory Control Sample (LCS)

(LCS) R3975959-2 09	9/19/23 15:40				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8460	96.1	77.3-123	

DATE/TIME: 10/02/23 17:04

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## Reg @ 243 9 (23 7/22/2024 12:14:14 PM

Gravimetric Analysis by Method 2540 C-2011

## QUALITY CONTROL SUMMARY L1656006-01

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## Method Blank (MB)

(MB) R3979049-1 09	9/26/23 09:36			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U	Ţ	10.0	10.0

## L1657767-01 Original Sample (OS) • Duplicate (DUP)

Original Result DUP Result Dilution DUP RPD <u>DUP Qualifier</u> DUP RPD Limits	(OS) L1657767-01 09/26		· / ·		,		
Analyte mail mail %	Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	

## L1658529-09 Original Sample (OS) • Duplicate (DUP)

L1658529-09 Or	iginal Sample	e (OS) • Di	uplicate	(DUP)			<sup>7</sup> Gl
(OS) L1658529-09 09/	/26/23 09:36 • (DL	JP) R3979049	9-4 09/26/	23 09:36			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	<sup>8</sup> A
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	982	998	1	1.62		5	<sup>9</sup> So

## Laboratory Control Sample (LCS)

(LCS) R3979049-2 09/	26/23 09:36		(LCS) R3979049-2 09/26/23 09:36							
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	mg/l	mg/l	%	%						
Dissolved Solids	8800	8690	98.8	77.3-123						

DATE/TIME: 10/02/23 17:04

PAGE: 19 of 25 Wet Chemistry by Method 9056A

### QUALITY CONTROL SUMMARY L1656006-01,02,03,04,05,06,07,08,09,10,11

## Method Blank (MB)

(MB) R3976173-1	09/20/23 09:20	

(	MB Result	MB Qualifier	MB MDL	MB RDL		
alyte	mg/l		mg/l	mg/l		
Bromide	U		0.353	1.00		
Chloride	U		0.379	1.00		
Sulfate	0.623	J	0.594	5.00		

## L1655802-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1655802-21 09/20/2	23 10:41 • (DUP	) R3976173-3 (				
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	U	U	1	0.000		15
Chloride	0.643	0.654	1	1.70	J	15
Sulfate	0.887	0.888	1	0.113	J	15

## L1655979-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1655979-03 09/20/23 20:47 • (DUP) R3976173-6 09/20/23 21:01										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	mg/l	mg/l		%		%				
Bromide	0.683	0.683	1	0.0439	J	15				
Chloride	104	104	1	0.390		15				
Sulfate	144	145	1	0.280		15				

## Laboratory Control Sample (LCS)

(LCS) R3976173-2 09/20	(LCS) R3976173-2 09/20/23 09:34							
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier			
Analyte	mg/l	mg/l	%	%				
Bromide	40.0	40.1	100	80.0-120				
Chloride	40.0	39.8	99.5	80.0-120				
Sulfate	40.0	39.3	98.3	80.0-120				

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### Wet Chemistry by Method 9056A

## QUALITY CONTROL SUMMARY <u>L1656006-01,02,03,04,05,06,07,08,09,10,11</u>

## L1655802-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1655802-21 09/20/2	23 10:41 • (MS)	R3976173-4 09	9/20/23 11:07 •	(MSD) R39761	73-5 09/20/23	11:20						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	40.0	U	41.4	41.2	104	103	1	80.0-120			0.547	15
Chloride	40.0	0.643	41.5	41.3	102	102	1	80.0-120			0.467	15
Sulfate	40.0	0.887	41.4	41.2	101	101	1	80.0-120			0.332	15

## L1655979-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1655979-03 09/20	0/23 20:47 • (MS	) R3976173-7 (	09/20/23 21:1	4			
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	40.0	0.683	40.1	98.5	1	80.0-120	
Chloride	40.0	104	123	49.3	1	80.0-120	<u>J6</u>
Sulfate	40.0	144	157	30.5	1	80.0-120	<u>J6</u>

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### Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

#### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
В	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.

PROJECT: 212C-HN-02228

SDG: L1656006 DATE/TIME: 10/02/23 17:04

## Received by OCD: 2/22/2024 12:14:14 PACCREDITATIONS & LOCATIONS

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labama	40660	Nebraska	NE-OS-15-05
laska	17-026	Nevada	TN000032021-1
rizona	AZ0612	New Hampshire	2975
rkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
lorida	E87487	North Carolina <sup>1</sup>	DW21704
ieorgia	NELAP	North Carolina <sup>3</sup>	41
ieorgia <sup>1</sup>	923	North Dakota	R-140
daho	TN00003	Ohio-VAP	CL0069
linois	200008	Oklahoma	9915
ndiana	C-TN-01	Oregon	TN200002
owa	364	Pennsylvania	68-02979
ansas	E-10277	Rhode Island	LAO00356
entucky <sup>16</sup>	KY90010	South Carolina	84004002
entucky <sup>2</sup>	16	South Dakota	n/a
ouisiana	Al30792	Tennessee <sup>14</sup>	2006
ouisiana	LA018	Texas	T104704245-20-18
laine	TN00003	Texas ⁵	LAB0152
laryland	324	Utah	TN000032021-11
lassachusetts	M-TN003	Vermont	VT2006
lichigan	9958	Virginia	110033
linnesota	047-999-395	Washington	C847
lississippi	TN00003	West Virginia	233
lissouri	340	Wisconsin	998093910
lontana	CERT0086	Wyoming	A2LA
2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
2LA – ISO 17025 <sup>5</sup>	1461.02	DOD	1461.01
anada	1461.01	USDA	P330-15-00234
PA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

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oylon Breyman				dylon.brey						h.com;matthew.castre		.com;matthew.castre										Submitting a sample via constitutes acknowledge	this chain of custody ment and acceptance of the
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hone: 832-251-5160		ent Projec 2C-HN-(	t#		Lab Pro	oject #				oPres			in L		1					6006 C102			
ollected by (print): IFMIF TEAM	Site	e/Facility I	D #		P.O. #					DPE-N	res						No IV		Acctnum: TET				
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Sample ID	Co	mp/Grab	Matrix *	Depth	1	Date	Time	Cntrs	BROMIDE,	SULF	TDS 1								Remarks	Sample # (lab only)			
Mw-1	G	rab	GW		91	13/23	1020	21	X	X	×				1					01			
MW-2	1	1	GW	2	1	î.	940		X	X	X									62			
Mu-3			GW				940		X	X	X		100		2					63			
MW-4		1	GW				1205		×	X	X				-					04			
MW-5			GW				1105		X	X	X		1		1					OS			
MW 6		-	GW		-			++	X	X	X	-	NO	T SA	mple	ed,	PA	4		de			
MW-T			GW		11.5		900		×	X	X									66			
MW-8			GW			1	825		X	X	X			-						51			
MW-9			GW				1020		X	×	X									B			
MW-10		V	GW			V	900	4	XX	X	X		and a							09			
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater												pH Flow		Temp			COC Si Bottle Correc	al Pr gned/ s arr t bot	<pre>le Receipt C esent/Intact Accurate: ive intact: tles used: volume sent:</pre>				
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oylon Breyman roject Description:			City/State	1		1 - 11 - 1	Please Cir	rcle:	250mlHDPE-NoP										Pace Terms and Condit https://info.pacelabs.co	gment and acceptance of the ions found at: om/hubfs/pas-standard-									
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none: 832-251-5160		ent Project 2C-HN-0					AHTX-MCA357			oPres			121						SDG #	56000									
ollected by (print): HMIE TEAM	Sit	e/Facility ID	) #		P.O. #	4			D. #			P.O. #				DPE-N	res								Acctnum: TET				
iollected by (signature):		Same Da		Day	1 1			Only) Date Results Needed				te Results Needed		N		esults Needed No. of		BROMIDE, CHLORIDE	ATE 250mlHDPE-NoPres	1L-HDPE NoPres								Template: <b>T21</b> Prelogin: <b>P10</b> PM: <b>3564</b> - Ch PB: Shipped Via:	
Sample ID	c	omp/Grab	Matrix *	Depth		Date	Time	Cntrs	BRON	SULFATE	TDS :		1						Remarks	Sample # (lab only)									
-MW-11	-0	grab	GW					+	X	X	×	_	N		ANY		1	Ry											
	_	+	GW	-	-	_		-	X	X	X	-	Not	- 51	mpli	2	PRY			1									
Mw-12 Mw-13		1	GW		91	13/23	1105	21	×	X	×		1	0.03						10									
DUP-01		V	GW	11.772		L	1000	V	X	X	×						1 × 1			ti									
001 01			GW															-											
			GW								S. The						12-1												
			GW								4									and the second second									
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			GW	10.00									5. 23							1									
Matrix: S - Soil AIR - Air F - Filter SW - Groundwater B - Bioassay NW - WasteWater	Rema	rks:										pH Flow		_ Temp _ Othe			COC S Bottl Corre	Sample Receipt Checklist C Seal Present/Intact: NP N Signed/Accurate: Y N ttles arrive intact; Y N wrect bottles used: Y N											
DW - Drinking Water OT - Other	Samp UP	les returned S <u>V</u> FedE	d via: xCourie	er		Track	ing# 69	841		534	p	747	1				VOA Z	lero H	volume sent <u>If Applica</u> eadspace: on Correct/C	ble Y N									
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Relinquished by ((Signature)		C	Date:	Tim	ne:	Recei	ved by: (Signa	ature)				Temp: (	12110°	1	les Rece		1		in required by L	ogin: Date/Time									
Relinquished by : (Signature)		C	Date:	Tim	ne:	Received for lab by: (Signat			iture		)	Date:	1.23	Tim	ie: 0846	_	Hold:			Condition: NCF / OK									

