

**2024 ANNUAL GROUNDWATER MONITORING  
AND CORRECTIVE ACTION REPORT  
COAL COMBUSTION RESIDUALS (CCR) RULE**

**SAMMIS POWER STATION  
JEFFERSON COUNTY, OHIO**

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## **ABBREVIATIONS/ACRONYMS**

ASD	Alternative Source Demonstration
CCR	Coal Combustion Residuals
ETEM	ETEM Remediation One LLC
FTS	Field & Technical Services LLC
ft/yr	Feet per Year
GWPS	Groundwater Protection Standard
Impoundments	North and South Surface Impoundments
MCL	Maximum Contaminant Level
mg/L	Milligrams Per Liter
pCi/L	PicoCurie Per Liter
Site	Sammis Power Station, Jefferson County, Ohio
SSI	Statistical Significant Increase
SSL	Statistical Significant Level
TDS	Total Dissolved Solids
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency





## EXECUTIVE SUMMARY

This report summarizes groundwater monitoring activities completed between January 1 and December 31, 2024, at the Coal Combustion Residuals (CCR) North and South Surface Impoundments (Impoundments) at the ETEM Remediation One LLC (ETEM) Sammis Power Station (Site) as required by 40 CFR 257.90(e) of the United States Environmental Protection Agency (USEPA) CCR Rule. Illustrations presenting the Site location and Site layout are presented as Figures 1 and 2, respectively.

Detection of Appendix III constituents at concentrations representing statistically significant increases (SSIs) over background levels required the shift of groundwater monitoring from detection to assessment monitoring in 2018 and a notification was posted to the publicly accessible website as required by 40 CFR 259.94(e)(3). Assessment monitoring of groundwater at the Impoundments unit was initiated in March 2018 because SSIs of the Appendix III constituents boron, calcium, chloride, sulfate, and total dissolved solids (TDS) were reported in downgradient monitoring wells MW-4, MW-5, and MW-6.

Assessment monitoring was ongoing at the start and the end of the current annual reporting period (2024).

Assessment groundwater monitoring data have reported the detection of the Appendix IV constituent cobalt in downgradient well MW-6. Per CCR rule requirements, a groundwater protection standard (GWPS) for this constituent was established by the July 2018 revision to 40 CFR 257.95 of the CCR Rule. This revision set the GWPS for cobalt to 0.006 milligrams per liter (mg/L). Semiannual assessment monitoring data were tested for whether detected concentrations represented statistically significant levels (SSLs) above the GWPS. SSLs identified in the 2024 annual reporting period are as follows:

Appendix IV Constituent	Downgradient Well with SSL over GWPS
Cobalt	MW-6

Cobalt was first identified at an SSL in MW-6 in 2019 and an alternative source demonstration (ASD) was completed which demonstrated that an alternate source was responsible for the SSL. An ASD update has been prepared for each subsequent monitoring event in which this SSL persisted. The original ASD and subsequent updates were posted to the facility operating record as required by 40 CFR 257.95(g)(3).





Other activities and conditions for the 2024 annual reporting period include:

- Semiannual groundwater assessment monitoring events were conducted April 29 through May 2, 2024 and October 22 through 24, 2024. Monitoring involved sampling of two upgradient monitoring wells (MW-1 and MW-9) and five downgradient monitoring wells (MW-2, MW-3, MW-4, MW-5, and MW-6);
- ETEM completed additional ASD and groundwater characterization investigations in 2024.

Anticipated activities for the next annual reporting period include:

- Completion of two semiannual assessment mode groundwater monitoring events.



## **1.0 INTRODUCTION**

On behalf of ETEM Remediation One LLC (ETEM), Field & Technical Services, LLC (FTS) has prepared this Annual Groundwater Monitoring and Corrective Action Report for the Sammis Power Station (Site), located in Stratton, Ohio. Ownership of the Site was transferred from Energy Harbor Generation LLC to ETEM in September 2023. Energy Harbor, or its predecessors, completed compliance activities prior to ETEM's acquisition of the Site. This report was prepared as required by CFR 40 CFR 257.90(e) of the United States Environmental Protection Agency (USEPA) Coal Combustion Residuals (CCR) Rule, which requires annual groundwater monitoring and corrective action reports to include the information listed below:

- 1) A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit (Figure 2);
- 2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken. Monitoring wells MW-15 and MW-16 were installed in 2024 (Section 3.0) to support an alternate source demonstration (ASD) update. No monitoring wells were decommissioned in 2024;
- 3) In addition to all the monitoring data obtained under 40 CFR 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs (referenced in Section 2.3 and presented in full in Appendix A);
- 4) A narrative discussion of any transition between monitoring programs (no program transitions took place in 2024 as reported in Section 2.0); and
- 5) Other information required to be included in the annual report as specified in 40 CFR 257.90 through 257.98 (i.e., groundwater monitoring results, alternative sources, and extension of schedules) (ASD investigation updates are provided in Section 4.0).



## **2.0 SITE BACKGROUND**

The Site is situated on the western shoreline of the Ohio River in Jefferson County, Ohio, immediately north of the town of Stratton. The United States Army Corps of Engineers (USACE) New Cumberland Lock and Dam structure is located adjacent to the east. A general location map of the Site is provided as Figure 1.

The Sammis Power Station is a coal-fired power plant that began operations in 1959. The plant ceased energy production in 2023 and decommissioning activities are currently ongoing. There are two settlement ponds on-Site that have been identified as surface impoundments subject to the CCR Rule because they were used for temporary storage of a CCR, namely sluiced bottom ash. The Impoundments are adjacent to each other, separated by a berm. For the purposes of the CCR Rule, a single multi-unit groundwater system monitors both ponds. CCR material that was placed in the North and South Impoundments when the plant was operating has been removed. The North Impoundment was retrofitted with an engineered liner system in accordance with the provisions of 40 CFR 257.102(k) in 2021. The South Impoundment was initially planned to be retrofitted; however, due to changes in plant operations, the South Pond was clean closed in 2023.



### 3.0 2024 ACTIVITIES SUMMARY

Assessment monitoring was ongoing at the start and the end of the current annual reporting period (2024). The first semiannual 2024 assessment monitoring sampling event was performed on April 29 through May 2, 2024. The second semiannual 2024 assessment monitoring sampling event was performed on October 22 through 24, 2024. All seven CCR program wells were sampled during the April/May and October 2024 events. In addition, two piezometers (P-1 and P-2) and eight additional characterization monitoring wells (MW-10D, MW-11S, MW-11D, MW-13S, MW-13BR, MW-14S, MW-15, and MW-16) were sampled in April/May and October 2024 as part of ongoing ASD evaluations. Additional characterization monitoring well MW-12S was inaccessible due to a weigh station scale being placed over the flush mount and therefore could not be gauged or sampled during either the first or the second semiannual 2024 events. These locations have not been formally added to the CCR groundwater monitoring network.

The CCR groundwater monitoring system consists of two upgradient monitoring wells (MW-1 and MW-9) and five downgradient monitoring wells (MW-2, MW-3, MW-4, MW-5, and MW-6). Monitoring well locations are shown on Figure 2. Table 1 contains information regarding well locations, pump depths, and construction details. Each well in the CCR groundwater monitoring well network was installed into the upper portion of the uppermost usable aquifer underlying the Site. At the Site, the uppermost aquifer is encountered in unconsolidated sand and gravel of the Ohio River buried valley aquifer.

Piezometers P-1 and P-2 were sampled in 2024 as part of ASD evaluations but have not been added to the CCR groundwater monitoring well network. Monitoring wells installed in 2019 and 2020 (MW-10D, MW-11S, MW-11D, MW-12S, MW-13S, MW-13BR, and MW-14S) and monitoring wells installed in 2024 (MW-15 and MW-16) were also sampled as part of ASD evaluations in accordance with 40 CFR 257.95(g)(1) but have not been added to the CCR groundwater monitoring well network. Details regarding the establishment of the monitoring well system are presented in the *Hydrogeologic Investigation Report* and *Groundwater Monitoring System Certification* document both dated October 2017.

A comprehensive round of groundwater elevations was measured within a 24-hour time period to avoid temporal variations in groundwater flow in accordance with 40 CFR 257.93(c). Monitoring wells were sampled using low-flow sampling methods in accordance with the *Groundwater Evaluation Work Plan* dated April 2016 (AECOM, 2016). All wells were sampled for Appendix III and Appendix IV parameters in accordance with 40 CFR 257.95(d)(1).





## **4.0 MONITORING RESULTS**

The following sections present details about the CCR monitoring system review, groundwater flow evaluations, groundwater sampling results, and ASD results for the April and October 2024 events.

### **4.1 GROUNDWATER FLOW**

Water level data and calculated groundwater elevations for 2024 are presented in Table 2 and groundwater flow maps for the 2024 monitoring period are included as Figures 4A and 4B. All wells were measured during the April and October 2024 events.

The aquifer is characterized by high groundwater flow rates in the vicinity of the impoundments. Groundwater flow rates and directions observed in the upper aquifer at the Site are influenced by the adjacent New Cumberland Lock and Dam. The upper pool of the Ohio River acts as a losing stream and the lower pool acts as a gaining stream with respect to interactions with the adjacent alluvial aquifer. Groundwater flow from the hillside discharges into the alluvial aquifer and is diluted along the flow path as advective mixing occurs.

Groundwater beneath the impoundments can originate from three different flow paths that consist of 1) upper pool Ohio River surface water, 2) upgradient alluvial aquifer groundwater, or 3) groundwater discharge from the hillside. Groundwater from these three flow paths converges beneath the impoundments as shown on Figures 4A and 4B. The United States Army Corps of Engineers Lock is hydraulically sealed and acts as a flow barrier, and groundwater flows around the lock and dam toward the lower pool of the Ohio River.

### **4.2 SAMPLING RESULTS**

Analytical results from April/May and October 2024 assessment monitoring events are summarized in Table 3 with the full laboratory reports available in Appendix A. The data were generally consistent with previous analytical results. MW-6 cobalt data was the only SSL identified at the Site; however, this SSL has been attributed to an alternative source based on previous ASD investigations.

Cobalt concentrations at MW-5 were reported at 0.0032 J (April 2024) and 0.0023 J mg/L (October 2024). Both of the 2024 MW-5 samples yielded cobalt concentrations less than the GWPS of 0.006 mg/L. Additionally, the MW-5 cobalt lower confidence limit of the mean is less than the GWPS. Cobalt concentrations at MW-6 were reported at concentrations of 0.01 mg/L (May 2024) and 0.0085 mg/L (October 2024), the October 2024 result was the lowest reported concentration since July 2017. Cobalt





concentrations at MW-6 have remained above the established GWPS since Baseline Monitoring began in July 2016.

#### **4.3 ALTERNATIVE SOURCE DEMONSTRATION UPDATE**

During the April/May and October 2024 assessment monitoring events, groundwater samples were also collected from supplemental ASD monitoring wells MW-10D, MW-11S, MW-11D, MW-13S, MW-13BR, MW-14S, MW-15, and MW-16 as presented in Table 3. Cobalt was detected in all ASD wells. Additional characterization monitoring well MW-12S was inaccessible due to a weigh station scale being placed over the flush mount and therefore could not be gauged or sampled during either the first or the second semiannual 2024 events. The results of laboratory analysis of these samples are presented in Appendix A. The ASD monitoring well data is consistent with previous findings that groundwater west of the impoundments serves as an alternative source of cobalt in MW-6 samples. The area west of the impoundments is upgradient of MW-6, which is the only downgradient monitoring well with cobalt SSLs.

Supplemental investigation work was completed in 2024 to support ASDs, further characterize groundwater flow, and enhance the conceptual Site model. Supplemental investigation work was documented in an ASD Update report that was prepared in July 2024.



## **5.0 GENERAL INFORMATION**

The following sections summarize any problems encountered in the CCR program through 2024, any resolutions to those problems, if needed, and upcoming actions planned for 2025.

### **5.1 PROBLEMS ENCOUNTERED AND RESOLUTIONS**

No issues were encountered under the groundwater monitoring program for the Site in 2024.

### **5.2 ACTIONS PLANNED FOR 2025**

The following CCR groundwater compliance activities are planned for 2025:

- Continue with groundwater semiannual assessment monitoring events [per 40 CFR 257.95(b) and (d)(1)] inclusive of non-CCR program wells for use in ASD efforts.
- Evaluate groundwater sample data and identify any new SSLs.
- Complete additional ASD and groundwater characterization investigations, as appropriate.



## 6.0 REFERENCES

AECOM, April 2016. *Groundwater Evaluation Work Plan Coal Combustion Residuals (CCR) Rule (Work Plan)*, W.H. Sammis Power Station, April 7, 2016.

AECOM, October 2017. *Coal Combustion Residuals Rule Groundwater Monitoring System Certification*. W.H. Sammis Power Station, October 17, 2017.

AECOM, October 2017. *Coal Combustion Residuals Rule Statistical Methods Certification*, W.H. Sammis Power Station, North and South Impoundments, October 17, 2017.

AECOM, October 2017. *Hydrogeologic Investigation Report Coal Combustion Residuals (CCR) Rule*, W.H. Sammis Power Station, October 13, 2017.

Geosyntec Consultants, *Closure Plan - W.H. Sammis Coal Plant North and South Ponds*, Stratton Ohio, October 17, 2016.

Key Environmental, Inc., July 2024. *Alternative Source Demonstration Update*. W.H. Sammis Power Station.

United States Environmental Protection Agency, 2015. Part 257 Coal Combustion Residuals Rule, last amended December 29, 2023



## **TABLES**



Table 1  
Monitoring Well Construction Summary  
2024 Annual Groundwater Monitoring and Corrective Action Report  
Coal Combustion Residuals (CCR) Rule  
Sammis Power Station  
Jefferson County, Ohio

Well ID		Easting	Northing	Well Installation Date	TOC Elevation (ft MSL)	Ground Surface Elevation (ft MSL)	Total Depth (ft BTOC)	Bottom Elevation (Ft MSL)	Screen Length (ft)	Top of Screen (ft BTOC)	Bottom of Screen (ft BTOC)	Top of Screen Elevation (ft MSL)	Bottom of Screen Elevation (ft MSL)	Pump Depth (ft BTOC)	Well Casing Material	Well Screen Material and Slot Size	Groundwater Flow Location	Program Use
MW-1	CCR Monitoring Network	319594.250	2488142.815	Apr-16	690.99	691.54	56.73	634.26	10	46.73	56.73	644.26	634.26	51.73	2-inch schedule 40 PVC	2-inch Schedule 40 PVC and 0.01 inch slot	Upgradient /Background	Assessment
MW-2		319386.798	2488309.959	May-16	693.91	694.21	59.71	634.20	10	49.71	59.71	644.20	634.20	54.71			Downgradient	
MW-3		318989.431	2488433.617	May-16	696.87	697.27	64.63	632.24	10	54.63	64.63	642.24	632.24	59.63			Downgradient	
MW-4		318785.151	2488456.104	May-16	687.83	688.17	58.03	629.80	10	48.03	58.03	639.80	629.80	53.03			Downgradient	
MW-5		318662.448	2488233.321	May-16	688.07	688.44	60.06	628.01	10	50.06	60.06	638.01	628.01	55.06			Downgradient	
MW-6		318625.768	2488029.139	May-16	690.70	691.04	65.02	625.68	10	55.02	65.02	635.68	625.68	60.02			Downgradient	
MW-7*	Potentiometry	320097.571	2487659.078	May-16	690.14	690.51	59.98	630.16	10	49.98	59.98	640.16	630.16	54.98			Upgradient/Background	Water Level/Flow Evaluation
MW-8*		319133.390	2488114.800	Apr-16	695.98	696.25	59.94	636.04	10	49.94	59.94	646.04	636.04	54.94			Downgradient	
P-1		317926.770	2488076.330	May-16	687.46	687.77	64.82	622.64	10	54.82	64.82	632.64	622.64	59.82			Downgradient	
P-2		318880.198	2487810.501	May-16	694.11	694.32	63.99	630.12	10	53.99	63.99	640.12	630.12	58.99			Downgradient	
MW-10D	ASD Expansion Wells	319385.796	2487827.158	Apr-16	692.33	692.58	59.84	632.49	10	49.84	59.84	642.49	632.49	54.84			Upgradient	ASD Evaluation
MW-11S		319025.808	2487636.845	Sep-19	697.14	697.42	89.72	607.42	10	75.72	85.72	621.42	611.42	NA			Downgradient	
MW-11D		318962.459	2487742.386	Sep-19	693.98	694.39	69.59	624.39	10	54.59	64.59	639.39	629.39	NA			Downgradient	
MW-12S		318957.768	2487744.410	Sep-19	694.22	694.60	94.62	599.60	10	78.62	88.62	615.60	605.60	NA			Downgradient	
MW-13S		319477.005	2487485.068	Jan-20	692.09	692.43	80.00	612.09	10	55.00	65.00	637.09	627.09	NA			Upgradient	
MW-13BR		319648.511	2487420.558	Jul-20	690.99	691.26	65.72	625.27	10	54.74	64.74	636.25	626.25	NA			Upgradient	
MW-14S		318875.334	2487489.809	Jan-20	702.24	702.66	98.17	603.92	10	80.67	90.67	621.42	611.42	NA			Upgradient	
MW-15		319750.026	2487594.223	Jul-20	688.69	689.25	68.74	619.95	10	54.74	64.74	633.95	623.95	NA			Upgradient	
MW-16		318676.170	2488406.517	Apr-24	686.79	687.00	50.50	636.29	5	55.50	50.50	641.29	636.29	NA			Downgradient	
		319922.033	2487229.093	Apr-24	694.62	694.87	46.50	648.12	10	56.50	46.50	658.12	648.12	NA			Upgradient	