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rtical <sup>®</sup> /		ICAL REPO	RT <sup>'cp</sup>	
			<sup>2</sup> Tc	
Tetra	a Tech EMI - Ho	ouston, TX	<sup>3</sup> Ss	
Sampl	e Delivery Group:	L1683710	<sup>↑</sup> Cn	
Sampl	es Received:	12/01/2023	<sup>5</sup> Sr	
Projec	t Number:	212C-HN-02228	51	
Descri	iption:	MNR - MCA 357 GW	<sup>6</sup> Qc	
			7 GI	
Report	t To:	Chuck Terhune		
		1500 CityWest Boulevard	<sup>8</sup> AI	
		Suite 1000		
		Houston, TX 77042	Sc	

Entire Report Reviewed By:

that tphat

Chad A Upchurch Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be Analytical National is performed per guidance provided in laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

# Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

Released to Imaging: 4/23/2024 9:03:08 AM Tetra Tech EMI - Houston, TX

PROJECT: 212C-HN-02228

SDG: L1683710

DATE/TIME: 12/21/23 14:22

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# SAMPLE SUMMARY

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Ср

Tc

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MW-1 L1683710-01 GW			Collected by G.S/H.M.I	Collected date/time 11/30/23 10:20	Received da 12/01/23 09:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2186492	50	12/12/23 17:30	12/12/23 17:30	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2186492	500	12/12/23 17:45	12/12/23 17:45	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-2 L1683710-02 GW			G.S/H.M.I	11/30/23 11:00	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187466	10	12/15/23 15:10	12/15/23 15:10	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187466	100	12/15/23 15:25	12/15/23 15:25	GEB	Mt. Juliet, TN
			Collected by G.S/H.M.I	Collected date/time 11/30/23 08:30	Received da 12/01/23 09:	
MW-3 L1683710-03 GW	<b>D</b> !					
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	10	12/14/23 02:47	12/14/23 02:47	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	100	12/14/23 03:02	12/14/23 03:02	GEB	Mt. Juliet, TN
			Collected by G.S/H.M.I	Collected date/time 11/30/23 09:40	Received da 12/01/23 09:	
MW-4 L1683710-04 GW						
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	10	12/14/23 03:16	12/14/23 03:16	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	100	12/14/23 03:31	12/14/23 03:31	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-5 L1683710-05 GW			G.S/H.M.I	11/30/23 09:15	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	1	12/14/23 03:46	12/14/23 03:46	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	50	12/14/23 04:01	12/14/23 04:01	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	
MW-7 L1683710-06 GW			G.S/H.M.I	11/30/23 11:40	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2190188	1	12/15/23 17:02	12/15/23 17:02	ASM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2190188	10	12/15/23 17:16	12/15/23 17:16	ASM	Mt. Juliet, TN

Released to Imaging: 4/25/2024 9:03:08 AM Tetra Tech EMI - Houston, TX **PROJECT**: 212C-HN-02228

SDG: L1683710 DATE/TIME: 12/21/23 14:22

PAGE: 3 of 29 Received by OCD: 2/22/2024 12:14:14 PM

# SAMPLE SUMMARY

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MW-8 L1683710-07 GW			Collected by G.S/H.M.I	Collected date/time 11/30/23 11:05	Received da 12/01/23 09:	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	10	12/14/23 04:46	12/14/23 04:46	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2187473	100	12/14/23 05:31	12/14/23 05:31	GEB	Mt. Juliet, TN
			Collected by	Collected date/time		
MW-9 L1683710-08 GW			G.S/H.M.I	11/30/23 09:55	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	10	12/14/23 14:59	12/14/23 14:59	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	100	12/14/23 15:12	12/14/23 15:12	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-10 L1683710-09 GW			G.S/H.M.I	11/30/23 11:55	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	10	12/14/23 15:24	12/14/23 15:24	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	100	12/14/23 15:37	12/14/23 15:37	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
MW-13 L1683710-10 GW			G.S/H.M.I	11/30/23 08:25	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	1	12/14/23 15:50	12/14/23 15:50	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	10	12/14/23 16:02	12/14/23 16:02	GEB	Mt. Juliet, TN
			Collected by	Collected date/time	Received da	te/time
DUP-01 L1683710-11 GW			G.S/H.M.I	11/30/23 10:00	12/01/23 09:	00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2183201	1	12/05/23 16:25	12/05/23 20:33	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	1	12/14/23 16:15	12/14/23 16:15	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2189205	10	12/14/23 16:53	12/14/23 16:53	GEB	Mt. Juliet, TN

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# CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

that tphat

Chad A Upchurch Project Manager

Sample Delivery Group (SDG) Narrative

The Laboratory is not accredited for specific analytes on the associated Sample/Method. These analytes are flagged in the Sample Results section of the report with an asterisk (\*).

Lab Sample ID	Project Sample ID	Method
<u>L1683710-01</u>	<u>MW-1</u>	9056A
L1683710-02	<u>MW-2</u>	9056A
L1683710-03	<u>MW-3</u>	9056A
L1683710-04	<u>MW-4</u>	9056A
L1683710-05	<u>MW-5</u>	9056A
L1683710-06	<u>MW-7</u>	9056A
L1683710-07	<u>MW-8</u>	9056A
L1683710-08	<u>MW-9</u>	9056A
L1683710-09	<u>MW-10</u>	9056A
<u>L1683710-10</u>	<u>MW-13</u>	9056A
L1683710-11	<u>DUP-01</u>	9056A
R4013129-3		9056A
R4013129-4		9056A
R4013129-5		9056A

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'TIME: 3 14:22 **PAGE**: 5 of 29

#### SAMPLE RESULTS - 01 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

-	Result	Qualifier RDL	Dilution	Analysis	Patch	 Ср
Analyte	mg/l	Qualifier RDL mg/l	Dilution	date / time	Batch	2
Dissolved Solids	103000	1000	1	12/05/2023 20:33	WG2183201	Tc

Wet Chemistry by Method 9056A									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn
*Bromide	84.8		17.6	50.0	50	12/12/2023 17:30	WG2186492		CII
Chloride	35900		190	500	500	12/12/2023 17:45	WG2186492		5
Sulfate	547		29.7	250	50	12/12/2023 17:30	WG2186492		Sr

SAMPLE RESULTS - 02 L1683710

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### Gravimetric Analysis by Method 2540 C-2011

	<u>, , , , , , , , , , , , , , , , , , , </u>					 Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	CP
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	14000	200	1	12/05/2023 20:33	WG2183201	⁻Tc

Wet Chemistry by Method 9056A									
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch		
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn
*Bromide	7.79	J	3.53	10.0	10	12/15/2023 15:10	WG2187466		
Chloride	5450		37.9	100	100	12/15/2023 15:25	WG2187466		5
Sulfate	341		5.94	50.0	10	12/15/2023 15:10	WG2187466		Sr

Collected date/time: 11/30/23 08:30

SAMPLE RESULTS - 03 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

	· ·							1 Cn
		Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte		mg/l		mg/l		date / time		2
Dissolved Solids		9760		200	1	12/05/2023 20:33	WG2183201	ЪТс

#### Wet Chemistry by Method 9056A

Wet Chemistry by Method 9056A											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn		
*Bromide	6.10	J	3.53	10.0	10	12/14/2023 02:47	WG2187473		CII		
Chloride	3800		37.9	100	100	12/14/2023 03:02	WG2187473		5		
Sulfate	179		5.94	50.0	10	12/14/2023 02:47	WG2187473		Sr		

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SAMPLE RESULTS - 04 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

							 1'Cn
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	16700		200	1	12/05/2023 20:33	WG2183201	Tc

Wet Chemistry by Method 9056A											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn		
*Bromide	7.04	J	3.53	10.0	10	12/14/2023 03:16	WG2187473				
Chloride	7180		37.9	100	100	12/14/2023 03:31	WG2187473		5		
Sulfate	203		5.94	50.0	10	12/14/2023 03:16	WG2187473		Sr		

Collected date/time: 11/30/23 09:15

SAMPLE RESULTS - 05 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

							Cn
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Cp
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	3960		50.0	1	12/05/2023 20:33	WG2183201	¯Тс

Wet Chemistry by Method 9056A											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn		
*Bromide	0.612	J	0.353	1.00	1	12/14/2023 03:46	WG2187473		CII		
Chloride	1350		19.0	50.0	50	12/14/2023 04:01	WG2187473		5		
Sulfate	131		0.594	5.00	1	12/14/2023 03:46	WG2187473		Sr		

SAMPLE RESULTS - 06 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch		Cp			
Analyte	mg/l		mg/l		date / time			2			
Dissolved Solids	2260		50.0	1	12/05/2023 20:33	WG2183201		⁻Tc			

Wet Chemistry by Method 9056A											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time					
*Bromide	1.63	В	0.353	1.00	1	12/15/2023 17:02	<u>WG2190188</u>				
Chloride	890		3.79	10.0	10	12/15/2023 17:16	<u>WG2190188</u>				
Sulfate	175		0.594	5.00	1	12/15/2023 17:02	WG2190188				

Collected date/time: 11/30/23 11:05

SAMPLE RESULTS - 07 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

	<u> </u>					 l'Cn
	Result	Qualifier RDL	Dilution	Analysis	Batch	
Analyte	mg/l	mg/l		date / time		2
Dissolved Solids	5900	100	1	12/05/2023 20:33	WG2183201	⁻Tc

Wet Chemistry by Method 9056A											
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch				
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn		
*Bromide	4.50	J	3.53	10.0	10	12/14/2023 04:46	WG2187473		CII		
Chloride	2210		37.9	100	100	12/14/2023 05:31	WG2187473		5		
Sulfate	97.2		5.94	50.0	10	12/14/2023 04:46	WG2187473		Sr		

SAMPLE RESULTS - 08 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

	Result	Qualifier	RDL	Dilution	Analysis	Batch		Cp		
Analyte	mg/l		mg/l		date / time			2		
Dissolved Solids	16200		200	1	12/05/2023 20:33	WG2183201		Тс		

Wet Chemistry by Method 9056A												
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch					
Analyte	mg/l		mg/l	mg/l		date / time			<sup>4</sup> Cn			
*Bromide	10.3		3.53	10.0	10	12/14/2023 14:59	WG2189205					
Chloride	5400		37.9	100	100	12/14/2023 15:12	WG2189205		5			
Sulfate	400		5.94	50.0	10	12/14/2023 14:59	WG2189205		Sr			

#### SAMPLE RESULTS - 09 L1683710

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Collected date/time: 11/30/23 11:55

# Gravimetric Analysis by Method 2540 C-2011

<u>,</u>	Result	Qualifier	RDL	Dilution	Analysis	Batch	 'Ср
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	4920		100	1	12/05/2023 20:33	<u>WG2183201</u>	¯Тс

### Wet Chemistry by Method 9056A

Wet Chemistr	ry by Method 9	9056A						
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		
*Bromide	7.77	J	3.53	10.0	10	12/14/2023 15:24	WG2189205	
Chloride	1680		37.9	100	100	12/14/2023 15:37	WG2189205	
Sulfate	52.2		5.94	50.0	10	12/14/2023 15:24	WG2189205	

#### Sample Narrative:

L1683710-09 WG2189205: Dilution due to matrix.

#### SAMPLE RESULTS - 10 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

			1				Cn.
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	3680		50.0	1	12/05/2023 20:33	WG2183201	⁻Tc

Wet Chemist	ry by Method S	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
*Bromide	4.59		0.353	1.00	1	12/14/2023 15:50	WG2189205	CII
Chloride	1610		3.79	10.0	10	12/14/2023 16:02	WG2189205	5
Sulfate	216		5.94	50.0	10	12/14/2023 16:02	WG2189205	Sr

#### SAMPLE RESULTS - 11 L1683710

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# Gravimetric Analysis by Method 2540 C-2011

							1 Cm
	Result	Qualifier	RDL	Dilution	Analysis	Batch	Ср
Analyte	mg/l		mg/l		date / time		2
Dissolved Solids	3650		50.0	1	12/05/2023 20:33	WG2183201	Tc

Wet Chemist	try by Method 9	9056A						<sup>3</sup> Ss
	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch	
Analyte	mg/l		mg/l	mg/l		date / time		<sup>4</sup> Cn
*Bromide	4.65		0.353	1.00	1	12/14/2023 16:15	WG2189205	CII
Chloride	1530		3.79	10.0	10	12/14/2023 16:53	WG2189205	5
Sulfate	202		5.94	50.0	10	12/14/2023 16:53	WG2189205	Sr

# Reg g g b 2/22/2024 12:14:14 PM

Gravimetric Analysis by Method 2540 C-2011

#### QUALITY CONTROL SUMMARY L1683710-01,02,03,04,05,06,07,08,09,10,11

### Method Blank (MB)

(MB) R4009484-1 12/05	6/23 20:33			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

# L1683055-01 Original Sample (OS) • Duplicate (DUP)

L1683055-01 Oriç	ginal Sample	(OS) • Du	plicate (	(DUP)			4
(OS) L1683055-01 12/05	5/23 20:33 • (DUI	P) R4009484-3	3 12/05/23	3 20:33			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	5
Analyte	mg/l	mg/l		%		%	
Dissolved Solids	878	890	1	1.41		5	6

# L1683539-01 Original Sample (OS) • Duplicate (DUP)

L1683539-01 Or	iginal Sample	(OS) • Du	plicate (	DUP)		
OS) L1683539-01 12/0	05/23 20:33 • (DUF	P) R4009484-	4 12/05/23	3 20:33		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	230	236	1	2.58		5

# Laboratory Control Sample (LCS)

(LCS) R4009484-2 1	2/05/23 20:33				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8600	97.7	85.0-115	

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# QUALITY CONTROL SUMMARY L1683710-01

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#### Method Blank (MB)

(MB) R4011715-1	12/12/23 10:38

N 10 17 12/12/20 10.0	MB Result	MB Qualifier	MB MDL	MB RDL	
r <b>te</b> r	mg/l		mg/l	mg/l	
l	U		0.353	1.00	
ι	U		0.379	1.00	
ι	U		0.594	5.00	

# L1682735-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1682735-04 12/12/23 14:17 • (DUP) R4011715-3 12/12/23 14:31									
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits			
Analyte	mg/l	mg/l		%		%			
Sulfate	10.8	10.8	1	0.0446		15			

# L1684413-16 Original Sample (OS) • Duplicate (DUP)

(OS) L1684413-16 12/	12/23 20:29 • (DUP	) R4011715-6 1	2/12/23 20	):44				l
	Original Resul	t DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	9 S C	
Analyte	mg/l	mg/l		%		%	SC	l
Chloride	1.19	1.18	1	0.236		15		
Sulfate	4.07	4.06	1	0.128	J	15		

# Laboratory Control Sample (LCS)

(LCS) R4011715-2 12/12/23 10:52										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	mg/l	mg/l	%	%						
Bromide	40.0	39.5	98.7	80.0-120						
Chloride	40.0	39.5	98.8	80.0-120						
Sulfate	40.0	40.8	102	80.0-120						

# L1682735-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1682735-04 12/12/23 14:17 • (MS) R4011715-4 12/12/23 14:46 • (MSD) R4011715-5 12/12/23 15:01												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfate	40.0	10.8	51.6	51.6	102	102	1	80.0-120			0.0407	15

Released	to	Imaging <sup>AC4</sup> /23/2024		AM
		Tetra Tech EMI - Houston,	TX	

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# L1684413-16 Original Sample (OS) • Matrix Spike (MS)

21084415-10 0										
(OS) L1684413-16 12/12/23 20:29 • (MS) R4011715-7 12/12/23 20:59										
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier	2		
Analyte	mg/l	mg/l	mg/l	%		%		⁻Tc		
Chloride	40.0	1.19	41.0	99.4	1	80.0-120				
Sulfate	40.0	4.07	45.8	104	1	80.0-120		<sup>3</sup> Ss		

SDG: L1683710 DATE/TIME: 12/21/23 14:22

PAGE: 19 of 29

# QUALITY CONTROL SUMMARY L1683710-02

### Method Blank (MB)

(MB) R4013226-1	12/15/23 04:00

(110) 1(+015220-1 12/	13/23 04.00			
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Chloride	0.698	<u>J</u>	0.379	1.00
Sulfate	U		0.594	5.00

#### L1683438-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1683438	-02 12/15/23 06:28 • (DUI	P) R4013226-3	3 12/15/23	07:13			
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		%	
Bromide	U	U	1	0.000		15	
Chloride	11.6	11.6	1	0.0266		15	
Sulfate	39.8	39.8	1	0.155		15	

# L1683438-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1683438-09 12/15/23 11:26 • (DUP) R4013226-6 12/15/23 11:41										
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits				
Analyte	mg/l	mg/l		%		%				
Bromide	U	U	1	0.000		15				
Chloride	7.56	7.57	1	0.168		15				
Sulfate	41.3	41.5	1	0.484		15				

# Laboratory Control Sample (LCS)

(LCS) R4013226-2 12/15/23 04:29										
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier					
Analyte	mg/l	mg/l	%	%						
Bromide	40.0	41.9	105	80.0-120						
Chloride	40.0	39.8	99.5	80.0-120						
Sulfate	40.0	42.2	105	80.0-120						

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# QUALITY CONTROL SUMMARY

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# L1683438-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1683438-02 12/15/23 06:28	• (MS) R4013226-4 12/15/23 07:28	• (MSD) R4013226-5 12/15/23 07:43

	· · ·			· /								
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	40.0	U	38.6	38.4	96.4	96.1	1	80.0-120			0.334	15
Chloride	40.0	11.6	49.0	48.9	93.3	93.3	1	80.0-120			0.0562	15
Sulfate	40.0	39.8	74.0	73.9	85.5	85.2	1	80.0-120			0.145	15

# L1683438-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1683438-09 12/15/2	23 11:26 • (MS) R	4013226-7 12/	15/23 11:56				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	40.0	U	37.8	94.5	1	80.0-120	
Chloride	40.0	7.56	44.6	92.7	1	80.0-120	
Sulfate	40.0	41.3	74.7	83.4	1	80.0-120	

DATE/TIME: 12/21/23 14:22

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# QUALITY CONTROL SUMMARY L1683710-03,04,05,07

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#### Method Blank (MB)

(MB) R4012483-1 12/13/23 17:35

IVID) R4012463-1 1	MB Result	MB Qualifier	MB MDL	MB RDL		
nalyte	mg/l	mb quanter	mg/l	mg/l		
Bromide	U		0.353	1.00		
Chloride	U		0.379	1.00		
Sulfate	U		0.594	5.00		

### L1683343-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1683343-03 12/13/23 21:57 • (DUP) R4012483-3 12/13/23 22:12

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits	
Analyte	mg/l	mg/l		%		%	
Bromide	0.394	0.393	1	0.153	J	15	
Chloride	3.24	3.24	1	0.0432		15	
Sulfate	3.89	3.88	1	0.0695	J	15	

# L1683343-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1683343-10 12/14/23	8 00:56 • (DUP)	R4012483-6	12/14/23 0	1:11		
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Bromide	0.361	0.366	1	1.54	J	15
Chloride	3.47	3.47	1	0.130		15
Sulfate	13.1	13.1	1	0.339		15

# Laboratory Control Sample (LCS)

(LCS) R4012483-2 12/13/	23 17:50				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Bromide	40.0	39.6	99.1	80.0-120	
Chloride	40.0	40.0	100	80.0-120	
Sulfate	40.0	40.9	102	80.0-120	

DATE/TIME: 12/21/23 14:22

# QUALITY CONTROL SUMMARY

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# L1683343-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1683343-03 12/13/2	3 21:57 • (MS) R	4012483-4 12/	13/23 22:27 •	(MSD) R401248	3-5 12/13/23 2	22:42						
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Bromide	40.0	0.394	37.8	38.4	93.5	95.1	1	80.0-120			1.72	15
Chloride	40.0	3.24	42.3	42.5	97.6	98.2	1	80.0-120			0.579	15
Sulfate	40.0	3.89	43.5	44.0	98.9	100	1	80.0-120			1.23	15