Notes:  
TOC - Top of Casing  
ft MSL - feet above Mean Sea Level  
ft BTOC - feet below top of casing  
PVC - Polyvinyl Chloride  
NA Dedicated bladder pump not installed  
\* Excluded from the CCR Network after Baseline Sampling (to be used for water levels only)



**Table 2**  
**Monitoring Well Groundwater Elevations**  
**2024 Annual Groundwater Monitoring and Corrective Action Report**  
**Coal Combustion Residuals (CCR) Rule**  
**Sammis Power Station**  
**Jefferson County, Ohio**

Well ID			Assessment Monitoring Event		Assessment Monitoring Event	
		Date	4/29/2024		10/22-23/2024	
		TOC Elevation	DTW (feet)	Elevation (feet, msl)	DTW (feet)	Elevation (feet, msl)
MW-1	CCR Monitoring Network	691.82	35.51	656.31	34.37	657.45
MW-2		693.91	39.60	654.31	38.50	655.41
MW-3		696.87	44.19	652.68	43.82	653.05
MW-4		687.83	36.10	651.73	36.62	651.21
MW-5		688.07	36.23	651.84	36.74	651.33
MW-6		690.70	38.50	652.20	38.93	651.77
MW-9		690.14	31.89	658.25	30.99	659.15
P1*	Potentiometry	694.11	40.30	653.81	40.19	653.92
P2*		692.33	36.55	655.78	35.84	656.49
MW-7*		695.98	41.32	654.66	41.92	654.06
MW-8*		687.46	37.63	649.83	37.63	649.83
MW-10D	ASD Expansion Wells	697.42	42.50	654.92	42.46	654.96
MW-11S		694.39	39.81	654.58	39.79	654.60
MW-11D		694.60	40.01	654.59	39.97	654.63
MW-12S		692.09	NM	NM	NM	NM
MW-13S		690.99	34.11	656.88	33.56	657.43
MW-13BR		702.09	44.61	657.48	46.80	655.29
MW-14S		688.69	31.79	656.90	31.04	657.65
MW-15		686.79	35.43	651.36	35.42	651.37
MW-16		694.62	22.13	672.49	24.57	670.05

**Notes:**

TOC = Top of casing

msl = mean sea level

DTW = Depth to water

NM = Not measured, no access

\* Excluded from the CCR Network after Baseline Sampling (to be used for water levels only)



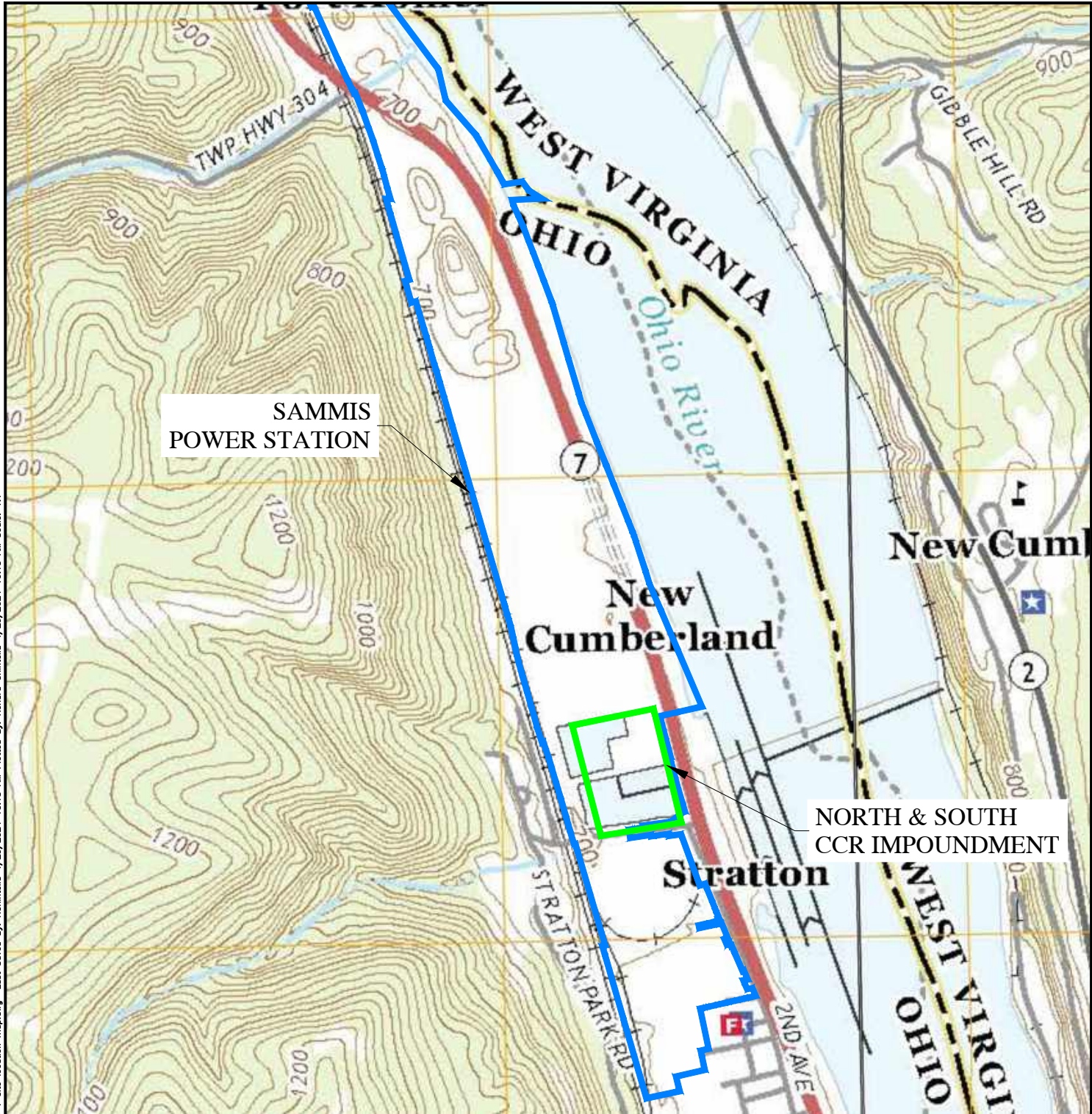
Table 3  
Groundwater Analytical Results  
2024 Annual Groundwater Monitoring and Corrective Action Report  
Coal Combustion Residuals (CCR) Rule  
Sammis Power Station  
Jefferson County, Ohio

			Appendix III Constituents								Appendix IV Constituents																														
		Analyte Name	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt*	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium Combined†**																	
		Units	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L																	
		MCL	NE	NE	NE	4	SU	NE	NE	0.006	0.01	2	0.004	0.005	0.1	0.006	4	0.015	NE	0.002	NE	0.05	0.002	5																	
Downgradient Wells																																									
MW-2	Assessment Monitoring	4/29/2024	0.062	39	37	1	U	7.28	52.2	230	0.005	U	0.00057	J	0.034	0.002	U	0.002	U	0.0058	J+	0.005	U	1	U	0.0003	J	0.002	J	0.0002	U	0.00081	J	0.005	U	0.00021	J	0.55			
		10/23/2024	0.05	48	29.3	0.154		7.04	70.6	270	0.005	U	0.00021	J	0.055	0.002	U	0.002	U	0.0052	0.0013	J	0.154	0.0036	J	0.0045	J	0.0002	U	0.00064	J	0.00078	J	0.005	U	4.004					
MW-3		4/30/2024	0.08	J+	39	38.4	0.258	7.4	59.8	230	0.005	U	0.0002	J	0.033	0.002	U	0.002	U	0.005	U	0.005	U	0.258	0.005	U	0.01	U	0.0002	U	0.00041	J	0.005	U	0.005	U	4.92				
		10/22/2024	0.053		45	29.7	0.164	7.15	67.6	280	0.005	U	0.005	U	0.035	0.002	U	0.002	U	0.005	U	0.005	U	0.164	0.005	U	0.0031	J	0.0002	U	0.00052	J	0.005	U	0.005	U	0.851				
MW-4		4/30/2024	0.16	J+	43	44.5		7.78	67.6	250	0.005	U	0.00021	J	0.033	0.002	U	0.002	U	0.005	U	0.005	U	0.339	0.005	U	0.0018	J	0.0002	U	0.005	U	0.005	U	0.005	U	1.506	U			
		Duplicate	0.17	J+	43	43.7	0.328	NA	65.7	250	0.005	U	0.005	U	0.033	0.002	U	0.002	U	0.005	U	0.005	U	0.328	0.005	U	0.0018	J	0.0002	U	0.005	U	0.00056	J	0.005	U	1.22				
MW-5		10/23/2024	0.11		47	35.7	0.236	7.17	74.7	300	0.005	U	0.00022	J	0.036	0.002	U	0.002	U	0.001	J	0.005	U	0.236	0.005	U	0.0028	J	0.0002	U	0.005	U	0.005	U	0.005	U	1.24				
		4/30/2024	0.087	J+	55	53.1	0.335	7.98	172	380	0.005	U	0.00019	J	0.023	0.002	U	0.00025	J	0.005	U	0.0032	J	0.335	0.005	U	0.0021	J	0.00019	J	0.005	U	0.005	U	0.005	U	-0.012	U			
MW-6		10/23/2024	0.072		50	44.5	0.204	6.52	134	350	0.005	U	0.005	U	0.019	0.002	U	0.0002	J	0.005	U	0.0023	J	0.204	0.005	U	0.0022	J	0.00019	J	0.005	U	0.005	U	0.005	U	0.97				
		5/1/2024	0.13		63	60.4	1	U	6.45	259	440	0.005	U	0.00023	J	0.013	0.002	U	0.00024	J	0.005	U	0.01	1	U	0.005	U	0.01	U	0.0002	U	0.005	U	0.005	U	0.00017	J	0.259	U		
MW-6		10/23/2024	0.1		61	14.9	0.1	U	5.67	52	480	0.005	U	0.005	U	0.014	0.002	U	0.00022	J	0.005	U	0.0085	0.1	U	0.005	U	0.0021	J	0.0002	U	0.005	U	0.005	U	0.005	U	2.4292	U		
Upgradient Wells																																									
MW-1	Assessment Monitoring	5/1/2024	0.077		44	108	0.279	6.99	135	240	0.005	U	0.00036	J	0.039	0.002	U	0.002	U	0.00064	J	0.005	U	0.279	0.005	U	0.01	U	0.0002	U	0.005	U	0.005	U	0.005	U	3.11				
		10/23/2024	0.058		44	33.6	0.237	6.9	72.5	290	0.005	U	0.00034	J	0.037	0.002	U	0.002	U	0.005	U	0.005	U	0.237	0.005	U	0.0022	J	0.0002	U	0.00047	J	0.005	U	0.005	U	1.125	U			
MW-9		Duplicate	0.059		44	33.7	0.24	NA	73.1	300	0.005	U	0.0003	J	0.037	0.002	U	0.002	U	0.00062	J	0.005	U	0.24	0.005	U	0.002	J	0.0002	U	0.00044	J	0.005	U	0.005	U	5.97				
		4/30/2024	0.3		60	69.4	0.241	7.42	95.6	360	0.005	U	0.00026	J	0.037	0.002	U	0.002	U	0.00078	J	0.005	U	0.241	0.005	U	0.0028	J	0.0002	U	0.00081	J	0.00089	J	0.00016	J	0.2511	U			
MW-9		10/23/2024	0.16		51	36.7	0.131	7.41	70.6	320	0.005	U	0.005	U	0.03	0.002	U	0.002	U	0.005	U	0.005	U	0.131	0.005	U	0.0039	J	0.0002	U	0.0007	J	0.005	U	0.005	U	0.79				
Piezometers																																									
P-1	ASD Evaluation	4/30/2024	0.15	J+	70	65.4	0.143	4.96	327	570	0.005	U	0.00079	J	0.013	0.00018	J	0.0005	J	0.005	U	0.019	0.143	0.005	U	0.0041	J	0.0002	U	0.005	U	0.005	U	0.005	U	0.576					
		10/24/2024	0.14		67	66.8	0.1	U	4.85	313	520	0.005	U	0.00089	J	0.014	J+	0.00017	J	0.00044	J	0.005	U	0.017	0.1	U	0.00026	J	0.0043	J	0.0002	U	0.005	U	0.00017	J	3	J+			
P-2		5/1/2024	0.076		46	40.6	1	U	6.71	90.8	270	0.005	U	0.00023	J	0.026	0.002	U	0.002	U	0.005	U	0.0011	J	1	U	0.005	U	0.01	U	0.0002	U	0.005	U	0.005	U	0.1344	U			
		10/23/2024	0.058		48	35.9	0.265	7	80.1	310	0.005	U	0.005	U	0.029	0.002	U	0.002	U	0.005	U	0.00066	J	0.265	0.005	U	0.0027	J	0.0002	U	0.005	U	0.005	U	0.005	U	0.878	U			
ASD Expansion Wells																																									
MW-10D	ASD Evaluation	5/1/2024	0.19	J	150	1440	1	U	7.6	21.2	2400	0.005	U	0.0044	J	2.2	0.002	U	0.002	U	0.008	0.00055	J	1	U	0.00024	J	0.021	0.0002	U	0.0034	J	0.005	U	0.005	U	5.64				
		10/24/2024	0.2		190	2000	0.109	7.51	1	U	3600	0.005	U	0.0046	J	4.7	0.002	U	0.002	U	0.0032	J	0.00061	J	0.109	0.005	U	0.027	0.0002	U	0.0043	J	0.005	U	0.005	U	3.3	J+			
MW-11S		5/1/2024	0.16		170	81.9	1	U	7.33	373	810	0.005	U	0.0088		0.035	0.002	U	0.002	U	0.0012	J	0.0098	1	U	0.005	U	0.011	0.0002	U	0.00039	J	0.005	U	0.00025	J	5.482				
		Duplicate	0.16		170	82.4	1	U	NA	361	800	0.005	U	0.0086		0.035	0.002	U	0.002	U	0.0013	J	0.0094	1	U	0.005	U	0.011	0.0002	U	0.005	U	0.005	U	0.005	U	0.67	U			
MW-11D		10/24/2024	0.17		160	73.2	0.1	U	6.94	318	810	0.005	U	0.0085		0.032	0.002	U	0.002	U	0.001	J	0.0092	0.1	U	0.00039	J	0.012	0.0002	U	0.00053	J	0.005	U	0.005	U	2.86	J+			
		5/1/2024	0.16		82	183	0.879	J	6.03	427	600	0.005	U	0.00085	J	0.017	0.00037	J	0.0013	J	0.0051	0.044	0.879	J	0.005	U	0.012	0.0002	U	0.005	U	0.005	U	0.005	U	2.202					
MW-12S		10/24/2024	0.17		76	67.9	0.123	4.82	301	590	0.005	U	0.0007	J	0.015	J+	0.00037	J	0.0012	J	0.005	U	0.039	0.123	0.00032	J	0.012	0.0002	U	0.005	U	0.005	U	0.005	U	2.53	J+				
MW-13S		5/2/2024	No Access																																						
		10/24/2024	No Access																																						
MW-13S		ASD Evaluation	5/1/2024	0.12		130	75.7	0.1	U	7.02	297	640	0.005	U	0.052		0.16	0.002	U	0.0029		0.001	J	0.0037	J	1	U	0.00074	J	0.0082	J	0.0002	U	0.0036	J	0.005	U	0.005	U	1.25	
			10/24/2024	0.13		130	74.2	0.1	U	6.95	273	720	0.005	U	0.048		0.15	0.002	U	0.0022		0.0009	J	0.0043	J	0.1	U	0.00061	J	0.0088	J	0.0002	U	0.0032	J	0.005	U	0.005	U	2.9	J+
MW-13BR			5/1/2024	0.26		4	29	1.41	8.79	3.6	380	0.005	U	0.0034	J	0.081	0.002	U	0.002	U	0.0014	J	0.0003	J	1.41	0.005	U	0.0045	J	0.0002	U	0.00023	J	0.00053	J	0.005	U	0.005	U	0.738	
	10/24/2024		0.25		4.8	45.7	1.29	8.14	6.55	430	0.005	U	0.0031	J	0.069	0.002	U	0.002	U	0.0018	J	0.005	U	1.29	0.005	U	0.0056	J	0.0002	U	0.00041	J	0.005	U	0.005	U	3.766	J+			
MW-14S	Duplicate		0.25		4.7	47.5	1.35	NA	6.67	400	0.005	U	0.0033	J	0.068	0.002	U	0.002	U	0.0018	J	0.005	U	1.35	0.005	U	0.0055	J	0.0002	U	0.0039	J	0.005	U	0.005	U	1.374	U			
	4/30/2024		0.066	J+	69	54.8	0.363	7.29	108	340	0.005	U	0.00068	J	0.041	0.002	U	0.002	U	0.00077	J	0.00051	J	0.363	0.00061	J	0.0034	J	0.0002	U	0.00035	J	0.005	U	0.005	U	0.708				
MW-15	10/24/2024		0.068		68	48.7	0.166	7.24	102	400	0.005	U	0.00057	J	0.041	0.002	U	0.002	U	0.0005	U	0.0008	J	0.166	0.00035	J	0.0041	J	0.0002	U	0.00047	J	0.005	U	0.005	U	3.29	J+			
	5/2/2024		0.12		45	26.6	1	U	8.12	47.7	270	0.005	U	0.005	U	0.033	0.002	U	0.002	U	0.01	0.00077	J	1	U	0.005	U	0.002	J	0.0002	U	0.00063	J	0.005	U	0.00022	J	0.823			
MW-16	10/23/2024		0.19		49	42.7	0.294	6.81	77.9	310	0.005	U	0.005	U	0.031	0.002	U	0.002	U	0.0036	J	0.00039	J	0.294	0.005	U	0.0033	J	0.0002	U	0.005	U	0.005	U	0.005	U	3.654	U			
	5/2/2024		0.11		85	13.3	0																																		




## FIGURES





PROJECT LOCATION  
(JEFFERSON COUNTY)

REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE:  
- EAST LIVERPOOL SOUTH, KNOXVILLE, WELLSVILLE, OH, 2019  
- WEIRTON, WV, 2019

ETEM REMEDIATION ONE, LLC			
DRWN: SCC	DATE: 04/29/24		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: JK	DATE: 04/29/24		
APPD: DRF	DATE: 05/20/24		
SCALE: AS SHOWN			
ISSUE DATE:			
2024 ANNUAL CCR REPORT SAMMIS POWER STATION JEFFERSON COUNTY, OHIO			
SITE LOCATION MAP		PROJECT NO: 2024-01 DRAWING NUMBER FIGURE 1	










LEGEND

- TEMPORARY MONITORING WELL
- ASD EXPANSION MONITORING WELL
- MONITORING WELL
- PIEZOMETER
- ETEM REMEDIATION ONE PRODUCTION WELL
- VILLAGE OF STRATTON PRODUCTION WELL



ETEM REMEDIATION ONE, LLC

DRWN: SCC	DATE: 04/29/24		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: JK	DATE: 04/29/24		
APPD: DRF	DATE: 05/20/24		
SCALE: AS SHOWN	ISSUE DATE:		

2024 ANNUAL CCR REPORT  
SAMMIS POWER STATION  
JEFFERSON COUNTY, OHIO

ASD MONITORING WELL EXPANSION MAP

PROJECT NO: 2024-01  
DRAWING NUMBER  
FIGURE 3

△			
△			
△			
REV #	DATE	DESCRIPTION	APPD

REFERENCE: AERIAL OBTAINED FROM GOOGLE EARTH, DATED 4/26/2023



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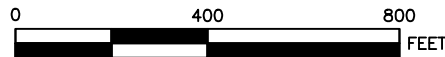


## LEGEND


- EXPANSION MONITORING WELL
- CCR COMPLIANCE MONITORING WELL
- PIEZOMETER
- ETEM REMEDIATION ONE PRODUCTION WELL
- VILLAGE OF STRATTON PRODUCTION WELL
- GROUNDWATER CONTOUR (FT, MSL)  
DASHED WHERE INFERRED
- GROUNDWATER ELEVATION APRIL 29, 2024
- GROUNDWATER FLOW DIRECTION
- NM  
NOT MEASURED, LOCATION NOT ACCESSIBLE

REV	#	DATE	DESCRIPTION	APPD

REFERENCE: AERIAL OBTAINED FROM GOOGLE EARTH, DATED 4/26/2023  
NEW CUMBERLAND LOCK AND DAM DATA  
[HTTPS://WATERDATA.USGS.GOV/](https://waterdata.usgs.gov/)



## ETEM REMEDIATION ONE, LLC

DRWN: SCC	DATE: 05/02/24		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: RMW	DATE: 05/02/24		
APPD: DRF	DATE: 05/23/24		
SCALE: AS SHOWN	ISSUE DATE:		

2024 ANNUAL CCR REPORT  
SAMMIS POWER STATION  
JEFFERSON COUNTY, OHIO

ASD MONITORING WELL EXPANSION  
GROUNDWATER ELEVATION CONTOUR MAP  
APRIL 29, 2024

PROJECT NO: 2024-01  
DRAWING NUMBER  
FIGURE 4A



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LEGEND


- ASD EXPANSION MONITORING WELL
- MONITORING WELL
- PIEZOMETER
- ETEM REMEDIATION ONE PRODUCTION WELL
- VILLAGE OF STRATTON PRODUCTION WELL
- 650 ——— GROUNDWATER CONTOUR (FT, MSL)  
649.83 ——— DASHED WHERE INFERRED
- GROUNDWATER ELEVATION OCTOBER 9, 2023
- GROUNDWATER FLOW DIRECTION

△			
△			
△			
REV #	DATE	DESCRIPTION	APPD

REFERENCE: AERIAL OBTAINED FROM GOOGLE EARTH, DATED 4/26/2023  
NEW CUMBERLAND LOCK AND DAM DATA [HTTPS://WATERDATA.USGS.GOV/](https://waterdata.usgs.gov/)

0400800FEET

ETEM REMEDIATION ONE, LLC

DRWN: SCC	DATE: 10/23/24		FIELD & TECHNICAL SERVICES, LLC. 200 THIRD AVENUE CARNEGIE, PA 15106
CHKD: RMW	DATE: 10/23/24		
APPD: DRF	DATE:		
SCALE: AS SHOWN	ISSUE DATE:		

2024 ANNUAL CCR REPORT  
SAMMIS POWER STATION  
JEFFERSON COUNTY, OHIO

ASD MONITORING WELL EXPANSION GROUNDWATER ELEVATION CONTOUR MAP OCTOBER 22, 2024	PROJECT NO: 22-495 DRAWING NUMBER FIGURE 4B
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# **APPENDIX A**

## **Laboratory Reports**





04-Jun-2024

Angela Gatchie  
ETEM  
200 Third Ave.  
Carnegie, PA 15106

Re: **Sammis 2024 1SA Sampling**

Work Order: **24050002**

Dear Angela,

ALS Environmental received 21 samples on 30-Apr-2024 through 03-May-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 148.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

**Jodi Blouw**

Electronically approved by: Jodi Blouw

Jodi Blouw

### Report of Laboratory Analysis

Certificate No: OH: 87783

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company



Client: ETEM  
Project: Sammis 2024 1SA Sampling  
Work Order: 24050002

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24050002-01	SMMS-MW-2-042924	Groundwater		4/29/2024 14:21	4/30/2024 10:00	<input type="checkbox"/>
24050074-01	SMMS-MW-9-043024	Groundwater		4/30/2024 09:55	5/1/2024 10:00	<input type="checkbox"/>
24050074-02	SMMS-MW-14S-043024	Groundwater		4/30/2024 12:38	5/1/2024 10:00	<input type="checkbox"/>
24050074-03	SMMS-P-1-043024	Groundwater		4/30/2024 14:17	5/1/2024 10:00	<input type="checkbox"/>
24050074-04	SMMS-FB-01-043024	Groundwater		4/30/2024 14:20	5/1/2024 10:00	<input type="checkbox"/>
24050077-01	SMMS-MW-99A-043024	Groundwater		4/30/2024 12:00	5/1/2024 10:00	<input type="checkbox"/>
24050077-02	SMMS-MW-3-043024	Groundwater		4/30/2024 12:25	5/1/2024 10:00	<input type="checkbox"/>
24050077-03	SMMS-MW-4-043024	Groundwater		4/30/2024 13:30	5/1/2024 10:00	<input type="checkbox"/>
24050077-04	SMMS-MW-5-043024	Groundwater		4/30/2024 14:40	5/1/2024 10:00	<input type="checkbox"/>
24050268-01	SMMS-MW-15-050224	Groundwater		5/2/2024 10:00	5/3/2024 09:30	<input type="checkbox"/>
24050268-02	SMMS-MW-16-050224	Groundwater		5/2/2024 11:20	5/3/2024 09:30	<input type="checkbox"/>
24050271-01	SMMS-MW-11D-050124	Groundwater		5/1/2024 10:55	5/3/2024 09:30	<input type="checkbox"/>
24050271-02	SMMS-MW-11S-050124	Groundwater		5/1/2024 12:00	5/3/2024 09:30	<input type="checkbox"/>
24050271-03	SMMS-MW-6-050124	Groundwater		5/1/2024 13:31	5/3/2024 09:30	<input type="checkbox"/>
24050271-04	SMMS-MW-99B-050124	Groundwater		5/1/2024 14:00	5/3/2024 09:30	<input type="checkbox"/>
24050271-05	SMMS-MW-13BR-050124	Groundwater		5/1/2024 15:00	5/3/2024 09:30	<input type="checkbox"/>
24050274-01	SMMS-MW-1-050124	Groundwater		5/1/2024 10:40	5/3/2024 09:30	<input type="checkbox"/>
24050274-02	SMMS-P-2-050124	Groundwater		5/1/2024 11:54	5/3/2024 09:30	<input type="checkbox"/>
24050274-03	SMMS-FB-02-050124	Groundwater		5/1/2024 12:00	5/3/2024 09:30	<input type="checkbox"/>
24050274-04	SMMS-MW-13S-050124	Groundwater		5/1/2024 13:43	5/3/2024 09:30	<input type="checkbox"/>
24050274-05	SMMS-MW-10D-050124	Groundwater		5/1/2024 15:16	5/3/2024 09:30	<input type="checkbox"/>



Client: ETEM  
Project: Sammis 2024 1SA Sampling  
WorkOrder: 24050002

QUALIFIERS,  
ACRONYMS, UNITS



<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
as noted	
mg/L	Milligrams per Liter



**Client:** ETEM  
**Project:** Sammis 2024 1SA Sampling  
**Work Order:** 24050002

## Case Narrative

Samples for the above noted Work Order were received on 4/30/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

### Metals:

Batch 240879, Method SW6020B, Sample SMMS-MW-9-043024 (24050074-01B): The concentration in the Method Blank was greater than the quantitation limit. The sample result was greater than 10x the concentration in the Method Blank; therefore, no qualification is necessary for this analyte: B

Batch 240879, Method SW6020B, Sample MBLK-240879: The concentration in the Method Blank was greater than the quantitation limit. Positive results in the batch may be biased high for this analyte: B

Batch 240879, Method SW6020B, Sample MBLK-240879: The concentration in the Method Blank was greater than the quantitation limit. Positive results in the batch may be biased high for this analyte: B

Batch 240950, Method SW6020B, Sample 24050271-01BMS: The MS recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Al, Ca, Mn, Na

Batch 240950, Method SW6020B, Sample 24050271-01BMDS: The MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Al, Ca, Mn, Na

Batch 241096, Method SW6020B, Sample SMMS-MW-10D-050124 (24050274-05B): The reporting limit is elevated due to dilution for high concentrations of non-target analytes. B



---

**Client:** ETEM  
**Project:** Sammis 2024 1SA Sampling  
**Work Order:** 24050002

## Case Narrative

---

No other deviations or anomalies were noted.

### Wet Chemistry:

Batch R403205A, Method SW9056A, Sample SMMS-MW-11D-050124 (24050271-01A): The reporting limit is elevated due to dilution needed to eliminate matrix-related interference.  
No other deviations or anomalies were noted.