# L1683343-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1683343-10 12/14/23	3 00:56 • (MS) F	R4012483-7 12	/14/23 01:26				
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Bromide	40.0	0.361	35.1	86.8	1	80.0-120	
Chloride	40.0	3.47	41.1	94.1	1	80.0-120	
Sulfate	40.0	13.1	49.2	90.2	1	80.0-120	

SDG: L1683710 DATE/TIME: 12/21/23 14:22

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# QUALITY CONTROL SUMMARY

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#### Method Blank (MB)

(MB) R4013129-1 12/14/23 08:40

0,1(4010120112	MB Result	MB Qualifier	MB MDL	MB RDL	
alyte	mg/l		mg/l	mg/l	
Bromide	U		0.353	1.00	
Chloride	0.446	J	0.379	1.00	
Sulfate	U		0.594	5.00	

# L1683812-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1683812-07 12/14/23 18:10 • (DUP) R4013129-3 12/14/23 18:23

			D:1 .:			DUP RPD	
	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	Limits	
Analyte	mg/l	mg/l		%		%	
Bromide	0.942	0.938	1	0.521	J	15	
Chloride	133	133	1	0.0908		15	
Sulfate	347	346	1	0.121	E	15	

# Laboratory Control Sample (LCS)

(LCS) R4013129-2 12/14/2	23 08:53				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Bromide	40.0	39.6	98.9	80.0-120	
Chloride	40.0	40.6	101	80.0-120	
Sulfate	40.0	38.9	97.2	80.0-120	

# L1683812-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1683812-07 12/14/23 18:10 • (MS) R4013129-4 12/14/23 18:35 • (MSD) R4013129-5 12/14/23 18:48														
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits		
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%		
Bromide	40.0	0.942	37.3	37.3	90.9	90.8	1	80.0-120			0.0773	15		
Chloride	40.0	133	148	148	37.1	36.2	1	80.0-120	<u>J6</u>	<u>J6</u>	0.222	15		
Sulfate	40.0	347	319	318	0.000	0.000	1	80.0-120	EV	EV	0.438	15		

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	Tetra Tech EMI - Houston,	TX	

**PROJECT:** 212C-HN-02228

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# QUALITY CONTROL SUMMARY L1683710-06

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### Method Blank (MB)

(MB) R4013460-1 12/15	MB) R4013460-1 12/15/23 09:38								
	MB Result	MB Qualifier	MB MDL	MB RDL					
Analyte	mg/l		mg/l	mg/l					
Bromide	0.749	J	0.353	1.00					
Chloride	U		0.379	1.00					
Sulfate	U		0.594	5.00					

# Laboratory Control Sample (LCS)

(LCS) R4013460-2 1	2/15/23 09:52				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Bromide	40.0	38.6	96.6	80.0-120	
Chloride	40.0	39.1	97.7	80.0-120	
Sulfate	40.0	38.3	95.6	80.0-120	

DATE/TIME: 12/21/23 14:22

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#### Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

#### Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
В	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
V	The sample concentration is too high to evaluate accurate spike recoveries.

SDG: L1683710

# Received by OCD: 2/22/2024 12:14:14 PACCREDITATIONS & LOCATIONS

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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
lowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky <sup>16</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	Al30792	Tennessee <sup>14</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> Wastewater n/a Accreditation not applicable

\* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

\* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

SDG: L1683710

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1500 CityWest Boulevard		Accounts 901 West	t Wall	Pres Chk										Pa	ace <sup>-</sup>			
		Suite 100 Midland,		. 0										JLIET, T				
Report to: Chuck Terhune			Email To: chuck.terh					oPres						12065 Lebanon Rd Mo Submitting a sample vi constitutes acknowled	unt Juliet, TN 3 a this chain of c	07122 custody		
Project Description: MNR - MCA 357 GW		City/State Collected:		HR, NM	Please C PT MT	Circle:	DPE-N						2			Pace Terms and Condit https://info.pacelabs.c terms.pdf	ions found at:	
Phone: 832-251-5160	Client Project 212C-HN-0			Lab Project # TETRAHT		1	HIMO	oPres						sdg # L1683710 J090				
Collected by (print): Greg Scherberster / Hmz	Site/Facility ID	) #		P.O. #			25		oPres			3			Acctnum: TETRAHTX			
Collected by (signature):	by (signature): Terrari Same Day Five Same Day 5 D Two Day 10			Quote #	# e Results Needed		IIDE, CHLORIDE	TE 250mlHDPE-NoPres	HDPE N							Template: <b>T217803</b> Prelogin: <b>P1038190</b> PM: <b>3564 - Chad A Upchurch</b> PB:		
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	BROMIDE,	SULFATE	TDS 1L			-		-		Shipped Via: Remarks	Sample	# (lab only)
MW-1	Grado	GW		11/30/2	3 1020		X	X	X								-	0
MW-2	I	GW		1	1100		1	1	T								1	02
MW-3		GW			830												-	03
MW-4		GW			940	-											-	04
MW-5		GW			915											-	-	05
MW-6		GW			-					- No	17 3	SAMP	משוי	Dry				
MW-7		GW			1140												-	66
MW -8	1.1	GW	1.27	100	1105								1				-	07
MW-9		GW			955	1						23				1	-	08
MW-10		GW		V	1155	1	V	1	1			-	1				-	69
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater										pH Temp _ Flow Other _			_	COC Si Bottle Correc	Sample Receipt Checklist COC Seal Present/Intact: MP Y N COC Signed/Accurate: Y N Bottles arrive intact: N Correct bottles used: N			
DW - Drinking Water OT - Other Relinquished/by : (Fignature)	amples returned UPS VFedEx		racking # 60	43 (ature)	4318	89	223	Trip Blank Re	eceived	: Yes/N	6			If Applical	ble	Y _N Y _N N		
hemiliane and the mental of		11/30/2		1330	-7-1-0				1			HCL /	МеоН					T
Relinquished by : (Signature)	D	ate:	Time	e: Re	eceived by: (Sign	nature)	٢.			Temp: D.P.	18C	Bottles Ren	ieived:	1	ervatior	n required by Lo		
Relinquished by : (Signature) Released to Imaging: 4/23/2024 9:0	ate:	Time	e: Re	eceived for lab b	iy: (Signa	ture	her	P	Date: Time:					Hold:			ndition:	

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			901 Wes Suite 100	Accounts Payable 901 West Wall Suite 100 Midland, TX 79701					1						PEOPLE	ACC ADVANCING SCIENCE
Houston. TX 77042 Report to:				Email To:												JLIET, TN
Chuck Terhune	-		chuck.terh		VoPre								12065 Lebanon Rd Mc Submitting a sample vi constitutes acknowled			
Project Description: MNR - MCA 357 GW		City/State Collected:	MALJAM	MR, NA	A Please O PT MT		PE-1								Pace Terms and Condit https://info.pacelabs.c terms.pdf	tions found at: .om/hubfs/pas-standard-
Phone: 832-251-5160	Client Project 212C-HN-C			Lab Project TETRAHT	# X-MCA357		250mlHDPE-N	Pres							SDG # L1683710	
Collected by (print): Grey Schurpenske Hmz	Site/Facility I	D #		P.O. #			Contraction of the second second	PE-No	es						Table # Acctnum: <b>TET</b>	RAHTX
Collected by (signature):	M Rush? (	Lab MUST Be Day Five	Day	Quote #			CHLORIDE	SULFATE 250mlHDPE-NoPres	E NoPres						Template: <b>T21</b> Prelogin: <b>P10</b>	17803
Immediately Packed on Ice N Y	Next D Two Da Three I		y (Rad Only) Day (Rad Only)	Date R	esults Needed	No. of	BROMIDE, C	ATE 25	1L-HDPE						PB:	ad A Upchurch
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	BRON	SULFA	TDS 1		11				Shipped Via: Remarks	Sample # (lab only)
MW-11		GW				-	X	×	×	-	WT	SAMPI	ed ;	DRy		
MW-12-	1	GW				-	×	×	×	-	NOT	SAM	pied	inny		
MW - 13	Guro	GW		11/30/	23 825		×	×	×						11.2.2	-10
Pup-01	1	GW		T	1000	_	X	X	×						1	-11
-		GW									1	-			1000	
		GW											-			
											12				1	1
the second second				0		1			1	1	1				3	
		-	1	1	-	-			-			1	-			
			1000 D				1									
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater								pH Temp Flow Other _						COC Seal COC Signe Bottles a	<pre>mple Receipt C Present/Intact ed/Accurate: arrive intact: bottles used:</pre>	
DW - Drinking Water S OT - Other	amples returne UPS FedE		r	T	Tracking # 6643 4318 92								,	VOA Zero	If Applicat Headspace: ion Correct/Ch	y_N
Relinquished by : (Signature) Date:			а: 1370 г	eceived by: (Sign	ature)				Trip Bla	nk Recei	TBR	/ MeoH	RAD Scree	en <0.5 mR/hr:	7-	
Relinquished by : (Signature)		)ate:	Time		Received by: (Signa					Temp:	D=1	C Bottles R	eceived: 2Z	If preservat	tion required by Lo	ogin: Date/Time
Relinquished by : (Signature) Released to Imaging: 4/23/2024 9:03:08 AM			Time	e: R	eceived for lab b	delta milehera						Time:	700	Hold:	Condition: NCF /	

MCA 357 (1RP-3025) Lea County, New Mexico 2023 Annual Report January 31, 2024

# **APPENDIX B: CHLORIDE CONCENTRATION GRAPHS**

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#### Chloride Concentration Graphs Maverick Permian, LLC - MCA #357 Lea County, New Mexico