Client:	ETEM		
Project:	Sammis 2024 1SA Sampling	Work Order:	24050002
Sample ID:	SMMS-MW-2-042924	Lab ID:	24050002-01
Collection Date:	4/29/2024 02:21 PM	Matrix:	GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: SW7470A		Prep: SW7470 / 5/1/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/1/2024 19:23
<b>METALS BY ICP-MS</b>							
			Method: SW6020B		Prep: SW3015A / 5/20/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/20/2024 22:16
Arsenic	0.00057	J	0.00019	0.0050	mg/L	1	5/20/2024 22:16
Barium	0.034		0.00057	0.0050	mg/L	1	5/20/2024 22:16
Beryllium	U		0.00013	0.0020	mg/L	1	5/20/2024 22:16
Boron	0.062		0.015	0.020	mg/L	1	5/20/2024 22:16
Cadmium	U		0.00014	0.0020	mg/L	1	5/20/2024 22:16
Calcium	39		0.22	0.50	mg/L	1	5/20/2024 22:16
Chromium	0.0058		0.00061	0.0050	mg/L	1	5/20/2024 22:16
Cobalt	U		0.00027	0.0050	mg/L	1	5/20/2024 22:16
Iron	0.26		0.047	0.080	mg/L	1	5/21/2024 15:37
Lead	0.00030	J	0.00022	0.0050	mg/L	1	5/20/2024 22:16
Lithium	0.0020	J	0.0017	0.010	mg/L	1	5/20/2024 22:16
Magnesium	8.5		0.037	0.20	mg/L	1	5/20/2024 22:16
Molybdenum	0.00081	J	0.00033	0.0050	mg/L	1	5/20/2024 22:16
Potassium	2.4		0.034	0.20	mg/L	1	5/20/2024 22:16
Selenium	U		0.00048	0.0050	mg/L	1	5/20/2024 22:16
Sodium	26		0.13	0.20	mg/L	1	5/20/2024 22:16
Thallium	0.00021	J	0.00015	0.0050	mg/L	1	5/20/2024 22:16
<b>ALKALINITY</b>							
			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	91.5		8.4	10	mg/L	1	5/13/2024 13:47
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: SW9056A				Analyst: CLJ
Chloride	37.0		3.1	10	mg/L	10	5/1/2024 14:19
Fluoride	U		0.67	1.0	mg/L	10	5/1/2024 14:19
Sulfate	52.2		1.9	10	mg/L	10	5/1/2024 14:19
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: A2540 C-15		Prep: FILTER / 5/3/24		Analyst: LAD
Total Dissolved Solids	230		37	50	mg/L	1	5/8/2024 10:00
<b>SUBCONTRACTED ANALYSES</b>							
			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/24/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050074-01
Sample ID:	SMMS-MW-9-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 09:55 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:23
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 21:56
Arsenic	0.00026	J	0.00019	0.0050	mg/L	1	5/24/2024 21:56
Barium	0.037		0.00057	0.0050	mg/L	1	5/24/2024 21:56
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 21:56
Boron	0.30	B	0.015	0.020	mg/L	1	5/24/2024 21:56
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 21:56
Calcium	60		0.22	0.50	mg/L	1	5/24/2024 21:56
Chromium	0.00078	J	0.00061	0.0050	mg/L	1	5/24/2024 21:56
Cobalt	U		0.00027	0.0050	mg/L	1	5/24/2024 21:56
Iron	U		0.047	0.080	mg/L	1	5/24/2024 21:56
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 21:56
Lithium	0.0028	J	0.0017	0.010	mg/L	1	5/24/2024 21:56
Magnesium	12		0.037	0.20	mg/L	1	5/24/2024 21:56
Molybdenum	0.00081	J	0.00033	0.0050	mg/L	1	5/24/2024 21:56
Potassium	2.8		0.034	0.20	mg/L	1	5/24/2024 21:56
Selenium	0.00089	J	0.00048	0.0050	mg/L	1	5/24/2024 21:56
Sodium	37		0.13	0.20	mg/L	1	5/24/2024 21:56
Thallium	0.00016	J	0.00015	0.0050	mg/L	1	5/24/2024 21:56
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	119		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	69.4		3.1	10	mg/L	10	5/2/2024 23:10
Fluoride	0.241		0.067	0.10	mg/L	1	5/3/2024 17:43
Sulfate	95.6		1.9	10	mg/L	10	5/2/2024 23:10
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	360		37	50	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/28/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050074-02
Sample ID:	SMMS-MW-14S-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 12:38 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:25
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 21:58
Arsenic	0.00068	J	0.00019	0.0050	mg/L	1	5/24/2024 21:58
Barium	0.041		0.00057	0.0050	mg/L	1	5/24/2024 21:58
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 21:58
Boron	0.066		0.015	0.020	mg/L	1	5/30/2024 19:09
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 21:58
Calcium	69		0.22	0.50	mg/L	1	5/24/2024 21:58
Chromium	0.00077	J	0.00061	0.0050	mg/L	1	5/24/2024 21:58
Cobalt	0.00051	J	0.00027	0.0050	mg/L	1	5/24/2024 21:58
Iron	0.87		0.047	0.080	mg/L	1	5/24/2024 21:58
Lead	0.00061	J	0.00022	0.0050	mg/L	1	5/24/2024 21:58
Lithium	0.0034	J	0.0017	0.010	mg/L	1	5/24/2024 21:58
Magnesium	12		0.037	0.20	mg/L	1	5/24/2024 21:58
Molybdenum	0.00035	J	0.00033	0.0050	mg/L	1	5/24/2024 21:58
Potassium	2.6		0.034	0.20	mg/L	1	5/24/2024 21:58
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 21:58
Sodium	33		0.13	0.20	mg/L	1	5/24/2024 21:58
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 21:58
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	118		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	54.8		3.1	10	mg/L	10	5/2/2024 23:20
Fluoride	0.363		0.067	0.10	mg/L	1	5/3/2024 17:52
Sulfate	108		1.9	10	mg/L	10	5/2/2024 23:20
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	340		37	50	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/28/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM		
Project:	Sammis 2024 1SA Sampling	Work Order:	24050002
Sample ID:	SMMS-P-1-043024	Lab ID:	24050074-03
Collection Date:	4/30/2024 02:17 PM	Matrix:	GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:26
<b>METALS BY ICP-MS</b>							
			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 21:59
Arsenic	0.00079	J	0.00019	0.0050	mg/L	1	5/24/2024 21:59
Barium	0.013		0.00057	0.0050	mg/L	1	5/24/2024 21:59
Beryllium	0.00018	J	0.00013	0.0020	mg/L	1	5/24/2024 21:59
Boron	0.15		0.015	0.020	mg/L	1	5/30/2024 19:11
Cadmium	0.00050	J	0.00014	0.0020	mg/L	1	5/24/2024 21:59
Calcium	70		0.22	0.50	mg/L	1	5/24/2024 21:59
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 21:59
Cobalt	0.019		0.00027	0.0050	mg/L	1	5/24/2024 21:59
Iron	16		0.047	0.080	mg/L	1	5/24/2024 21:59
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 21:59
Lithium	0.0041	J	0.0017	0.010	mg/L	1	5/24/2024 21:59
Magnesium	17		0.037	0.20	mg/L	1	5/24/2024 21:59
Molybdenum	U		0.00033	0.0050	mg/L	1	5/24/2024 21:59
Potassium	3.2		0.034	0.20	mg/L	1	5/24/2024 21:59
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 21:59
Sodium	56		0.13	0.20	mg/L	1	5/24/2024 21:59
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 21:59
<b>ALKALINITY</b>							
			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	32.0		8.4	10	mg/L	1	5/13/2024 13:47
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: SW9056A				Analyst: CLJ
Chloride	65.4		3.1	10	mg/L	10	5/2/2024 23:30
Fluoride	0.143		0.067	0.10	mg/L	1	5/3/2024 18:22
Sulfate	327		7.6	40	mg/L	40	5/3/2024 18:31
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	570		37	50	mg/L	1	5/9/2024 13:47
<b>SUBCONTRACTED ANALYSES</b>							
			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/28/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050074-04
Sample ID:	SMMS-FB-01-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 02:20 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:28
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 22:01
Arsenic	U		0.00019	0.0050	mg/L	1	5/24/2024 22:01
Barium	U		0.00057	0.0050	mg/L	1	5/24/2024 22:01
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 22:01
Boron	U		0.015	0.020	mg/L	1	5/24/2024 22:01
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 22:01
Calcium	U		0.22	0.50	mg/L	1	5/24/2024 22:01
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 22:01
Cobalt	U		0.00027	0.0050	mg/L	1	5/24/2024 22:01
Iron	U		0.047	0.080	mg/L	1	5/24/2024 22:01
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 22:01
Lithium	U		0.0017	0.010	mg/L	1	5/24/2024 22:01
Magnesium	U		0.037	0.20	mg/L	1	5/24/2024 22:01
Molybdenum	U		0.00033	0.0050	mg/L	1	5/24/2024 22:01
Potassium	U		0.034	0.20	mg/L	1	5/24/2024 22:01
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 22:01
Sodium	U		0.13	0.20	mg/L	1	5/24/2024 22:01
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 22:01
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	29.2		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	U		0.31	1.0	mg/L	1	5/3/2024 19:01
Fluoride	U		0.067	0.10	mg/L	1	5/3/2024 19:01
Sulfate	U		0.19	1.0	mg/L	1	5/3/2024 19:01
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	U		22	30	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/28/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050077-01
Sample ID:	SMMS-MW-99A-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:35
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 22:03
Arsenic	U		0.00019	0.0050	mg/L	1	5/24/2024 22:03
Barium	0.033		0.00057	0.0050	mg/L	1	5/24/2024 22:03
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 22:03
Boron	0.17		0.015	0.020	mg/L	1	5/30/2024 19:12
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 22:03
Calcium	43		0.22	0.50	mg/L	1	5/24/2024 22:03
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 22:03
Cobalt	U		0.00027	0.0050	mg/L	1	5/24/2024 22:03
Iron	U		0.047	0.080	mg/L	1	5/24/2024 22:03
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 22:03
Lithium	0.0018	J	0.0017	0.010	mg/L	1	5/24/2024 22:03
Magnesium	8.5		0.037	0.20	mg/L	1	5/24/2024 22:03
Molybdenum	U		0.00033	0.0050	mg/L	1	5/24/2024 22:03
Potassium	2.5		0.034	0.20	mg/L	1	5/24/2024 22:03
Selenium	0.00056	J	0.00048	0.0050	mg/L	1	5/24/2024 22:03
Sodium	27		0.13	0.20	mg/L	1	5/24/2024 22:03
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 22:03
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	97.8		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	43.7		3.1	10	mg/L	10	5/3/2024 00:08
Fluoride	0.328		0.067	0.10	mg/L	1	5/3/2024 19:10
Sulfate	65.7		1.9	10	mg/L	10	5/3/2024 00:08
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	250		37	50	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/24/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050077-02
Sample ID:	SMMS-MW-3-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 12:25 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>			Prep: SW7470 / 5/8/24	Analyst: <b>KRA</b>
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:41
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>			Prep: SW3015A / 5/24/24	Analyst: <b>STP</b>
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 22:05
Arsenic	0.00020	J	0.00019	0.0050	mg/L	1	5/24/2024 22:05
Barium	0.033		0.00057	0.0050	mg/L	1	5/24/2024 22:05
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 22:05
Boron	0.080		0.015	0.020	mg/L	1	5/31/2024 14:11
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 22:05
Calcium	39		0.22	0.50	mg/L	1	5/24/2024 22:05
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 22:05
Cobalt	U		0.00027	0.0050	mg/L	1	5/24/2024 22:05
Iron	U		0.047	0.080	mg/L	1	5/24/2024 22:05
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 22:05
Lithium	U		0.0017	0.010	mg/L	1	5/24/2024 22:05
Magnesium	8.5		0.037	0.20	mg/L	1	5/24/2024 22:05
Molybdenum	0.00041	J	0.00033	0.0050	mg/L	1	5/24/2024 22:05
Potassium	2.5		0.034	0.20	mg/L	1	5/24/2024 22:05
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 22:05
Sodium	25		0.13	0.20	mg/L	1	5/24/2024 22:05
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 22:05
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>MGS</b>
Alkalinity, Total (as CaCO3)	113		8.4	10	mg/L	1	5/13/2024 13:47
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>CLJ</b>
Chloride	38.4		3.1	10	mg/L	10	5/3/2024 00:18
Fluoride	0.258		0.067	0.10	mg/L	1	5/3/2024 19:20
Sulfate	59.8		1.9	10	mg/L	10	5/3/2024 00:18
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>			Prep: FILTER / 5/7/24	Analyst: <b>LAD</b>
Total Dissolved Solids	230		37	50	mg/L	1	5/9/2024 13:47
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		0		as noted	1	5/24/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050077-03
Sample ID:	SMMS-MW-4-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 01:30 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:42
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 22:06
Arsenic	0.00021	J	0.00019	0.0050	mg/L	1	5/24/2024 22:06
Barium	0.033		0.00057	0.0050	mg/L	1	5/24/2024 22:06
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 22:06
Boron	0.16		0.015	0.020	mg/L	1	5/31/2024 14:12
Cadmium	U		0.00014	0.0020	mg/L	1	5/24/2024 22:06
Calcium	43		0.22	0.50	mg/L	1	5/24/2024 22:06
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 22:06
Cobalt	U		0.00027	0.0050	mg/L	1	5/24/2024 22:06
Iron	U		0.047	0.080	mg/L	1	5/24/2024 22:06
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 22:06
Lithium	0.0018	J	0.0017	0.010	mg/L	1	5/24/2024 22:06
Magnesium	8.5		0.037	0.20	mg/L	1	5/24/2024 22:06
Molybdenum	U		0.00033	0.0050	mg/L	1	5/24/2024 22:06
Potassium	2.5		0.034	0.20	mg/L	1	5/24/2024 22:06
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 22:06
Sodium	27		0.13	0.20	mg/L	1	5/24/2024 22:06
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 22:06
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	92.2		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	44.5		3.1	10	mg/L	10	5/3/2024 00:28
Fluoride	0.339		0.067	0.10	mg/L	1	5/3/2024 19:30
Sulfate	67.6		1.9	10	mg/L	10	5/3/2024 00:28
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	250		37	50	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/24/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050077-04
Sample ID:	SMMS-MW-5-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 02:40 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	0.00019	J	0.00016	0.00020	mg/L	1	5/8/2024 15:44
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/24/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/24/2024 22:08
Arsenic	0.00019	J	0.00019	0.0050	mg/L	1	5/24/2024 22:08
Barium	0.023		0.00057	0.0050	mg/L	1	5/24/2024 22:08
Beryllium	U		0.00013	0.0020	mg/L	1	5/24/2024 22:08
Boron	0.087		0.015	0.020	mg/L	1	5/31/2024 14:14
Cadmium	0.00025	J	0.00014	0.0020	mg/L	1	5/24/2024 22:08
Calcium	55		0.22	0.50	mg/L	1	5/24/2024 22:08
Chromium	U		0.00061	0.0050	mg/L	1	5/24/2024 22:08
Cobalt	0.0032	J	0.00027	0.0050	mg/L	1	5/24/2024 22:08
Iron	2.1		0.047	0.080	mg/L	1	5/24/2024 22:08
Lead	U		0.00022	0.0050	mg/L	1	5/24/2024 22:08
Lithium	0.0021	J	0.0017	0.010	mg/L	1	5/24/2024 22:08
Magnesium	12		0.037	0.20	mg/L	1	5/24/2024 22:08
Molybdenum	U		0.00033	0.0050	mg/L	1	5/24/2024 22:08
Potassium	2.8		0.034	0.20	mg/L	1	5/24/2024 22:08
Selenium	U		0.00048	0.0050	mg/L	1	5/24/2024 22:08
Sodium	40		0.13	0.20	mg/L	1	5/24/2024 22:08
Thallium	U		0.00015	0.0050	mg/L	1	5/24/2024 22:08
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	79.5		8.4	10	mg/L	1	5/13/2024 13:47
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	53.1		3.1	10	mg/L	10	5/3/2024 00:38
Fluoride	0.335		0.067	0.10	mg/L	1	5/3/2024 19:40
Sulfate	172		1.9	10	mg/L	10	5/3/2024 00:38
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/7/24		Analyst: LAD
Total Dissolved Solids	380		37	50	mg/L	1	5/9/2024 13:47
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/24/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050268-01
Sample ID:	SMMS-MW-15-050224	Matrix:	GROUNDWATER
Collection Date:	5/2/2024 10:00 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/8/2024 15:46
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:24
Arsenic	U		0.00019	0.0050	mg/L	1	5/29/2024 01:24
Barium	0.033		0.00057	0.0050	mg/L	1	5/29/2024 01:24
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:24
Boron	0.12		0.015	0.020	mg/L	1	5/29/2024 17:27
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:24
Calcium	45		0.22	0.50	mg/L	1	5/29/2024 01:24
Chromium	0.010		0.00061	0.0050	mg/L	1	5/29/2024 01:24
Cobalt	0.00077	J	0.00027	0.0050	mg/L	1	5/29/2024 01:24
Iron	0.073	J	0.047	0.080	mg/L	1	5/29/2024 01:24
Lead	U		0.00022	0.0050	mg/L	1	5/29/2024 01:24
Lithium	0.0020	J	0.0017	0.010	mg/L	1	5/29/2024 01:24
Magnesium	9.5		0.037	0.20	mg/L	1	5/29/2024 01:24
Molybdenum	0.00063	J	0.00033	0.0050	mg/L	1	5/29/2024 01:24
Potassium	2.4		0.034	0.20	mg/L	1	5/29/2024 01:24
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:24
Sodium	30		0.13	0.20	mg/L	1	5/29/2024 01:24
Thallium	0.00022	J	0.00015	0.0050	mg/L	1	5/29/2024 01:24
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	93.1		8.4	10	mg/L	1	5/15/2024 10:50
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	26.6		3.1	10	mg/L	10	5/23/2024 16:52
Fluoride	U		0.67	1.0	mg/L	10	5/23/2024 16:52
Sulfate	47.7		1.9	10	mg/L	10	5/23/2024 16:52
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/9/24		Analyst: LAD
Total Dissolved Solids	270		37	50	mg/L	1	5/13/2024 13:03
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050268-02
Sample ID:	SMMS-MW-16-050224	Matrix:	GROUNDWATER
Collection Date:	5/2/2024 11:20 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/8/24		Analyst: KRA
Mercury		U	0.00016	0.00020	mg/L	1	5/8/2024 15:48
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	0.00054	J	0.00042	0.0050	mg/L	1	5/29/2024 01:26
Arsenic	0.0048	J	0.00019	0.0050	mg/L	1	5/29/2024 01:26
Barium	0.18		0.00057	0.0050	mg/L	1	5/29/2024 01:26
Beryllium		U	0.00013	0.0020	mg/L	1	5/29/2024 01:26
Boron	0.11		0.015	0.020	mg/L	1	5/29/2024 17:29
Cadmium		U	0.00014	0.0020	mg/L	1	5/29/2024 01:26
Calcium	85		0.22	0.50	mg/L	1	5/29/2024 01:26
Chromium	0.0096		0.00061	0.0050	mg/L	1	5/29/2024 01:26
Cobalt	0.00068	J	0.00027	0.0050	mg/L	1	5/29/2024 01:26
Iron	0.29		0.047	0.080	mg/L	1	5/29/2024 01:26
Lead	0.00028	J	0.00022	0.0050	mg/L	1	5/29/2024 01:26
Lithium	0.023		0.0017	0.010	mg/L	1	5/29/2024 01:26
Magnesium	17		0.037	0.20	mg/L	1	5/29/2024 01:26
Molybdenum	0.011		0.00033	0.0050	mg/L	1	5/29/2024 01:26
Potassium	15		0.034	0.20	mg/L	1	5/29/2024 01:26
Selenium		U	0.00048	0.0050	mg/L	1	5/29/2024 01:26
Sodium	30		0.13	0.20	mg/L	1	5/29/2024 01:26
Thallium		U	0.00015	0.0050	mg/L	1	5/29/2024 01:26
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	143		8.4	10	mg/L	1	5/15/2024 10:50
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	13.3		3.1	10	mg/L	10	5/23/2024 17:02
Fluoride	0.385		0.067	0.10	mg/L	1	5/24/2024 14:22
Sulfate	124		1.9	10	mg/L	10	5/23/2024 17:02
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/9/24		Analyst: LAD
Total Dissolved Solids	440		37	50	mg/L	1	5/13/2024 13:03
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050271-01
Sample ID:	SMMS-MW-11D-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 10:55 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:05
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:27
Arsenic	0.00085	J	0.00019	0.0050	mg/L	1	5/29/2024 01:27
Barium	0.017		0.00057	0.0050	mg/L	1	5/29/2024 01:27
Beryllium	0.00037	J	0.00013	0.0020	mg/L	1	5/29/2024 01:27
Boron	0.16		0.015	0.020	mg/L	1	5/29/2024 17:30
Cadmium	0.0013	J	0.00014	0.0020	mg/L	1	5/29/2024 01:27
Calcium	82		0.22	0.50	mg/L	1	5/29/2024 01:27
Chromium	0.0051		0.00061	0.0050	mg/L	1	5/29/2024 01:27
Cobalt	0.044		0.00027	0.0050	mg/L	1	5/29/2024 01:27
Iron	12		0.047	0.080	mg/L	1	5/29/2024 01:27
Lead	0.00056	J	0.00022	0.0050	mg/L	1	5/29/2024 01:27
Lithium	0.012		0.0017	0.010	mg/L	1	5/29/2024 01:27
Magnesium	19		0.037	0.20	mg/L	1	5/29/2024 01:27
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:27
Potassium	3.6		0.034	0.20	mg/L	1	5/29/2024 01:27
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:27
Sodium	66		0.13	0.20	mg/L	1	5/29/2024 01:27
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:27
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	U		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	183		3.1	10	mg/L	10	5/7/2024 15:40
Fluoride	0.879	J	0.67	1.0	mg/L	10	5/7/2024 15:40
Sulfate	427		19	100	mg/L	100	5/10/2024 19:28
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	600		37	50	mg/L	1	5/13/2024 12:08
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050271-02
Sample ID:	SMMS-MW-11S-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:07
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:33
Arsenic	0.0088		0.00019	0.0050	mg/L	1	5/29/2024 01:33
Barium	0.035		0.00057	0.0050	mg/L	1	5/29/2024 01:33
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:33
Boron	0.16		0.015	0.020	mg/L	1	5/29/2024 17:36
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:33
Calcium	170		0.22	0.50	mg/L	1	5/29/2024 01:33
Chromium	0.0012	J	0.00061	0.0050	mg/L	1	5/29/2024 01:33
Cobalt	0.0098		0.00027	0.0050	mg/L	1	5/29/2024 01:33
Iron	9.5		0.047	0.080	mg/L	1	5/29/2024 01:33
Lead	0.00058	J	0.00022	0.0050	mg/L	1	5/29/2024 01:33
Lithium	0.011		0.0017	0.010	mg/L	1	5/29/2024 01:33
Magnesium	24		0.037	0.20	mg/L	1	5/29/2024 01:33
Molybdenum	0.00039	J	0.00033	0.0050	mg/L	1	5/29/2024 01:33
Potassium	3.2		0.034	0.20	mg/L	1	5/29/2024 01:33
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:33
Sodium	69		0.13	0.20	mg/L	1	5/29/2024 01:33
Thallium	0.00025	J	0.00015	0.0050	mg/L	1	5/29/2024 01:33
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	184		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	81.9		3.1	10	mg/L	10	5/10/2024 19:48
Fluoride	U		0.67	1.0	mg/L	10	5/10/2024 19:48
Sulfate	373		7.6	40	mg/L	40	5/13/2024 19:11
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	810		37	50	mg/L	1	5/13/2024 12:08
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050271-03
Sample ID:	SMMS-MW-6-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 01:31 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:09
<b>METALS BY ICP-MS</b>							
			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:35
Arsenic	0.00023	J	0.00019	0.0050	mg/L	1	5/29/2024 01:35
Barium	0.013		0.00057	0.0050	mg/L	1	5/29/2024 01:35
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:35
Boron	0.13		0.015	0.020	mg/L	1	5/29/2024 17:38
Cadmium	0.00024	J	0.00014	0.0020	mg/L	1	5/29/2024 01:35
Calcium	63		0.22	0.50	mg/L	1	5/29/2024 01:35
Chromium	U		0.00061	0.0050	mg/L	1	5/29/2024 01:35
Cobalt	0.010		0.00027	0.0050	mg/L	1	5/29/2024 01:35
Iron	9.5		0.047	0.080	mg/L	1	5/29/2024 01:35
Lead	0.00031	J	0.00022	0.0050	mg/L	1	5/29/2024 01:35
Lithium	U		0.0017	0.010	mg/L	1	5/29/2024 01:35
Magnesium	15		0.037	0.20	mg/L	1	5/29/2024 01:35
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:35
Potassium	2.9		0.034	0.20	mg/L	1	5/29/2024 01:35
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:35
Sodium	51		0.13	0.20	mg/L	1	5/29/2024 01:35
Thallium	0.00017	J	0.00015	0.0050	mg/L	1	5/29/2024 01:35
<b>ALKALINITY</b>							
			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	27.6		8.4	10	mg/L	1	5/14/2024 14:44
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: SW9056A				Analyst: CLJ
Chloride	60.4		3.1	10	mg/L	10	5/13/2024 19:30
Fluoride	U		0.67	1.0	mg/L	10	5/13/2024 19:30
Sulfate	259		3.0	16	mg/L	16	5/14/2024 20:47
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	440		37	50	mg/L	1	5/13/2024 12:08
<b>SUBCONTRACTED ANALYSES</b>							
			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050271-04
Sample ID:	SMMS-MW-99B-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 02:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:10
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:36
Arsenic	0.0086		0.00019	0.0050	mg/L	1	5/29/2024 01:36
Barium	0.035		0.00057	0.0050	mg/L	1	5/29/2024 01:36
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:36
Boron	0.16		0.015	0.020	mg/L	1	5/29/2024 17:43
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:36
Calcium	170		0.22	0.50	mg/L	1	5/29/2024 01:36
Chromium	0.0013	J	0.00061	0.0050	mg/L	1	5/29/2024 01:36
Cobalt	0.0094		0.00027	0.0050	mg/L	1	5/29/2024 01:36
Iron	9.4		0.047	0.080	mg/L	1	5/29/2024 01:36
Lead	0.00053	J	0.00022	0.0050	mg/L	1	5/29/2024 01:36
Lithium	0.011		0.0017	0.010	mg/L	1	5/29/2024 01:36
Magnesium	24		0.037	0.20	mg/L	1	5/29/2024 01:36
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:36
Potassium	3.3		0.034	0.20	mg/L	1	5/29/2024 01:36
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:36
Sodium	69		0.13	0.20	mg/L	1	5/29/2024 01:36
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:36
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	204		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	82.4		3.1	10	mg/L	10	5/13/2024 19:50
Fluoride	U		0.67	1.0	mg/L	10	5/13/2024 19:50
Sulfate	361		7.6	40	mg/L	40	5/14/2024 21:07
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	800		37	50	mg/L	1	5/13/2024 12:08
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050271-05
Sample ID:	SMMS-MW-13BR-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 03:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:12
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:41
Arsenic	0.0034	J	0.00019	0.0050	mg/L	1	5/29/2024 01:41
Barium	0.081		0.00057	0.0050	mg/L	1	5/29/2024 01:41
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:41
Boron	0.26		0.015	0.020	mg/L	1	5/29/2024 01:41
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:41
Calcium	4.0		0.22	0.50	mg/L	1	5/29/2024 01:41
Chromium	0.0014	J	0.00061	0.0050	mg/L	1	5/29/2024 01:41
Cobalt	0.00030	J	0.00027	0.0050	mg/L	1	5/29/2024 01:41
Iron	0.36		0.047	0.080	mg/L	1	5/29/2024 01:41
Lead	0.00040	J	0.00022	0.0050	mg/L	1	5/29/2024 01:41
Lithium	0.0045	J	0.0017	0.010	mg/L	1	5/29/2024 01:41
Magnesium	0.87		0.037	0.20	mg/L	1	5/29/2024 01:41
Molybdenum	0.0023	J	0.00033	0.0050	mg/L	1	5/29/2024 01:41
Potassium	1.6		0.034	0.20	mg/L	1	5/29/2024 01:41
Selenium	0.00053	J	0.00048	0.0050	mg/L	1	5/29/2024 01:41
Sodium	170		1.3	2.0	mg/L	10	5/29/2024 17:45
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:41
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	271		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	29.0		3.1	10	mg/L	10	5/23/2024 16:33
Fluoride	1.41		0.67	1.0	mg/L	10	5/23/2024 16:33
Sulfate	3.60		0.19	1.0	mg/L	1	5/24/2024 13:43
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	380		37	50	mg/L	1	5/13/2024 12:08
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050274-01
Sample ID:	SMMS-MW-1-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 10:40 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:14
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:43
Arsenic	0.00036	J	0.00019	0.0050	mg/L	1	5/29/2024 01:43
Barium	0.039		0.00057	0.0050	mg/L	1	5/29/2024 01:43
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:43
Boron	0.077		0.015	0.020	mg/L	1	5/29/2024 01:43
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:43
Calcium	44		0.22	0.50	mg/L	1	5/29/2024 01:43
Chromium	0.00064	J	0.00061	0.0050	mg/L	1	5/29/2024 01:43
Cobalt	U		0.00027	0.0050	mg/L	1	5/29/2024 01:43
Iron	0.28		0.047	0.080	mg/L	1	5/29/2024 01:43
Lead	0.00030	J	0.00022	0.0050	mg/L	1	5/29/2024 01:43
Lithium	U		0.0017	0.010	mg/L	1	5/29/2024 01:43
Magnesium	9.0		0.037	0.20	mg/L	1	5/29/2024 01:43
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:43
Potassium	2.7		0.034	0.20	mg/L	1	5/29/2024 01:43
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:43
Sodium	29		0.13	0.20	mg/L	1	5/29/2024 17:46
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:43
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	105		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	108		3.1	10	mg/L	10	5/7/2024 15:30
Fluoride	0.279		0.067	0.10	mg/L	1	5/10/2024 19:19
Sulfate	135		1.9	10	mg/L	10	5/7/2024 15:30
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	240		37	50	mg/L	1	5/13/2024 09:23
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050274-02
Sample ID:	SMMS-P-2-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 11:54 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>		Prep: SW7470 / 5/9/24		Analyst: <b>KRA</b>
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 16:58
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3015A / 5/28/24		Analyst: <b>STP</b>
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:45
Arsenic	0.00023	J	0.00019	0.0050	mg/L	1	5/29/2024 01:45
Barium	0.026		0.00057	0.0050	mg/L	1	5/29/2024 01:45
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:45
Boron	0.076		0.015	0.020	mg/L	1	5/29/2024 01:45
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:45
Calcium	46		0.22	0.50	mg/L	1	5/29/2024 01:45
Chromium	U		0.00061	0.0050	mg/L	1	5/29/2024 01:45
Cobalt	0.0011	J	0.00027	0.0050	mg/L	1	5/29/2024 01:45
Iron	0.91		0.047	0.080	mg/L	1	5/29/2024 01:45
Lead	U		0.00022	0.0050	mg/L	1	5/29/2024 01:45
Lithium	U		0.0017	0.010	mg/L	1	5/29/2024 01:45
Magnesium	10		0.037	0.20	mg/L	1	5/29/2024 01:45
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:45
Potassium	2.5		0.034	0.20	mg/L	1	5/29/2024 01:45
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:45
Sodium	33		0.13	0.20	mg/L	1	5/29/2024 17:48
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:45
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>MGS</b>
Alkalinity, Total (as CaCO3)	88.8		8.4	10	mg/L	1	5/14/2024 14:44
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>CLJ</b>
Chloride	40.6		3.1	10	mg/L	10	5/10/2024 19:38
Fluoride	U		0.67	1.0	mg/L	10	5/10/2024 19:38
Sulfate	90.8		1.9	10	mg/L	10	5/10/2024 19:38
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>		Prep: FILTER / 5/8/24		Analyst: <b>LAD</b>
Total Dissolved Solids	270		37	50	mg/L	1	5/13/2024 09:23
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050274-03
Sample ID:	SMMS-FB-02-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 17:00
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/28/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/29/2024 01:46
Arsenic	U		0.00019	0.0050	mg/L	1	5/29/2024 01:46
Barium	U		0.00057	0.0050	mg/L	1	5/29/2024 01:46
Beryllium	U		0.00013	0.0020	mg/L	1	5/29/2024 01:46
Boron	U		0.015	0.020	mg/L	1	5/29/2024 01:46
Cadmium	U		0.00014	0.0020	mg/L	1	5/29/2024 01:46
Calcium	U		0.22	0.50	mg/L	1	5/29/2024 01:46
Chromium	U		0.00061	0.0050	mg/L	1	5/29/2024 01:46
Cobalt	U		0.00027	0.0050	mg/L	1	5/29/2024 01:46
Iron	U		0.047	0.080	mg/L	1	5/29/2024 01:46
Lead	U		0.00022	0.0050	mg/L	1	5/29/2024 01:46
Lithium	U		0.0017	0.010	mg/L	1	5/29/2024 01:46
Magnesium	U		0.037	0.20	mg/L	1	5/29/2024 01:46
Molybdenum	U		0.00033	0.0050	mg/L	1	5/29/2024 01:46
Potassium	0.13	J	0.034	0.20	mg/L	1	5/29/2024 01:46
Selenium	U		0.00048	0.0050	mg/L	1	5/29/2024 01:46
Sodium	0.15	J	0.13	0.20	mg/L	1	5/29/2024 17:50
Thallium	U		0.00015	0.0050	mg/L	1	5/29/2024 01:46
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	25.4		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	U		0.31	1.0	mg/L	1	5/14/2024 20:37
Fluoride	U		0.067	0.10	mg/L	1	5/14/2024 20:37
Sulfate	U		0.19	1.0	mg/L	1	5/14/2024 20:37
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	U		22	30	mg/L	1	5/13/2024 09:23
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050274-04
Sample ID:	SMMS-MW-13S-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 01:43 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 17:02
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/29/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/30/2024 19:22
Arsenic	0.052		0.00019	0.0050	mg/L	1	5/30/2024 19:22
Barium	0.16		0.00057	0.0050	mg/L	1	5/30/2024 19:22
Beryllium	U		0.00013	0.0020	mg/L	1	5/30/2024 19:22
Boron	0.12		0.015	0.020	mg/L	1	5/31/2024 14:16
Cadmium	0.0029		0.00014	0.0020	mg/L	1	5/30/2024 19:22
Calcium	130		0.22	0.50	mg/L	1	5/30/2024 19:22
Chromium	0.0010	J	0.00061	0.0050	mg/L	1	5/30/2024 19:22
Cobalt	0.0037	J	0.00027	0.0050	mg/L	1	5/30/2024 19:22
Iron	9.5		0.047	0.080	mg/L	1	5/30/2024 19:22
Lead	0.00074	J	0.00022	0.0050	mg/L	1	5/30/2024 19:22
Lithium	0.0082	J	0.0017	0.010	mg/L	1	5/30/2024 19:22
Magnesium	25		0.037	0.20	mg/L	1	5/30/2024 19:22
Molybdenum	0.0036	J	0.00033	0.0050	mg/L	1	5/30/2024 19:22
Potassium	2.0		0.034	0.20	mg/L	1	5/30/2024 19:22
Selenium	U		0.00048	0.0050	mg/L	1	5/30/2024 19:22
Sodium	53		0.13	0.20	mg/L	1	5/30/2024 19:22
Thallium	U		0.00015	0.0050	mg/L	1	5/30/2024 19:22
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	177		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	75.7		3.1	10	mg/L	10	5/13/2024 19:40
Fluoride	U		0.67	1.0	mg/L	10	5/13/2024 19:40
Sulfate	297		7.6	40	mg/L	40	5/14/2024 20:57
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	640		37	50	mg/L	1	5/13/2024 09:23
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050002
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050274-05
Sample ID:	SMMS-MW-10D-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 03:16 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 5/9/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/9/2024 17:04
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 5/29/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/30/2024 19:24
Arsenic	0.0044	J	0.00019	0.0050	mg/L	1	5/30/2024 19:24
Barium	2.2		0.0057	0.050	mg/L	10	5/31/2024 14:17
Beryllium	U		0.00013	0.0020	mg/L	1	5/30/2024 19:24
Boron	0.19	J	0.15	0.20	mg/L	10	5/31/2024 14:17
Cadmium	U		0.00014	0.0020	mg/L	1	5/30/2024 19:24
Calcium	150		0.22	0.50	mg/L	1	5/30/2024 19:24
Chromium	0.0080		0.00061	0.0050	mg/L	1	5/30/2024 19:24
Cobalt	0.00055	J	0.00027	0.0050	mg/L	1	5/30/2024 19:24
Iron	3.0		0.047	0.080	mg/L	1	5/30/2024 19:24
Lead	0.00024	J	0.00022	0.0050	mg/L	1	5/30/2024 19:24
Lithium	0.021		0.0017	0.010	mg/L	1	5/30/2024 19:24
Magnesium	43		0.037	0.20	mg/L	1	5/30/2024 19:24
Molybdenum	0.0034	J	0.00033	0.0050	mg/L	1	5/30/2024 19:24
Potassium	6.6		0.034	0.20	mg/L	1	5/30/2024 19:24
Selenium	U		0.00048	0.0050	mg/L	1	5/30/2024 19:24
Sodium	730		1.3	2.0	mg/L	10	5/31/2024 14:17
Thallium	U		0.00015	0.0050	mg/L	1	5/30/2024 19:24
ALKALINITY			Method: A2320 B-11				Analyst: MGS
Alkalinity, Total (as CaCO3)	187		8.4	10	mg/L	1	5/14/2024 14:44
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: CLJ
Chloride	1,440		50	160	mg/L	160	5/28/2024 11:58
Fluoride	U		0.67	1.0	mg/L	10	5/23/2024 16:42
Sulfate	21.2		1.9	10	mg/L	10	5/23/2024 16:42
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 5/8/24		Analyst: LAD
Total Dissolved Solids	2,400		110	150	mg/L	1	5/13/2024 09:23
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	5/30/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Batch ID: 239392