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MCA 357 (1RP-3025) Lea County, New Mexico 2023 Annual Report January 31, 2024

# APPENDIX C: HISTORICAL GROUNDWATER GAUGING DATA

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MW-1

MCA 357

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	102.27	-	83.66	-	-	3,956.78	3,873.12
1/30/2018	-	-	83.81	-	-	3,956.78	3,872.97
4/10/2018	102.27	-	84.00	-	-	3,956.78	3,872.78
8/17/2018	-	-	84.05	-	-	3,956.78	3,872.73
10/18/2018	102.86	-	84.12	-	-	3,956.78	3,872.66
1/23/2019	103.05	-	83.96	-	-	3,956.78	3,872.82
4/25/2019	102.90	-	83.90	-	-	3,956.78	3,872.88
7/10/2019	102.90	-	84.17	-	-	3,956.78	3,872.61
10/9/2019	102.90	-	84.00	-	-	3,956.78	3,872.78
1/15/2020	102.90	-	84.15	-	-	3,956.78	3,872.63
4/28/2020	102.88	-	84.28	-	-	3,956.78	3,872.50
7/7/2020	102.70	-	84.07	-	-	3,956.78	3,872.71
10/1/2020	102.70	-	83.34	-	-	3,956.78	3,873.44
1/14/2021	102.70	-	83.30	-	-	3,956.78	3,873.48
4/6/2021	102.7	-	84.07	-	-	3,956.78	3,872.71
7/13/2021	102.7	-	83.81	-	-	3,956.78	3,872.97
10/8/2021	102.7	-	84.20	-	-	3,956.78	3,872.58
1/11/2022	102.7	-	84.31	-	-	3,956.78	3,872.47
4/4/2022	102.7	-	84.46	-	-	3,956.78	3,872.32
10/18/2022	102.7	-	84.50	-	-	3,956.78	3,872.28
3/28/2023	102.7	-	84.15	-	-	3,956.78	3,872.63
5/24/2023	102.7	-	84.40	-	-	3,956.78	3,872.38
9/13/2023	102.7	-	84.60	-	-	3,956.78	3,872.18
11/30/2023	102.7	-	84.24	-	-	3,956.78	3,872.54

## APPENDIX C

Historical Groundwater Gauging Data

MW-1

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)		
Notes:									
TOC	Top of Casing								
AMSL	Above Mean Sea L	Above Mean Sea Level							
BTOC	Below Top of Casir	ng							
-	No Measurement								

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MW-2

MCA 357

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	108.44	-	83.44	-	-	3,963.58	3,880.14
1/30/2018	-	-	83.39	-	-	3,963.58	3,880.19
4/10/2018	108.44	-	83.48	-	-	3,963.58	3,880.10
8/17/2018	-	-	83.50	-	-	3,963.58	3,880.08
10/18/2018	108.69	-	83.50	-	-	3,963.58	3,880.08
1/23/2019	108.76	-	83.20	-	-	3,963.58	3,880.38
4/25/2019	107.75	-	83.22	-	-	3,963.58	3,880.36
7/10/2019	107.75	-	83.40	-	-	3,963.58	3,880.18
10/9/2019	107.75	-	83.36	-	-	3,963.58	3,880.22
1/15/2020	107.75	-	83.31	-	-	3,963.58	3,880.27
4/28/2020	107.74	-	83.39	-	-	3,963.58	3,880.19
7/7/2020	107.80	-	83.18	-	-	3,963.58	3,880.40
10/1/2020	107.80	-	83.41	-	-	3,963.58	3,880.17
1/13/2021	107.80	-	83.38	-	-	3,963.58	3,880.20
4/6/2021	107.8	-	83.20	-	-	3,963.58	3,880.38
7/13/2021	107.8	-	83.05	-	-	3,963.58	3,880.53
10/7/2021	107.8	-	83.21	-	-	3,963.58	3,880.37
1/11/2022	107.8	-	83.30	-	-	3,963.58	3,880.28
4/4/2022	107.8	-	83.37	-	-	3,963.58	3,880.21
10/18/2022	107.8	-	83.44	-	-	3,963.58	3,880.14
3/28/2023	107.8	-	89.45	-	-	3,963.58	3,874.13
5/24/2023	107.8	-	83.39	-	-	3,963.58	3,880.19
9/13/2023	107.8	-	83.55	-	-	3,963.58	3,880.03
11/30/2023	107.8	-	83.29	-	-	3,963.58	3,880.29

Received by OCD:	Received by OCD: 2/22/2024 12:14:14 PM APPENDIX C Historical Groundwater Gauging Data MW-2 MCA 357 Lea County, New Mexico									
Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)			
<u>Notes</u> : TOC AMSL BTOC -	Top of Casing Above Mean Sea Lo Below Top of Casin No Measurement									

MW-3

MCA 357

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	117.75	-	88.20	-	-	3,951.34	3,863.14
1/30/2018	-	-	89.16	-	-	3,951.34	3,862.18
4/10/2018	117.75	-	88.37	-	-	3,951.34	3,862.97
8/17/2018	-	-	88.31	-	-	3,951.34	3,863.03
10/18/2018	117.37	-	88.42	-	-	3,951.34	3,862.92
1/23/2019	117.29	-	88.08	-	-	3,951.34	3,863.26
4/24/2019	117.40	-	87.40	-	-	3,951.34	3,863.94
7/9/2019	117.40	-	88.28	-	-	3,951.34	3,863.06
10/8/2019	117.40	-	88.25	-	-	3,951.34	3,863.09
1/14/2020	117.40	-	88.23	-	-	3,951.34	3,863.11
4/28/2020	117.40	-	88.45	-	-	3,951.34	3,862.89
7/7/2020	117.30	-	88.01	-	-	3,951.34	3,863.33
10/1/2020	117.30	-	88.38	-	-	3,951.34	3,862.96
1/13/2021	117.30	-	88.34	-	-	3,951.34	3,863.00
4/6/2021	117.3	-	88.10	-	-	3,951.34	3,863.24
7/13/2021	117.3	-	87.70	-	-	3,951.34	3,863.64
10/7/2021	117.3	-	88.05	-	-	3,951.34	3,863.29
1/11/2022	117.3	-	88.26	-	-	3,951.34	3,863.08
4/4/2022	117.3	-	88.45	-	-	3,951.34	3,862.89
10/18/2022	117.3	-	88.51	-	-	3,951.34	3,862.83
3/28/2023	117.3	-	87.73	-	-	3,951.34	3,863.61
5/24/2023	117.3	-	88.19	-	-	3,951.34	3,863.15
9/13/2023	117.3	-	89.06	-	-	3,951.34	3,862.28
11/30/2023	117.3	-	87.90	-	-	3,951.34	3,863.44

Received by OCD:	Received by OCD: 2/22/2024 12:14:14 PM APPENDIX C Historical Groundwater Gauging Data MW-3 MCA 357 Lea County, New Mexico									
Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)			
<u>Notes</u> : TOC AMSL BTOC	Top of Casing Above Mean Sea L Below Top of Casir No Measurement									

MW-4

MCA 357

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	104.22	-	95.11	-	-	3,945.39	3,850.28
1/30/2018	-	-	94.97	-	-	3,945.39	3,850.42
4/10/2018	104.22	-	95.11	-	-	3,945.39	3,850.28
8/17/2018	-	-	95.00	-	-	3,945.39	3,850.39
10/18/2018	103.30	-	95.00	-	-	3,945.39	3,850.39
1/23/2019	102.80	-	94.76	-	-	3,945.39	3,850.63
4/25/2019	103.32	-	94.80	-	-	3,945.39	3,850.59
7/10/2019	103.32	-	92.18	-	-	3,945.39	3,853.21
10/9/2019	103.32	-	94.70	-	-	3,945.39	3,850.69
1/14/2020	103.32	-	94.72	-	-	3,945.39	3,850.67
4/28/2020	103.30	-	94.74	-	-	3,945.39	3,850.65
7/7/2020	103.20	-	94.50	-	-	3,945.39	3,850.89
10/1/2020	103.20	-	94.70	-	-	3,945.39	3,850.69
1/14/2021	103.20	-	94.66	-	-	3,945.39	3,850.73
4/6/2021	103.2	-	94.41	-	-	3,945.39	3,850.98
7/14/2021	103.2	-	94.22	-	-	3,945.39	3,851.17
10/7/2021	103.2	-	94.26	-	-	3,945.39	3,851.13
1/11/2022	103.2	-	94.30	-	-	3,945.39	3,851.09
4/4/2022	103.2	-	94.51	-	-	3,945.39	3,850.88
10/18/2022	103.2	-	94.58	-	-	3,945.39	3,850.81
3/28/2023	103.2	-	94.80	-	-	3,945.39	3,850.59
5/24/2023	103.2	-	94.23	-	-	3,945.39	3,851.16
9/13/2023	103.2	-	94.26	-	-	3,945.39	3,851.13
11/30/2023	103.2	-	93.96	-	-	3,945.39	3,851.43

Received by OCD:	Received by OCD: 2/22/2024 12:14:14 PM APPENDIX C Historical Groundwater Gauging Data MW-4 MCA 357 Lea County, New Mexico										
Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)				
<u>Notes</u> : TOC AMSL BTOC -	Top of Casing Above Mean Sea Le Below Top of Casin No Measurement										

MW-5

MCA 357

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
10/4/2017	113.65	-	89.68	-	-	3,950.37	3,860.69
1/30/2018	-	-	89.68	-	-	3,950.37	3,860.69
4/10/2018	113.65	-	89.94	-	-	3,950.37	3,860.43
8/17/2018	-	-	89.90	-	-	3,950.37	3,860.47
10/18/2018	113.05	-	90.02	-	-	3,950.37	3,860.35
1/23/2019	113.05	-	89.82	-	-	3,950.37	3,860.55
4/25/2019	113.00	-	89.70	-	-	3,950.37	3,860.67
7/10/2019	113.00	-	89.95	-	-	3,950.37	3,860.42
10/9/2019	113.00	-	89.74	-	-	3,950.37	3,860.63
1/15/2020	113.00	-	89.79	-	-	3,950.37	3,860.58
4/28/2020	112.98	-	90.04	-	-	3,950.37	3,860.33
7/7/2020	113.00	-	89.67	-	-	3,950.37	3,860.70
10/1/2020	113.00	-	89.93	-	-	3,950.37	3,860.44
1/14/2021	113.00	-	83.98	-	-	3,950.37	3,866.39
4/6/2021	113	-	89.71	-	-	3,950.37	3,860.66
7/14/2021	113	-	89.60	-	-	3,950.37	3,860.77
10/8/2021	113	-	89.62	-	-	3,950.37	3,860.75
1/11/2022	113	-	89.73	-	-	3,950.37	3,860.64
4/4/2022	113	-	89.94	-	-	3,950.37	3,860.43
10/18/2022	113	-	90.03	-	-	3,950.37	3,860.34
3/28/2023	113	-	89.35	-	-	3,950.37	3,861.02
5/24/2023	113	-	89.66	-	-	3,950.37	3,860.71
9/13/2023	113	-	89.67	-	-	3,950.37	3,860.70
11/30/2023	113	-	89.35	-	-	3,950.37	3,861.02

Received by OCD:	Received by OCD: 2/22/2024 12:14:14 PM APPENDIX C Historical Groundwater Gauging Data MW-5 MCA 357 Lea County, New Mexico									
Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)			
<u>Notes</u> : TOC AMSL BTOC -	Top of Casing Above Mean Sea L Below Top of Casir No Measurement									

MW-6

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	128.12	-	Dry	-	-	3,952.96	Dry
7/9/2019	128.12	-	Dry	-	-	3,952.96	Dry
10/8/2019	128.12	-	Dry	-	-	3,952.96	Dry
1/14/2020	128.12	-	Dry	-	-	3,952.96	Dry
4/28/2020	128.12	-	Dry	-	-	3,952.96	Dry
7/7/2020	128.10	-	Dry	-	-	3,952.96	Dry
9/30/2020	128.10	-	Dry	-	-	3,952.96	Dry
1/13/2021	128.10	-	Dry	-	-	3,952.96	Dry
4/6/2021	128.10	-	Dry	-	-	3,952.96	Dry
7/14/2021	128.10	-	Dry	-	-	3,952.96	Dry
10/8/2021	128.10	-	Dry	-	-	3,952.96	Dry
1/11/2022	128.10	-	Dry	-	-	3,952.96	Dry
4/4/2022	128.10	-	Dry	-	-	3,952.96	Dry
10/18/2022	128.10	-	Dry	-	-	3,952.96	Dry
3/28/2023	128.10	-	Dry	-	-	3,953.96	Dry
5/24/2023	128.10	-	Dry	-	-	3,954.96	Dry
9/13/2023	128.10	-	Dry	-	-	3,955.96	Dry
11/30/2023	128.10	-	Dry	-	-	3,955.96	Dry

#### Notes:

TOC Top of Casing AMSL Above Mean Sea Level BTOC Below Top of Casing -

MW-7

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	127.40	-	89.30	-	-	3,972.11	3,882.81
7/9/2019	127.40	-	89.69	-	-	3,972.11	3,882.42
10/8/2019	127.40	-	89.64	-	-	3,972.11	3,882.47
1/14/2020	127.40	-	89.59	-	-	3,972.11	3,882.52
4/28/2020	127.38	-	89.67	-	-	3,972.11	3,882.44
7/7/2020	127.30	-	89.50	-	-	3,972.11	3,882.61
9/30/2020	127.30	-	89.74	-	-	3,972.11	3,882.37
1/13/2021	127.30	-	89.51	-	-	3,972.11	3,882.60
4/6/2021	127.30	-	89.93	-	-	3,972.11	3,882.18
7/15/2021	127.30	-	89.41	-	-	3,972.11	3,882.70
10/8/2021	127.30	-	89.55	-	-	3,972.11	3,882.56
1/11/2022	127.30	-	89.64	-	-	3,972.11	3,882.47
4/4/2022	127.30	-	89.72	-	-	3,972.11	3,882.39
10/18/2022	127.30	-	89.80	-	-	3,972.11	3,882.31
3/28/2023	127.30	-	88.15	-	-	3,972.11	3,883.96
5/24/2023	127.30	-	89.69	-	-	3,972.11	3,882.42
9/13/2023	127.30	-	89.88	-	-	3,972.11	3,882.23
11/30/2023	127.30	-	89.58	-	-	3,972.11	3,882.53

Notes:

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TOCTop of CasingAMSLAbove Mean Sea LevelBTOCBelow Top of Casing

MW-8

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	118.03	-	95.11	-	-	3,956.83	3,861.72
7/9/2019	118.03	-	95.20	-	-	3,956.83	3,861.63
10/8/2019	118.03	-	95.26	-	-	3,956.83	3,861.57
1/14/2020	118.03	-	95.21	-	-	3,956.83	3,861.62
4/28/2020	118.00	-	95.42	-	-	3,956.83	3,861.41
7/7/2020	118.02	-	95.05	-	-	3,956.83	3,861.78
9/30/2020	118.00	-	95.38	-	-	3,956.83	3,861.45
1/13/2021	118.00	-	95.44	-	-	3,956.83	3,861.39
4/6/2021	118.00	-	94.85	-	-	3,956.83	3,861.98
7/15/2021	118.00	-	94.90	-	-	3,956.83	3,861.93
10/8/2021	118.00	-	95.20	-	-	3,956.83	3,861.63
1/11/2022	118.00	-	95.27	-	-	3,956.83	3,861.56
4/4/2022	118.00	-	95.38	-	-	3,956.83	3,861.45
10/18/2022	118.00	-	95.44	-	-	3,956.83	3,861.39
3/28/2023	118.00	-	95.13	-	-	3,956.83	3,861.70
5/24/2023	118.00	-	95.13	-	-	3,956.83	3,861.70
9/13/2023	118.00	-	96.28	-	-	3,956.83	3,860.55
11/30/2023	118.00	-	94.80	-	-	3,957.83	3,863.03

#### Notes:

TOC Top of Casing AMSL Above Mean Sea Level BTOC Below Top of Casing -

MW-9

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/24/2019	133.10	-	118.86	-	-	3,936.53	3,817.67
7/9/2019	133.10	-	118.81	-	-	3,936.53	3,817.72
10/8/2019	133.10	-	118.88	-	-	3,936.53	3,817.65
1/14/2020	133.10	-	118.78	-	-	3,936.53	3,817.75
4/28/2020	133.06	-	118.88	-	-	3,936.53	3,817.65
7/7/2020	133.50	-	118.71	-	-	3,936.53	3,817.82
9/30/2020	133.50	-	118.76	-	-	3,936.53	3,817.77
1/12/2021	133.50	-	118.69	-	-	3,936.53	3,817.84
4/6/2021	133.50	-	118.73	-	-	3,936.53	3,817.80
7/15/2021	133.50	-	118.61	-	-	3,936.53	3,817.92
10/8/2021	133.50	-	118.68	-	-	3,936.53	3,817.85
1/11/2022	133.50	-	118.64	-	-	3,936.53	3,817.89
4/4/2022	133.50	-	119.18	-	-	3,936.53	3,817.35
10/18/2022	133.50	-	119.25	-	-	3,936.53	3,817.28
3/28/2023	133.50	-	118.40	-	-	3,936.53	3,818.13
5/24/2023	133.50	-	118.64	-	-	3,936.53	3,817.89
9/13/2023	133.50	-	118.89	-	-	3,936.53	3,817.64
11/30/2023	133.50	-	118.25	-	-	3,936.53	3,818.28

Notes:

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TOCTop of CasingAMSLAbove Mean Sea LevelBTOCBelow Top of Casing

MCA 357

Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	132.30	-	Dry	-	-	3,963.20	Dry
7/7/2020	132.53	-	126.70	-	-	3,963.20	3,836.50
9/30/2020	132.51	-	126.80	-	-	3,963.20	3,836.40
1/12/2021	132.51	-	126.76	-	-	3,963.20	3,836.44
4/6/2021	132.51	-	126.22	-	-	3,963.20	3,836.98
7/15/2021	132.51	-	Dry	-	-	3,963.20	Dry
10/8/2021	132.51	-	Dry	-	-	3,963.20	Dry
1/11/2022	132.51	-	Dry	-	-	3,963.20	Dry
4/4/2022	132.51	-	Dry	-	-	3,963.20	Dry
10/18/2022	132.51	-	Dry	-	-	3,963.20	Dry
3/28/2023	132.51	-	Dry	-	-	3,963.20	Dry
5/24/2023	132.51	-	124.73	-	-	3,963.20	3,838.47
9/13/2023	132.51	-	124.61	-	-	3,963.20	3,838.59
11/30/2023	132.51	-	124.10	-	-	3,963.20	3,839.10

## Notes:

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TOC Top of Casing

AMSL Above Mean Sea Level

BTOC Below Top of Casing

MW-11

MCA 357

#### Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	131.50	-	Dry	-	-	3,948.30	Dry
7/7/2020	132.88	-	Dry	-	-	3,948.30	Dry
9/30/2020	132.88	-	Dry	-	-	3,948.30	Dry
1/12/2021	132.88	-	Dry	-	-	3,948.30	Dry
4/6/2021	132.88	-	Dry	-	-	3,948.30	Dry
7/15/2021	132.88	-	Dry	-	-	3,948.30	Dry
10/8/2021	132.88	-	Dry	-	-	3,948.30	Dry
1/11/2022	132.88	-	Dry	-	-	3,948.30	Dry
4/4/2022	132.88	-	Dry	-	-	3,948.30	Dry
10/18/2022	132.88	-	Dry	-	-	3,948.30	Dry
3/28/2023	132.88	-	Dry	-	-	3,948.30	Dry
5/24/2023	132.88	-	Dry	-	-	3,948.30	Dry
9/13/2023	132.88	-	Dry	-	-	3,948.30	Dry
11/30/2023	132.88	-	Dry	-	-	3,948.30	Dry