Instrument ID HG5

Method: SW7470A

MBLK		Sample ID: MBLK-239392-239392					Units: mg/L		Analysis Date: 5/1/2024 06:32 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10719996		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239392-239392					Units: mg/L		Analysis Date: 5/1/2024 06:34 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10719997		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00225	0.00016	0.00020	0.002	0	112	80-120	0			

MS		Sample ID: 24042014-03CMS					Units: mg/L		Analysis Date: 5/1/2024 06:48 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10720009		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00195	0.00016	0.00020	0.002	-0.000012	98.1	75-125	0			

MS		Sample ID: 24042092-01AMS					Units: mg/L		Analysis Date: 5/1/2024 07:07 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10720027		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001995	0.00016	0.00020	0.002	0.000057	96.9	75-125	0			

MSD		Sample ID: 24042014-03CMSD					Units: mg/L		Analysis Date: 5/1/2024 06:50 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10720011		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00192	0.00016	0.00020	0.002	-0.000012	96.6	75-125	0.00195	1.55	20	

MSD		Sample ID: 24042092-01AMSD					Units: mg/L		Analysis Date: 5/1/2024 07:09 PM		
Client ID:		Run ID: HG5_240501B				SeqNo: 10720029		Prep Date: 5/1/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002055	0.00016	0.00020	0.002	0.000057	99.9	75-125	0.001995	2.96	20	

The following samples were analyzed in this batch:

24050002-01B



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239787      Instrument ID HG5      Method: SW7470A

MBLK		Sample ID: MBLK-239787-239787				Units: mg/L		Analysis Date: 5/8/2024 03:19 PM			
Client ID:		Run ID: HG5_240508B				SeqNo: 10739563		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239787-239787				Units: mg/L		Analysis Date: 5/8/2024 03:21 PM			
Client ID:		Run ID: HG5_240508B				SeqNo: 10739564		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001785	0.00016	0.00020	0.002	0	89.2	80-120	0			

MS		Sample ID: 24050077-01BMS				Units: mg/L		Analysis Date: 5/8/2024 03:37 PM			
Client ID: SMMS-MW-99A-043024		Run ID: HG5_240508B				SeqNo: 10739573		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00192	0.00016	0.00020	0.002	-0.000039	98	75-125	0			

MSD		Sample ID: 24050077-01BMSD				Units: mg/L		Analysis Date: 5/8/2024 03:39 PM			
Client ID: SMMS-MW-99A-043024		Run ID: HG5_240508B				SeqNo: 10739574		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00195	0.00016	0.00020	0.002	-0.000039	99.4	75-125	0.00192	1.55	20	

The following samples were analyzed in this batch:	24050074-01B	24050074-02B	24050074-03B
	24050074-04B	24050077-01B	24050077-02B
	24050077-03B	24050077-04B	24050268-01B
	24050268-02B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239883 Instrument ID HG5 Method: SW7470A

MBLK		Sample ID: MBLK-239883-239883					Units: mg/L		Analysis Date: 5/9/2024 03:56 PM			
Client ID:		Run ID: HG5_240509B					SeqNo: 10744363		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	U	0.00016	0.00020									

LCS		Sample ID: LCS-239883-239883					Units: mg/L		Analysis Date: 5/9/2024 03:58 PM			
Client ID:		Run ID: HG5_240509B					SeqNo: 10744364		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.002085	0.00016	0.00020	0.002	0	104	80-120	0				

MS		Sample ID: 24050494-02AMS					Units: mg/L		Analysis Date: 5/9/2024 04:17 PM			
Client ID:		Run ID: HG5_240509B					SeqNo: 10744375		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.001935	0.00016	0.00020	0.002	-0.000012	97.4	75-125	0				

MSD		Sample ID: 24050494-02AMSD					Units: mg/L		Analysis Date: 5/9/2024 04:19 PM			
Client ID:		Run ID: HG5_240509B					SeqNo: 10744376		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.00195	0.00016	0.00020	0.002	-0.000012	98.1	75-125	0.001935	0.772	20		

The following samples were analyzed in this batch:	24050271-01B	24050271-02B	24050271-03B
	24050271-04B	24050271-05B	24050274-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239884 Instrument ID HG5 Method: SW7470A

MBLK		Sample ID: MBLK-239884-239884				Units: mg/L		Analysis Date: 5/9/2024 04:55 PM			
Client ID:		Run ID: HG5_240509B				SeqNo: 10744396		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239884-239884				Units: mg/L		Analysis Date: 5/9/2024 04:56 PM			
Client ID:		Run ID: HG5_240509B				SeqNo: 10744397		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00207	0.00016	0.00020	0.002	0	104	80-120	0			

MS		Sample ID: 24050494-02BMS				Units: mg/L		Analysis Date: 5/9/2024 05:07 PM			
Client ID:		Run ID: HG5_240509B				SeqNo: 10744403		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001935	0.00016	0.00020	0.002	-0.0000105	97.3	75-125	0			

MSD		Sample ID: 24050494-02BMSD				Units: mg/L		Analysis Date: 5/9/2024 05:14 PM			
Client ID:		Run ID: HG5_240509B				SeqNo: 10744407		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00189	0.00016	0.00020	0.002	-0.0000105	95	75-125	0.001935	2.35	20	

The following samples were analyzed in this batch:

24050274-02B	24050274-03B	24050274-04B
24050274-05B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240485 Instrument ID ICPMS3 Method: SW6020B

MBLK					Sample ID: MBLK-240485-240485			Units: mg/L		Analysis Date: 5/20/2024 10:13 PM		
Client ID:			Run ID: ICPMS3_240520A			SeqNo: 10780134		Prep Date: 5/20/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	U	0.00042	0.0050									
Arsenic	U	0.00019	0.0050									
Barium	U	0.00057	0.0050									
Beryllium	U	0.00013	0.0020									
Boron	U	0.015	0.020									
Cadmium	U	0.00014	0.0020									
Calcium	U	0.22	0.50									
Chromium	0.001022	0.00061	0.0050								J	
Cobalt	U	0.00027	0.0050									
Iron	U	0.047	0.080									
Lead	U	0.00022	0.0050									
Lithium	U	0.0017	0.010									
Magnesium	U	0.037	0.20									
Molybdenum	U	0.00033	0.0050									
Potassium	U	0.034	0.20									
Selenium	U	0.00048	0.0050									
Sodium	U	0.13	0.20									
Thallium	U	0.00015	0.0050									

LCS					Sample ID: LCS-240485-240485			Units: mg/L		Analysis Date: 5/20/2024 10:14 PM		
Client ID:			Run ID: ICPMS3_240520A			SeqNo: 10780135		Prep Date: 5/20/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1002	0.00042	0.0050	0.1	0	100	80-120	0				
Arsenic	0.09594	0.00019	0.0050	0.1	0	95.9	80-120	0				
Barium	0.09803	0.00057	0.0050	0.1	0	98	80-120	0				
Beryllium	0.09932	0.00013	0.0020	0.1	0	99.3	80-120	0				
Boron	0.5044	0.015	0.020	0.5	0	101	80-120	0				
Cadmium	0.1003	0.00014	0.0020	0.1	0	100	80-120	0				
Calcium	9.973	0.22	0.50	10	0	99.7	80-120	0				
Chromium	0.09798	0.00061	0.0050	0.1	0	98	80-120	0				
Cobalt	0.09783	0.00027	0.0050	0.1	0	97.8	80-120	0				
Iron	9.76	0.047	0.080	10	0	97.6	80-120	0				
Lead	0.09828	0.00022	0.0050	0.1	0	98.3	80-120	0				
Lithium	0.0949	0.0017	0.010	0.1	0	94.9	80-120	0				
Magnesium	10.1	0.037	0.20	10	0	101	80-120	0				
Molybdenum	0.0981	0.00033	0.0050	0.1	0	98.1	80-120	0				
Potassium	10.01	0.034	0.20	10	0	100	80-120	0				
Selenium	0.09655	0.00048	0.0050	0.1	0	96.5	80-120	0				
Sodium	9.903	0.13	0.20	10	0	99	80-120	0				
Thallium	0.09432	0.00015	0.0050	0.1	0	94.3	80-120	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240485      Instrument ID ICPMS3      Method: SW6020B

MS      Sample ID: 24050933-16EMS					Units: mg/L			Analysis Date: 5/20/2024 10:47 PM			
Client ID:		Run ID: ICPMS3_240520A			SeqNo: 10780153		Prep Date: 5/20/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.08957	0.00042	0.0050	0.1	0.0004565	89.1	75-125	0			
Arsenic	0.1152	0.00019	0.0050	0.1	0.01174	103	75-125	0			
Barium	0.7359	0.00057	0.0050	0.1	0.6426	93.2	75-125	0			O
Beryllium	0.09583	0.00013	0.0020	0.1	0.0007645	95.1	75-125	0			
Boron	0.5781	0.015	0.020	0.5	0.06944	102	75-125	0			
Cadmium	0.0876	0.00014	0.0020	0.1	0.0001793	87.4	75-125	0			
Calcium	553.4	0.22	0.50	10	572.6	-192	75-125	0			SEO
Chromium	0.2004	0.00061	0.0050	0.1	0.09987	101	75-125	0			
Cobalt	0.1038	0.00027	0.0050	0.1	0.01238	91.4	75-125	0			
Lead	0.1323	0.00022	0.0050	0.1	0.0262	106	75-125	0			
Lithium	0.1264	0.0017	0.010	0.1	0.02116	105	75-125	0			
Magnesium	148	0.037	0.20	10	142.7	52.5	75-125	0			SO
Molybdenum	0.1226	0.00033	0.0050	0.1	0.01371	109	75-125	0			
Potassium	17.71	0.034	0.20	10	6.45	113	75-125	0			
Selenium	0.09501	0.00048	0.0050	0.1	0.003456	91.6	75-125	0			
Sodium	447.4	0.13	0.20	10	459.7	-123	75-125	0			SEO
Thallium	0.09383	0.00015	0.0050	0.1	0.000176	93.7	75-125	0			

MS      Sample ID: 24050933-16EMS					Units: mg/L			Analysis Date: 5/21/2024 03:45 PM			
Client ID:		Run ID: ICPMS3_240521A			SeqNo: 10785229		Prep Date: 5/20/2024		DF: 10		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Iron	67.04	0.47	0.80	10	37.01	300	75-125	0			S

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240485      Instrument ID ICPMS3      Method: SW6020B

MSD					Sample ID: 24050933-16EMSD			Units: mg/L		Analysis Date: 5/20/2024 10:49 PM		
Client ID:					Run ID: ICPMS3_240520A			SeqNo: 10780154		Prep Date: 5/20/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.09509	0.00042	0.0050	0.1	0.0004565	94.6	75-125	0.08957	5.97	20		
Arsenic	0.1154	0.00019	0.0050	0.1	0.01174	104	75-125	0.1152	0.176	20		
Barium	0.7423	0.00057	0.0050	0.1	0.6426	99.6	75-125	0.7359	0.866	20	O	
Beryllium	0.1007	0.00013	0.0020	0.1	0.0007645	100	75-125	0.09583	4.99	20		
Boron	0.6061	0.015	0.020	0.5	0.06944	107	75-125	0.5781	4.73	20		
Cadmium	0.09179	0.00014	0.0020	0.1	0.0001793	91.6	75-125	0.0876	4.67	20		
Calcium	553.1	0.22	0.50	10	572.6	-194	75-125	553.4	0.0504	20	SEO	
Chromium	0.2011	0.00061	0.0050	0.1	0.09987	101	75-125	0.2004	0.32	20		
Cobalt	0.1058	0.00027	0.0050	0.1	0.01238	93.5	75-125	0.1038	2	20		
Lead	0.1345	0.00022	0.0050	0.1	0.0262	108	75-125	0.1323	1.61	20		
Lithium	0.1273	0.0017	0.010	0.1	0.02116	106	75-125	0.1264	0.679	20		
Magnesium	147.6	0.037	0.20	10	142.7	49.2	75-125	148	0.222	20	SO	
Molybdenum	0.1227	0.00033	0.0050	0.1	0.01371	109	75-125	0.1226	0.104	20		
Potassium	17.94	0.034	0.20	10	6.45	115	75-125	17.71	1.31	20		
Selenium	0.1008	0.00048	0.0050	0.1	0.003456	97.3	75-125	0.09501	5.91	20		
Sodium	447.9	0.13	0.20	10	459.7	-118	75-125	447.4	0.122	20	SEO	
Thallium	0.09874	0.00015	0.0050	0.1	0.000176	98.6	75-125	0.09383	5.09	20		