## Notes:

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TOC Top of Casing

AMSL Above Mean Sea Level

BTOC Below Top of Casing

MW-12

MCA 357

#### Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
4/28/2020	132.00	-	Dry	-	-	3,930.91	Dry
7/7/2020	132.03	-	Dry	-	-	3,930.91	Dry
9/30/2020	132.30	-	Dry	-	-	3,930.91	Dry
1/12/2021	132.30	-	Dry	-	-	3,930.91	Dry
4/6/2021	132.30	-	Dry	-	-	3,930.91	Dry
7/15/2021	132.30	-	Dry	-	-	3,930.91	Dry
10/8/2021	132.30	-	Dry	-	-	3,930.91	Dry
1/11/2022	132.30	-	Dry	-	-	3,930.91	Dry
4/4/2022	132.30	-	Dry	-	-	3,930.91	Dry
10/18/2022	132.30	-	Dry	-	-	3,930.91	Dry
3/28/2023	132.30	-	Dry	-	-	3,930.91	Dry
5/24/2023	132.30	-	Dry	-	-	3,930.91	Dry
9/13/2023	132.30	-	Dry	-	-	3,930.91	Dry
11/30/2023	132.30	-	Dry	-	-	3,930.91	Dry

## Notes:

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TOC Top of Casing

AMSL Above Mean Sea Level

BTOC Below Top of Casing

MW-13

MCA 357

## Lea County, New Mexico

Gauging Date	Well Total Depth (feet BTOC)	PSH (feet BTOC)	Water level (feet BTOC)	PSH Thickness (feet)	PSH Elevation (feet AMSL)	TOC Elevation (feet AMSL)	Groundwater Elevation (feet AMSL)
9/30/2020	133.25	-	Dry	-	-	3,931.32	Dry
1/12/2021	133.25	-	Dry	-	-	3,931.32	Dry
4/6/2021	133.25	-	Dry	-	-	3,931.32	Dry
7/15/2021	133.25	-	Dry	-	-	3,931.32	Dry
10/8/2021	132.25	-	Dry	-	-	3,931.32	Dry
1/11/2022	132.25	-	Dry	-	-	3,931.32	Dry
4/4/2022	132.25	-	Dry	-	-	3,931.32	Dry
10/18/2022	132.25	-	Dry	-	-	3,931.32	Dry
3/28/2023	132.25	-	Dry	-	-	3,931.32	Dry
5/24/2023	132.25	-	109.20	-	-	3,931.32	3,822.12
9/13/2023	132.25	-	109.49	-	-	3,931.32	3,821.83
11/30/2023	132.25	-	109.20	-	-	3,931.32	3,822.12

#### Notes:

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TOC Top of Casing

AMSL Above Mean Sea Level

BTOC Below Top of Casing

MCA 357 (1RP-3025) Lea County, New Mexico 2023 Annual Report January 31, 2024

# APPENDIX D: HISTORICAL GROUNDWATER ANALYTICAL DATA

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### M APPENDIX D Historical Groundwater Analytical Data MW-1 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
8/17/2018	27.1	22,100	211	27,400
10/18/2018	38.4	16,000	241	31,000
1/23/2019	65.8	26,900	404	47,500
4/25/2019	-	11,000	-	34,400
7/9/2019	79	30,200	459	78,900
10/9/2019	21.9	11,400	179	27,000
1/15/2020	37.3	16,400	283	29,200
5/1/2020	79.6	37,200	490	98,200
7/9/2020	26	13,200	232	30,600
10/1/2020	16.1	8,700	161	17,500
1/14/2021	23.8	12,300	221	28,100
4/8/2021	20.8	11,000	205	27,200
7/13/2021	14.5	8,050	138	19,600
7/13/2021	18.9	10,800	191	28,000
10/8/2021	40.1	18,800	305	37,000
1/13/2022	167	55,800	756	83,200
4/7/2022	18.4	11,000	194	21,300
10/13/2022	21.7	12,400	222	27,500
3/28/2023	17.4	7,680	148	23,000
5/24/2023	69.9	29,700	453	59,300
9/13/2023	108	38,900	560	64,100 Q
11/30/2023	84.8	35,900	547	103,000

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-2 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
10/4/2017	4.6	4,620	198	7,080
1/30/2018	15.3	4,340	173	8,600
4/10/2018	16.3	4,940	227	12,100
8/17/2018	5.12	5,330	212	11,300
10/18/2018	5.13	5,160	213	10,500
1/23/2019	6.95	4,840	225	11,100
4/25/2019	-	4,870	-	14,800
7/9/2019	4.85 J	5,500	253	13,500 Q
10/9/2019	7.30 J	5,280	212	12,200
1/15/2020	9.76 J	5,120	243	9,300
4/30/2020	5.41	5,640	253	12,700
7/9/2020	8.24 J	5,610	252	13,600
10/1/2020	7.23 J	5,690	268	11,100
1/13/2021	7.42 J	5,870	263	11,900
4/7/2021	8.22 J	5,340	260	10,100
7/13/2021	8.52 J	5,300	242	13,600
10/7/2021	9.32 J	5,800	263	10,600
1/12/2022	7.04 J	5,590	269	13,900
4/6/2022	10.2	6,010	306	7,460
10/13/2022	10.4	5,440	270	9,460
3/28/2023	0.897 J	296	85	958
5/24/2023	9.31 J	5,340	290	11,400
9/13/2023	9.33 J	5,500	309	13,300
11/30/2023	7.79 J	5,450	341	14,000

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-3 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
10/4/2017	11.2	5,200	171	8,320
1/30/2018	19.6	4,210	171	8,800
4/10/2018	9.2	5,110	186	12,200
8/17/2018	9.4	4,360	170	10,400
10/18/2018	8.68	4,520	165	10,200
1/23/2019	10.3	4,560	175	11,000
4/24/2019	-	4,440	-	13,800
7/9/2019	8.42	4,740	183	12,800
10/8/2019	9.71 J	4,620	160	11,400
1/14/2020	11.9	4,340	172	9,200
4/30/2020	7.18	4,380	177	10,600
7/9/2020	10.3	4,540	178	11,000
10/1/2020	8.98 J	4,440	183	8,860
1/13/2021	9.20 J	4,550	182	9,320
4/7/2021	10.1	4,380	175	10,700
7/13/2021	10.2	4,190	162	11,100
10/7/2021	10.7	4,280	171	9,180
1/12/2022	8.81 J	4,300	180	8,380
4/5/2022	8.7	4,310	185	5,860
10/12/2022	11.5	3,870	159	7,080
3/28/2023	10.0 J	3,450	160	9,340
5/24/2023	10.2	3,590	158	8,480
9/13/2023	10.2	3,750	171	9,220
11/30/2023	6.10 J	3,800	179	9,760

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-4 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
10/4/2017	7.8	5,630	165	7,080
1/30/2018	<0.50	4,970	16.1	7,880
4/10/2018	2.52	5,490	187	12,100
8/17/2018	5.3	6,140	173	11,700
10/18/2018	4.55	5,850	171	11,600
1/23/2019	6.96	5,620	180	12,200
4/25/2019	-	5,600	-	15,700
7/9/2019	5.03	6,330	190	13,700 Q
10/9/2019	7.57 J	6,020	169	13,100
1/14/2020	9.70 J	5,530	176	9,040
4/30/2020	5.23	5,770	187	13,300
7/9/2020	8.55 J	6,170	184	13,700
10/1/2020	7.47 J	6,140	193	11,500
1/14/2021	7.42 J	6,630	195	12,900
4/8/2021	8.66 J	5,930	186	15,200
7/14/2021	8.93 J	5,880	163	15,200
10/7/2021	9.67 J	6,320	179	13,100
1/12/2022	7.82 J	6,120	181	14,700
4/6/2022	8.35	6,730	198	8,020
10/12/2022	11	6,370	174	13,800
3/28/2023	8.09 J	6,290	191	15,800
5/24/2023	10.9	6,350	172	16,100
9/13/2023	11.2	6,640	186	14,400
11/30/2023	7.04 J	7,180	203	16,700

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-5 MCA-357 Lea County, New Mexico

Sample Date	Bromide	Chloride	Sulfate	TDS
-	(mg/L)	(mg/L)	(mg/L)	(mg/L)
NMWQCC GQS	NE	250	600	1000
10/4/2017	2.3	198	125	1,820
1/30/2018	2.3	767	136	1,640
4/10/2018	0.985 J	803	149	2,160
8/17/2018	2.29	766	142	2,240
10/18/2018	2.23	909	117	2,310
1/23/2019	2.28	909	114	2,470
4/25/2019	-	849	-	3,290
7/9/2019	1.82	1,040	138	3,000
10/9/2019	1.71	807	130	2,300 J3
1/15/2020	2.22	1,050	118	1,580 J3
5/1/2020	3.04 J	1,240	130	2,740
7/9/2020	3.63 J	953	142	3,260
10/1/2020	2.94 J	773	164	2,200
1/14/2021	2.05	1,090	133	2,700
4/8/2021	1.99	1,070	109	3,630
7/14/2021	2.19	1,220	101	3,530
10/8/2021	2.28	1,140	122	2,910
1/12/2022	2.04	1,150	136	3,320
4/7/2022	4.49	1,040	152	3,530
10/13/2022	2.95	1,260	124	3,060
3/28/2023	5.61	610	154	3,290
5/24/2023	4.37 J	1,300	113	3,660
9/13/2023	4.41 J	1,420	118	4,500
11/30/2023	0.612 J	1,350	131	3,960

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

## M APPENDIX D Historical Groundwater Analytical Data MW-6 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
4/24/2019		Not Sam	pled - Dry	
7/9/2019		Not Sam	pled - Dry	
10/8/2019		Not Sam	pled - Dry	
1/14/2020		Not Sam	pled - Dry	
4/28/2020		Not Sam	pled - Dry	
7/7/2020		Not Sam	pled - Dry	
9/30/2020		Not Sam	pled - Dry	
1/13/2021		Not Sam	pled - Dry	
4/6/2021	Not Sampled - Dry			
7/14/2021	Not Sampled - Dry			
10/7/2021	Not Sampled - Dry			
1/11/2022		Not Sam	pled - Dry	
4/7/2022	Not Sampled - Dry			
10/18/2022	Not Sampled - Dry			
3/28/2023	Not Sampled - Dry			
5/24/2023	Not Sampled - Dry			
9/13/2023	Not Sampled - Dry			
11/30/2023	Not Sampled - Dry			

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-7 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
4/24/2019	-	2,060	-	6,020
7/9/2019	2.60 J	1,740	211	4,630
10/8/2019	1.08	200	97.1	763
1/14/2020	1.62	246	96.7	853
4/30/2020	1.18	239	98.1	846
7/8/2020	1.47	289	94.7	880
9/30/2020	1.08	240	111	866
1/13/2021	1.23	270	96.7	834
4/7/2021	1.33	247	92.7	858
7/15/2021	1.38	253	89.5	902
10/8/2021	1.6	528	100	1,460
1/11/2022	1.57	355	81.3	1,120
4/6/2022	1.58	291	85.5	976
10/13/2022	2.55	270	87.1	854
3/28/2023	12.2	5,140	295	14,200
5/24/2023	6.69 J	976	181	2,130
9/13/2023	4.03 J	1,010	198	2,240
11/30/2023	1.63 B	890	175	2,260

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
В	Analyte detected in associated Method Blank
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-8 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
4/24/2019	-	2,050	-	6,530
7/9/2019	2.74	2,270	104	6,620
10/8/2019	2.5	2,320	88.9	5,740
1/14/2020	2.95	2,180	99.8	4,870
4/30/2020	3.95 J	2,390	95.1	5,580
7/8/2020	6.43 J	2,330	98.6	5,750
9/30/2020	7.03 J	5,730	156	5,880
1/13/2021	4.05 J	2,160	93.2	4,890
4/7/2021	6.53 J	2,120	88.5	5,810 J3
7/15/2021	6.73 J	1,960	54	6,150
10/8/2021	7.59 J	2,320	93.1	5,100
1/13/2022	4.80 J	2,250	95.7	4,740
4/5/2022	5.18	2,340	99.3	3,420
10/12/2022	8.99	2,220	86.9	5,110
3/28/2023	7.29 J	1,950	75.9	5,090
5/24/2023	7.51 J	2,030	88.3	4,040
9/13/2023	7.52 J	2,100	95.4	6,330
11/30/2023	4.50 J	2,210	97.2	5,900

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-9 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
NMWQCC GQS	NE	250	600	1000
4/24/2019	-	5,100	-	15,800
7/9/2019	7.09	5,130	376	17,100
10/8/2019	9.26 J	5,660	353	13,200
1/14/2020	11.4	5,540	388	12,700
4/30/2020	8.51 J	6,030	423	14,500
7/8/2020	10.3	6,460	438	16,000
9/30/2020	9.03 J	6,400	461	16,900
1/12/2021	8.99 J	6,750	487	12,900
4/6/2021	9.70 J	6,540	477	14,100
7/15/2021	10.1	6,690	463	19,300
10/8/2021	11.4	6,580	495	14,300
1/12/2022	8.85 J	6,170	472	16,200
4/6/2022	11.3	6,700	526	12,800
10/12/2022	11	6,040	470	15,600
3/28/2023	10.4	5,540	460	16,300
5/24/2023	10.3	6,050	463	12,100
9/13/2023	11	6,040	470	15,600
11/30/2023	10.3	5,400	400	16,200

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

## M APPENDIX D Historical Groundwater Analytical Data MW-10 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	
NMWQCC GQS	NE	250	600	1000	
4/28/2020		Not Sam	oled - Dry		
7/8/2020	7.09	5,130	376	17,100	
9/30/2020	9.26 J	5,660	353	13,200	
1/12/2021	11.4	5,540	388	12,700	
4/6/2021	8.51 J	6,030	423	14,500	
7/15/2021	Not Sampled - Dry				
10/8/2021		Not Sampled - Dry			
1/11/2022		Not Sampled - Dry			
4/6/2022		Not Sampled - Dry			
10/18/2022		Not Sam	oled - Dry		
3/28/2023	Not Sampled - Dry				
5/24/2023	10.3	5,950	482	17,300	
9/13/2023	7.22 J	1,910	52.1 B	4,590	
11/30/2023	7.77 J	1,680	52	4,920	

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
В	Analyte detected in associated Method Blank
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-11 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	
NMWQCC GQS	NE	250	600	1000	
4/28/2020		Not Sam	pled - Dry		
7/7/2020		Not Sam	pled - Dry		
9/30/2020		Not Sam	pled - Dry		
1/12/2021		Not Sam	pled - Dry		
4/6/2021		Not Sam	pled - Dry		
7/15/2021	Not Sampled - Dry				
10/8/2021	Not Sampled - Dry				
1/11/2022	Not Sampled - Dry				
4/6/2022	Not Sampled - Dry				
10/18/2022	Not Sampled - Dry				
3/28/2023	Not Sampled - Dry				
5/24/2023	Not Sampled - Dry				
9/13/2023	Not Sampled - Dry				
11/30/2023		Not Sam	pled - Dry		

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

### M APPENDIX D Historical Groundwater Analytical Data MW-12 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	
NMWQCC GQS	NE	250	600	1000	
4/28/2020		Not Sam	pled - Dry		
7/7/2020		Not Sam	pled - Dry		
9/30/2020		Not Sam	pled - Dry		
1/12/2021		Not Sam	pled - Dry		
7/15/2021		Not Sampled - Dry			
10/8/2021	Not Sampled - Dry				
1/11/2022	Not Sampled - Dry				
4/6/2022	Not Sampled - Dry				
10/18/2022	Not Sampled - Dry				
3/28/2023	Not Sampled - Dry				
5/24/2023	Not Sampled - Dry				
9/13/2023	Not Sampled - Dry				
11/30/2023		Not Sam	pled - Dry		

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

## M APPENDIX D Historical Groundwater Analytical Data MW-13 MCA-357 Lea County, New Mexico

Sample Date	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	
NMWQCC GQS	NE	250	600	1000	
9/30/2020		Not Sam	pled - Dry		
1/12/2021		Not Sam	pled - Dry		
7/15/2021		Not Sam	pled - Dry		
10/8/2021		Not Sampled - Dry			
1/11/2022		Not Sampled - Dry			
4/6/2022		Not Sampled - Dry			
10/18/2022		Not Sampled - Dry			
3/28/2023		Not Sam	pled - Dry		
5/24/2023	9.30 J	1,380	210	3,730 Q	
9/13/2023	6.72	1,460	220	3,190	
11/30/2023	4.59	1,610	216	3,680	

TDS	Total Dissolved Solids
NMWQCC	New Mexico Water Quality Control Commission
GQS	Groundwater Quality Standards
J	The identification of the analyte is acceptable; the reported value is an estimate
J3	The associated QC was outside the established quality control range for precision
NE	Regulatory Guideline Not Established
Q	Sample was prepared and/or analyzed past method holding time
-	Not Analyzed
	Result exceeds NMWQCC groundwater quality standards

MCA 357 (1RP-3025) Lea County, New Mexico 2023 Annual Report January 31, 2024

# **APPENDIX E: MONITOR WELL CONSTUCTION AND LOCATIONS**

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#### Apppendix E 2023 Montior Well Construction and Locations MCA 357 Lea County, New Mexico

arial	Date Drilled/Installed	Latitude	Longitude	Amount of Screen (ft)	Amount of Riser (ft)	Total Depth (ft bgs)
MW-1	12/9/2014	32.802341	-103.771269	Unknown	Unknown	100
MW-2	9/22/2017	32.804007	-103.771749	40.0	65.0	105
MW-3	9/25/2017	32.801499	-103.769706	40.0	75.0	115
MW-4	9/22/2017	32.800491	-103.771392	40.0	60.0	100
MW-5	9/22/2017	32.802330	-103.773167	40.0	70.0	110
MW-6	4/18/2019	32.803219	-103.775706	40.0	85.0	125
MW-7	4/18/2019	32.805509	-103.771091	40.0	85.0	125
MW-8	4/18/2019	32.801667	-103.767232	30.0	85.0	115
MW-9	4/19/2019	32.798125	-103.771169	40.0	90.0	130
MW-10	4/28/2020	32.801497	-103.764781	40.0	90.0	130
MW-11	4/28/2020	32.796530	-103.766164	40.0	90.0	130
MW-12	4/28/2020	32.794681	-103.771208	40.0	90.0	130
MW-13	9/28/2020	32.797114	-103.775645	40.0	90.0	130

Notes:

BTOC: Below Top of Casing

AMSL: Above Mean Sea Level

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

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

District III

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

District IV

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

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

CONDITIONS

Action 316675

CONDITIONS			
Operator:	OGRID:		
Maverick Permian LLC	331199		
1000 Main Street, Suite 2900	Action Number:		
Houston, TX 77002	316675		
	Action Type:		
	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)		

CONDITIONS		
Created By	Condition	Condition Date
michael.buchanan	Review of the 2023 Annual Report MCA 357 (1RP-3025) for groundwater: Content Satisfactory 1. Maverick has approval to move sampling events from quarterly to semi-annual. 2. If monitoring wells: MW-12, MW-11 and MW-6 continue to remain dry during sampling events, Maverick must propose a contingency plan; for example, return in 30 days to attempt sampling dry wells again, or drilling deeper to reach water level, etc. 3. Continue groundwater monitoring and submit the 2024 Annual Report by April 1, 2025.	4/23/2024