MSD					Sample ID: 24050933-16EMSD			Units: mg/L		Analysis Date: 5/21/2024 03:47 PM		
Client ID:					Run ID: ICPMS3_240521A			SeqNo: 10785230		Prep Date: 5/20/2024		DF: 10
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Iron	63.32	0.47	0.80	10	37.01	263	75-125	67.04	5.71	20	S	

The following samples were analyzed in this batch: 24050002-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240879 Instrument ID ICPMS3 Method: SW6020B

MBLK Sample ID: MBLK-240879-240879					Units: mg/L			Analysis Date: 5/24/2024 09:53 PM			
Client ID:			Run ID: ICPMS3_240524A		SeqNo: 10804769		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	0.02848	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	0.0607	0.034	0.20								J
Selenium	U	0.00048	0.0050								
Sodium	0.1754	0.13	0.20								J
Thallium	U	0.00015	0.0050								

LCS Sample ID: LCS-240879-240879					Units: mg/L			Analysis Date: 5/24/2024 09:54 PM			
Client ID:			Run ID: ICPMS3_240524A		SeqNo: 10804770		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09821	0.00042	0.0050	0.1	0	98.2	80-120	0			
Arsenic	0.09618	0.00019	0.0050	0.1	0	96.2	80-120	0			
Barium	0.09874	0.00057	0.0050	0.1	0	98.7	80-120	0			
Beryllium	0.09978	0.00013	0.0020	0.1	0	99.8	80-120	0			
Boron	0.5205	0.015	0.020	0.5	0	104	80-120	0			B
Cadmium	0.09833	0.00014	0.0020	0.1	0	98.3	80-120	0			
Calcium	10.08	0.22	0.50	10	0	101	80-120	0			
Chromium	0.0965	0.00061	0.0050	0.1	0	96.5	80-120	0			
Cobalt	0.0983	0.00027	0.0050	0.1	0	98.3	80-120	0			
Iron	9.869	0.047	0.080	10	0	98.7	80-120	0			
Lead	0.09716	0.00022	0.0050	0.1	0	97.2	80-120	0			
Lithium	0.09273	0.0017	0.010	0.1	0	92.7	80-120	0			
Magnesium	9.74	0.037	0.20	10	0	97.4	80-120	0			
Molybdenum	0.0968	0.00033	0.0050	0.1	0	96.8	80-120	0			
Potassium	9.951	0.034	0.20	10	0	99.5	80-120	0			
Selenium	0.09808	0.00048	0.0050	0.1	0	98.1	80-120	0			
Sodium	9.628	0.13	0.20	10	0	96.3	80-120	0			
Thallium	0.09538	0.00015	0.0050	0.1	0	95.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240879 Instrument ID ICPMS3 Method: SW6020B

MS Sample ID: 24051090-14CMS					Units: mg/L			Analysis Date: 5/24/2024 10:42 PM			
Client ID:		Run ID: ICPMS3_240524A			SeqNo: 10804803		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09479	0.00042	0.0050	0.1	-0.0000847	94.9	75-125	0			
Arsenic	0.1011	0.00019	0.0050	0.1	0.006828	94.3	75-125	0			
Barium	0.4122	0.00057	0.0050	0.1	0.3241	88.1	75-125	0			
Beryllium	0.09882	0.00013	0.0020	0.1	-0.000011	98.8	75-125	0			
Cadmium	0.09328	0.00014	0.0020	0.1	-0.0000033	93.3	75-125	0			
Calcium	65.31	0.22	0.50	10	58	73.1	75-125	0			SO
Chromium	0.09291	0.00061	0.0050	0.1	0.00171	91.2	75-125	0			
Cobalt	0.09268	0.00027	0.0050	0.1	0.0003597	92.3	75-125	0			
Iron	10.69	0.047	0.080	10	1.559	91.3	75-125	0			
Lead	0.09432	0.00022	0.0050	0.1	0.0001397	94.2	75-125	0			
Lithium	0.09756	0.0017	0.010	0.1	0.007989	89.6	75-125	0			
Magnesium	37.88	0.037	0.20	10	29.94	79.4	75-125	0			
Molybdenum	0.1319	0.00033	0.0050	0.1	0.0395	92.4	75-125	0			
Potassium	11.58	0.034	0.20	10	2.255	93.2	75-125	0			
Selenium	0.09429	0.00048	0.0050	0.1	-0.0003003	94.6	75-125	0			
Sodium	74.86	0.13	0.20	10	69.25	56.1	75-125	0			SO
Thallium	0.09256	0.00015	0.0050	0.1	-0.0000022	92.6	75-125	0			

MS Sample ID: 24051090-14CMS					Units: mg/L			Analysis Date: 5/28/2024 06:35 PM			
Client ID:		Run ID: ICPMS3_240528A			SeqNo: 10808286		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6876	0.015	0.020	0.5	0.1892	99.7	75-125	0			B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240879 Instrument ID ICPMS3 Method: SW6020B

MSD					Sample ID: 24051090-14CMSD			Units: mg/L		Analysis Date: 5/24/2024 10:44 PM		
Client ID:			Run ID: ICPMS3_240524A			SeqNo: 10804804		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.0993	0.00042	0.0050	0.1	-0.0000847	99.4	75-125	0.09479	4.65	20		
Arsenic	0.1076	0.00019	0.0050	0.1	0.006828	101	75-125	0.1011	6.25	20		
Barium	0.4151	0.00057	0.0050	0.1	0.3241	91	75-125	0.4122	0.695	20		
Beryllium	0.1042	0.00013	0.0020	0.1	-0.000011	104	75-125	0.09882	5.31	20		
Cadmium	0.09916	0.00014	0.0020	0.1	-0.0000033	99.2	75-125	0.09328	6.11	20		
Calcium	65.27	0.22	0.50	10	58	72.8	75-125	65.31	0.0489	20	SO	
Chromium	0.09897	0.00061	0.0050	0.1	0.00171	97.3	75-125	0.09291	6.31	20		
Cobalt	0.09843	0.00027	0.0050	0.1	0.0003597	98.1	75-125	0.09268	6.02	20		
Iron	11.25	0.047	0.080	10	1.559	96.9	75-125	10.69	5.12	20		
Lead	0.09998	0.00022	0.0050	0.1	0.0001397	99.8	75-125	0.09432	5.83	20		
Lithium	0.1024	0.0017	0.010	0.1	0.007989	94.4	75-125	0.09756	4.87	20		
Magnesium	37.77	0.037	0.20	10	29.94	78.3	75-125	37.88	0.296	20		
Molybdenum	0.1383	0.00033	0.0050	0.1	0.0395	98.8	75-125	0.1319	4.72	20		
Potassium	12.18	0.034	0.20	10	2.255	99.3	75-125	11.58	5.1	20		
Selenium	0.09409	0.00048	0.0050	0.1	-0.0003003	94.4	75-125	0.09429	0.214	20		
Sodium	74.97	0.13	0.20	10	69.25	57.2	75-125	74.86	0.146	20	SO	
Thallium	0.09813	0.00015	0.0050	0.1	-0.0000022	98.1	75-125	0.09256	5.84	20		

MSD					Sample ID: 24051090-14CMSD			Units: mg/L		Analysis Date: 5/28/2024 06:37 PM		
Client ID:			Run ID: ICPMS3_240528A			SeqNo: 10808287		Prep Date: 5/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron	0.7325	0.015	0.020	0.5	0.1892	109	75-125	0.6876	6.32	20	B	

The following samples were analyzed in this batch:	24050074-01B	24050074-02B	24050074-03B
	24050074-04B	24050077-01B	24050077-02B
	24050077-03B	24050077-04B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240950      Instrument ID ICPMS3      Method: SW6020B

MBLK					Units: mg/L			Analysis Date: 5/29/2024 01:21 AM			
Client ID:			Run ID: ICPMS3_240528A		SeqNo: 10808428		Prep Date: 5/28/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	0.0002277	0.00022	0.0050								J
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	0.04472	0.034	0.20								J
Selenium	U	0.00048	0.0050								
Sodium	0.1817	0.13	0.20								J
Thallium	U	0.00015	0.0050								

LCS					Units: mg/L			Analysis Date: 5/29/2024 01:22 AM			
Client ID:			Run ID: ICPMS3_240528A		SeqNo: 10808429		Prep Date: 5/28/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1043	0.00042	0.0050	0.1	0	104	80-120	0			
Arsenic	0.0975	0.00019	0.0050	0.1	0	97.5	80-120	0			
Barium	0.106	0.00057	0.0050	0.1	0	106	80-120	0			
Beryllium	0.09801	0.00013	0.0020	0.1	0	98	80-120	0			
Cadmium	0.1025	0.00014	0.0020	0.1	0	102	80-120	0			
Calcium	10.35	0.22	0.50	10	0	104	80-120	0			
Chromium	0.09905	0.00061	0.0050	0.1	0	99.1	80-120	0			
Cobalt	0.1015	0.00027	0.0050	0.1	0	102	80-120	0			
Iron	9.775	0.047	0.080	10	0	97.8	80-120	0			
Lead	0.1028	0.00022	0.0050	0.1	0	103	80-120	0			
Lithium	0.09145	0.0017	0.010	0.1	0	91.5	80-120	0			
Magnesium	10.11	0.037	0.20	10	0	101	80-120	0			
Molybdenum	0.1007	0.00033	0.0050	0.1	0	101	80-120	0			
Potassium	10	0.034	0.20	10	0	100	80-120	0			
Selenium	0.09373	0.00048	0.0050	0.1	0	93.7	80-120	0			
Sodium	10.25	0.13	0.20	10	0	103	80-120	0			
Thallium	0.09745	0.00015	0.0050	0.1	0	97.5	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240950 Instrument ID ICPMS3 Method: SW6020B

LCS		Sample ID: LCS-240950-240950				Units: mg/L		Analysis Date: 5/29/2024 05:25 PM			
Client ID:		Run ID: ICPMS3_240529A				SeqNo: 10813300		Prep Date: 5/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4961	0.015	0.020	0.5	0	99.2	80-120	0			

MS		Sample ID: 24050271-01BMS				Units: mg/L		Analysis Date: 5/29/2024 01:29 AM			
Client ID: SMMS-MW-11D-050124		Run ID: ICPMS3_240528A				SeqNo: 10808433		Prep Date: 5/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1017	0.00042	0.0050	0.1	0.0000715	102	75-125	0			
Arsenic	0.09713	0.00019	0.0050	0.1	0.000847	96.3	75-125	0			
Barium	0.1207	0.00057	0.0050	0.1	0.0171	104	75-125	0			
Beryllium	0.0954	0.00013	0.0020	0.1	0.0003674	95	75-125	0			
Cadmium	0.09986	0.00014	0.0020	0.1	0.001305	98.6	75-125	0			
Calcium	88.44	0.22	0.50	10	81.86	65.9	75-125	0			SO
Chromium	0.09485	0.00061	0.0050	0.1	0.005142	89.7	75-125	0			
Cobalt	0.1409	0.00027	0.0050	0.1	0.0445	96.4	75-125	0			
Iron	21.1	0.047	0.080	10	12.03	90.7	75-125	0			
Lead	0.1001	0.00022	0.0050	0.1	0.0005577	99.5	75-125	0			
Lithium	0.101	0.0017	0.010	0.1	0.0122	88.8	75-125	0			
Magnesium	28.21	0.037	0.20	10	19.47	87.4	75-125	0			
Molybdenum	0.09844	0.00033	0.0050	0.1	-0.0000561	98.5	75-125	0			
Potassium	13.03	0.034	0.20	10	3.558	94.8	75-125	0			
Selenium	0.09504	0.00048	0.0050	0.1	-0.000121	95.2	75-125	0			
Sodium	71.89	0.13	0.20	10	65.83	60.6	75-125	0			SO
Thallium	0.09534	0.00015	0.0050	0.1	0.0001353	95.2	75-125	0			

MS		Sample ID: 24050271-01BMS				Units: mg/L		Analysis Date: 5/29/2024 05:32 PM			
Client ID: SMMS-MW-11D-050124		Run ID: ICPMS3_240529A				SeqNo: 10813304		Prep Date: 5/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.6448	0.015	0.020	0.5	0.1873	91.5	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240950 Instrument ID ICPMS3 Method: SW6020B

MSD					Sample ID: 24050271-01BMSD			Units: mg/L		Analysis Date: 5/29/2024 01:31 AM		
Client ID: SMMS-MW-11D-050124					Run ID: ICPMS3_240528A			SeqNo: 10808434		Prep Date: 5/28/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.0993	0.00042	0.0050	0.1	0.0000715	99.2	75-125	0.1017	2.44	20		
Arsenic	0.09515	0.00019	0.0050	0.1	0.000847	94.3	75-125	0.09713	2.06	20		
Barium	0.1181	0.00057	0.0050	0.1	0.0171	101	75-125	0.1207	2.18	20		
Beryllium	0.09485	0.00013	0.0020	0.1	0.0003674	94.5	75-125	0.0954	0.579	20		
Cadmium	0.09741	0.00014	0.0020	0.1	0.001305	96.1	75-125	0.09986	2.49	20		
Calcium	87.98	0.22	0.50	10	81.86	61.3	75-125	88.44	0.52	20	SO	
Chromium	0.09434	0.00061	0.0050	0.1	0.005142	89.2	75-125	0.09485	0.538	20		
Cobalt	0.1401	0.00027	0.0050	0.1	0.0445	95.6	75-125	0.1409	0.517	20		
Iron	21.01	0.047	0.080	10	12.03	89.8	75-125	21.1	0.428	20		
Lead	0.09824	0.00022	0.0050	0.1	0.0005577	97.7	75-125	0.1001	1.87	20		
Lithium	0.09877	0.0017	0.010	0.1	0.0122	86.6	75-125	0.101	2.25	20		
Magnesium	28.08	0.037	0.20	10	19.47	86.1	75-125	28.21	0.481	20		
Molybdenum	0.09725	0.00033	0.0050	0.1	-0.0000561	97.3	75-125	0.09844	1.22	20		
Potassium	12.86	0.034	0.20	10	3.558	93	75-125	13.03	1.37	20		
Selenium	0.09204	0.00048	0.0050	0.1	-0.000121	92.2	75-125	0.09504	3.21	20		
Sodium	71.88	0.13	0.20	10	65.83	60.6	75-125	71.89	0.0061	20	SO	
Thallium	0.09433	0.00015	0.0050	0.1	0.0001353	94.2	75-125	0.09534	1.07	20		

MSD					Sample ID: 24050271-01BMSD			Units: mg/L		Analysis Date: 5/29/2024 05:34 PM		
Client ID: SMMS-MW-11D-050124					Run ID: ICPMS3_240529A			SeqNo: 10813305		Prep Date: 5/28/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron	0.6541	0.015	0.020	0.5	0.1873	93.4	75-125	0.6448	1.44	20		

The following samples were analyzed in this batch:	24050268-01B	24050268-02B	24050271-01B
	24050271-02B	24050271-03B	24050271-04B
	24050271-05B	24050274-01B	24050274-02B
	24050274-03B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 241096      Instrument ID ICPMS3      Method: SW6020B

MBLK		Sample ID: MBLK-241096-241096				Units: mg/L		Analysis Date: 5/30/2024 07:05 PM			
Client ID:		Run ID: ICPMS3_240530A				SeqNo: 10818234		Prep Date: 5/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	U	0.00048	0.0050								
Sodium	U	0.13	0.20								
Thallium	U	0.00015	0.0050								

LCS		Sample ID: LCS-241096-241096				Units: mg/L		Analysis Date: 5/30/2024 07:07 PM			
Client ID:		Run ID: ICPMS3_240530A				SeqNo: 10818235		Prep Date: 5/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1034	0.00042	0.0050	0.1	0	103	80-120	0			
Arsenic	0.09701	0.00019	0.0050	0.1	0	97	80-120	0			
Barium	0.1014	0.00057	0.0050	0.1	0	101	80-120	0			
Beryllium	0.1007	0.00013	0.0020	0.1	0	101	80-120	0			
Boron	0.5152	0.015	0.020	0.5	0	103	80-120	0			
Cadmium	0.1046	0.00014	0.0020	0.1	0	105	80-120	0			
Calcium	10.03	0.22	0.50	10	0	100	80-120	0			
Chromium	0.1028	0.00061	0.0050	0.1	0	103	80-120	0			
Cobalt	0.1036	0.00027	0.0050	0.1	0	104	80-120	0			
Iron	9.998	0.047	0.080	10	0	100	80-120	0			
Lead	0.1001	0.00022	0.0050	0.1	0	100	80-120	0			
Lithium	0.09696	0.0017	0.010	0.1	0	97	80-120	0			
Magnesium	10.25	0.037	0.20	10	0	103	80-120	0			
Molybdenum	0.1006	0.00033	0.0050	0.1	0	101	80-120	0			
Potassium	9.602	0.034	0.20	10	0	96	80-120	0			
Selenium	0.09429	0.00048	0.0050	0.1	0	94.3	80-120	0			
Sodium	10.11	0.13	0.20	10	0	101	80-120	0			
Thallium	0.09589	0.00015	0.0050	0.1	0	95.9	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 241096      Instrument ID ICPMS3      Method: SW6020B

MS		Sample ID: 24051090-02CMS				Units: mg/L		Analysis Date: 5/30/2024 07:40 PM			
Client ID:		Run ID: ICPMS3_240530A				SeqNo: 10818254		Prep Date: 5/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.09958	0.00042	0.0050	0.1	0	99.6	75-125	0			
Arsenic	0.09217	0.00019	0.0050	0.1	0	92.2	75-125	0			
Barium	0.1241	0.00057	0.0050	0.1	0.02698	97.1	75-125	0			
Beryllium	0.0934	0.00013	0.0020	0.1	0	93.4	75-125	0			
Cadmium	0.09999	0.00014	0.0020	0.1	0	100	75-125	0			
Calcium	87.49	0.22	0.50	10	86.55	9.35	75-125	0			SO
Chromium	0.0948	0.00061	0.0050	0.1	0.0006281	94.2	75-125	0			
Cobalt	0.09358	0.00027	0.0050	0.1	0	93.6	75-125	0			
Iron	9.35	0.047	0.080	10	0.07512	92.7	75-125	0			
Lead	0.09599	0.00022	0.0050	0.1	0	96	75-125	0			
Lithium	0.09932	0.0017	0.010	0.1	0	99.3	75-125	0			
Molybdenum	0.09784	0.00033	0.0050	0.1	0	97.8	75-125	0			
Potassium	9.706	0.034	0.20	10	0.3525	93.5	75-125	0			
Selenium	0.09544	0.00048	0.0050	0.1	0.0005445	94.9	75-125	0			
Sodium	12.47	0.13	0.20	10	3.41	90.6	75-125	0			
Thallium	0.09328	0.00015	0.0050	0.1	0	93.3	75-125	0			

MS		Sample ID: 24051090-02CMS				Units: mg/L		Analysis Date: 5/31/2024 02:26 PM			
Client ID:		Run ID: ICPMS3_240531A				SeqNo: 10822922		Prep Date: 5/29/2024		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.4914	0.15	0.20	0.5	0.01703	94.9	75-125	0			
Magnesium	42.5	0.37	2.0	10	34.55	79.4	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 241096 Instrument ID ICPMS3 Method: SW6020B

MSD					Sample ID: 24051090-02CMSD			Units: mg/L		Analysis Date: 5/30/2024 07:41 PM		
Client ID:					Run ID: ICPMS3_240530A			SeqNo: 10818255		Prep Date: 5/29/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1017	0.00042	0.0050	0.1	0	102	75-125	0.09958	2.14	20		
Arsenic	0.09341	0.00019	0.0050	0.1	0	93.4	75-125	0.09217	1.34	20		
Barium	0.1256	0.00057	0.0050	0.1	0.02698	98.6	75-125	0.1241	1.21	20		
Beryllium	0.09538	0.00013	0.0020	0.1	0	95.4	75-125	0.0934	2.09	20		
Cadmium	0.1018	0.00014	0.0020	0.1	0	102	75-125	0.09999	1.83	20		
Calcium	87.42	0.22	0.50	10	86.55	8.64	75-125	87.49	0.0812	20	SO	
Chromium	0.09646	0.00061	0.0050	0.1	0.0006281	95.8	75-125	0.0948	1.74	20		
Cobalt	0.09607	0.00027	0.0050	0.1	0	96.1	75-125	0.09358	2.63	20		
Iron	9.574	0.047	0.080	10	0.07512	95	75-125	9.35	2.37	20		
Lead	0.09793	0.00022	0.0050	0.1	0	97.9	75-125	0.09599	2	20		
Lithium	0.1012	0.0017	0.010	0.1	0	101	75-125	0.09932	1.91	20		
Molybdenum	0.1003	0.00033	0.0050	0.1	0	100	75-125	0.09784	2.45	20		
Potassium	9.82	0.034	0.20	10	0.3525	94.7	75-125	9.706	1.17	20		
Selenium	0.09469	0.00048	0.0050	0.1	0.0005445	94.1	75-125	0.09544	0.798	20		
Sodium	12.58	0.13	0.20	10	3.41	91.7	75-125	12.47	0.915	20		
Thallium	0.09444	0.00015	0.0050	0.1	0	94.4	75-125	0.09328	1.24	20		

MSD					Sample ID: 24051090-02CMSD			Units: mg/L		Analysis Date: 5/31/2024 02:27 PM		
Client ID:					Run ID: ICPMS3_240531A			SeqNo: 10822923		Prep Date: 5/29/2024		DF: 10
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron	0.5034	0.15	0.20	0.5	0.01703	97.3	75-125	0.4914	2.42	20		
Magnesium	43.21	0.37	2.0	10	34.55	86.5	75-125	42.5	1.66	20		

The following samples were analyzed in this batch:	24050074-02B	24050074-03B	24050077-01B
	24050077-02B	24050077-03B	24050077-04B
	24050274-04B	24050274-05B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239560 Instrument ID TDS Method: A2540 C-15

MBLK		Sample ID: MBLK-239560-239560					Units: mg/L		Analysis Date: 5/8/2024 10:00 AM			
Client ID:		Run ID: TDS_240508A					SeqNo: 10736030		Prep Date: 5/3/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Total Dissolved Solids	U	22	30									

LCS		Sample ID: LCS-239560-239560					Units: mg/L		Analysis Date: 5/8/2024 10:00 AM			
Client ID:		Run ID: TDS_240508A					SeqNo: 10736029		Prep Date: 5/3/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Total Dissolved Solids	498	22	30	495	0	101	85-109	0				

DUP		Sample ID: 24042088-01B DUP					Units: mg/L		Analysis Date: 5/8/2024 10:00 AM			
Client ID:		Run ID: TDS_240508A					SeqNo: 10736008		Prep Date: 5/3/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Total Dissolved Solids	3110	110	150	0	0	0	0-0	3080	0.969	10		

DUP		Sample ID: 24050002-01A DUP					Units: mg/L		Analysis Date: 5/8/2024 10:00 AM			
Client ID: SMMS-MW-2-042924		Run ID: TDS_240508A					SeqNo: 10736010		Prep Date: 5/3/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Total Dissolved Solids	233.3	37	50	0	0	0	0-0	230	1.44	10		

The following samples were analyzed in this batch: 24050002-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239714 Instrument ID TDS Method: A2540 C-15

MBLK		Sample ID: MBLK-239714-239714				Units: mg/L		Analysis Date: 5/9/2024 01:47 PM			
Client ID:		Run ID: TDS_240509A				SeqNo: 10742765		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids U 22 30

LCS		Sample ID: LCS-239714-239714				Units: mg/L		Analysis Date: 5/9/2024 01:47 PM			
Client ID:		Run ID: TDS_240509A				SeqNo: 10742764		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 500 22 30 495 0 101 85-109 0

DUP		Sample ID: 24050132-01F DUP				Units: mg/L		Analysis Date: 5/9/2024 01:47 PM			
Client ID:		Run ID: TDS_240509A				SeqNo: 10742754		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 1560 74 100 0 0 0 0-0 1527 2.16 10

DUP		Sample ID: 24050132-02F DUP				Units: mg/L		Analysis Date: 5/9/2024 01:47 PM			
Client ID:		Run ID: TDS_240509A				SeqNo: 10742756		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 913.3 37 50 0 0 0 0-0 883.3 3.34 10

The following samples were analyzed in this batch:

24050074-01A	24050074-02A	24050074-03A
24050074-04A	24050077-01A	24050077-02A
24050077-03A	24050077-04A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239801      Instrument ID TDS      Method: A2540 C-15

MBLK		Sample ID: MBLK-239801-239801				Units: mg/L		Analysis Date: 5/13/2024 12:08 PM			
Client ID:		Run ID: TDS_240513B				SeqNo: 10752249		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      U      22      30

LCS		Sample ID: LCS-239801-239801				Units: mg/L		Analysis Date: 5/13/2024 12:08 PM			
Client ID:		Run ID: TDS_240513B				SeqNo: 10752248		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      488      22      30      495      0      98.6      85-109      0

DUP		Sample ID: 24050293-02A DUP				Units: mg/L		Analysis Date: 5/13/2024 12:08 PM			
Client ID:		Run ID: TDS_240513B				SeqNo: 10752234		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      320      37      50      0      0      0      0-0      313.3      2.11      10

DUP		Sample ID: 24050293-08A DUP				Units: mg/L		Analysis Date: 5/13/2024 12:08 PM			
Client ID:		Run ID: TDS_240513B				SeqNo: 10752241		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      383.3      37      50      0      0      0      0-0      380      0.873      10

The following samples were analyzed in this batch:	24050271-01A	24050271-02A	24050271-03A
	24050271-04A	24050271-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 1SA Sampling

QC BATCH REPORT

Batch ID: 239816      Instrument ID TDS      Method: A2540 C-15

MBLK		Sample ID: MBLK-239816-239816				Units: mg/L		Analysis Date: 5/13/2024 09:23 AM			
Client ID:		Run ID: TDS_240513A				SeqNo: 10750450		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS		Sample ID: LCS-239816-239816				Units: mg/L		Analysis Date: 5/13/2024 09:23 AM			
Client ID:		Run ID: TDS_240513A				SeqNo: 10750449		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	504	22	30	495	0	102	85-109		0		

DUP		Sample ID: 24050274-01A DUP				Units: mg/L		Analysis Date: 5/13/2024 09:23 AM			
Client ID: SMMS-MW-1-050124		Run ID: TDS_240513A				SeqNo: 10750441		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	250	37	50	0	0	0	0-0	243.3	2.7	10	

The following samples were analyzed in this batch:

24050274-01A	24050274-02A	24050274-03A
24050274-04A	24050274-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239902 Instrument ID TDS Method: A2540 C-15

MBLK		Sample ID: MBLK-239902-239902				Units: mg/L		Analysis Date: 5/13/2024 01:03 PM			
Client ID:		Run ID: TDS_240513D				SeqNo: 10752826		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids U 22 30

LCS		Sample ID: LCS-239902-239902				Units: mg/L		Analysis Date: 5/13/2024 01:03 PM			
Client ID:		Run ID: TDS_240513D				SeqNo: 10752825		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 486 22 30 495 0 98.2 85-109 0

DUP		Sample ID: 24050237-09F DUP				Units: mg/L		Analysis Date: 5/13/2024 01:03 PM			
Client ID:		Run ID: TDS_240513D				SeqNo: 10752813		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 1040 74 100 0 0 0 0-0 1020 1.94 10

DUP		Sample ID: 24050525-01B DUP				Units: mg/L		Analysis Date: 5/13/2024 01:03 PM			
Client ID:		Run ID: TDS_240513D				SeqNo: 10752821		Prep Date: 5/9/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids 796.7 37 50 0 0 0 0-0 766.7 3.84 10

The following samples were analyzed in this batch: 24050268-01A 24050268-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R402866B Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-R402866B				Units: mg/L		Analysis Date: 5/1/2024 01:11 PM			
Client ID:		Run ID: IC4_240501A				SeqNo: 10717150		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-R402866B				Units: mg/L		Analysis Date: 5/1/2024 01:00 PM			
Client ID:		Run ID: IC4_240501A				SeqNo: 10717149		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.447	0.31	1.0	10	0	94.5	88-110	0			
Fluoride	1.947	0.067	0.10	2	0	97.4	86-121	0			
Sulfate	9.897	0.19	1.0	10	0	99	90-110	0			

MS		Sample ID: 24050002-01A MS				Units: mg/L		Analysis Date: 5/1/2024 02:29 PM			
Client ID: SMMS-MW-2-042924		Run ID: IC4_240501A				SeqNo: 10717158		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	130	3.1	10	100	37.02	93	88-110	0			
Fluoride	22.25	0.67	1.0	20	0	111	86-121	0			
Sulfate	152.6	1.9	10	100	52.24	100	90-110	0			

MSD		Sample ID: 24050002-01A MSD				Units: mg/L		Analysis Date: 5/1/2024 02:39 PM			
Client ID: SMMS-MW-2-042924		Run ID: IC4_240501A				SeqNo: 10717159		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	130.2	3.1	10	100	37.02	93.2	88-110	130	0.148	15	
Fluoride	22.11	0.67	1.0	20	0	111	86-121	22.25	0.604	15	
Sulfate	152.8	1.9	10	100	52.24	101	90-110	152.6	0.132	15	

The following samples were analyzed in this batch: 24050002-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R402968C Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-C-R402968C				Units: mg/L		Analysis Date: 5/2/2024 09:52 PM			
Client ID:		Run ID: IC4_240502A				SeqNo: 10722781		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-C-R402968C				Units: mg/L		Analysis Date: 5/2/2024 09:43 PM			
Client ID:		Run ID: IC4_240502A				SeqNo: 10722780		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.735	0.31	1.0	10	0	97.3	88-110	0			
Sulfate	10.16	0.19	1.0	10	0	102	90-110	0			

MS		Sample ID: 24050091-02A MS				Units: mg/L		Analysis Date: 5/2/2024 10:12 PM			
Client ID:		Run ID: IC4_240502A				SeqNo: 10722783		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.44	3.1	10	100	1.089	95.4	88-110	0			
Sulfate	106.2	1.9	10	100	6.787	99.4	90-110	0			

MSD		Sample ID: 24050091-02A MSD				Units: mg/L		Analysis Date: 5/2/2024 10:22 PM			
Client ID:		Run ID: IC4_240502A				SeqNo: 10722784		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	96.71	3.1	10	100	1.089	95.6	88-110	96.44	0.276	15	
Sulfate	106.5	1.9	10	100	6.787	99.7	90-110	106.2	0.239	15	

The following samples were analyzed in this batch:	24050074-01A	24050074-02A	24050074-03A
	24050074-04A	24050077-01A	24050077-02A
	24050077-03A	24050077-04A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403111B Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-B-R403111B				Units: mg/L		Analysis Date: 5/3/2024 04:15 PM			
Client ID:		Run ID: IC4_240503A				SeqNo: 10730127		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R403111B				Units: mg/L		Analysis Date: 5/3/2024 04:05 PM			
Client ID:		Run ID: IC4_240503A				SeqNo: 10730126		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.521	0.31	1.0	10	0	95.2	88-110	0			
Fluoride	2.083	0.067	0.10	2	0	104	86-121	0			
Sulfate	10.19	0.19	1.0	10	0	102	90-110	0			

MS		Sample ID: 24050074-03A MS				Units: mg/L		Analysis Date: 5/3/2024 06:41 PM			
Client ID: SMMS-P-1-043024		Run ID: IC4_240503A				SeqNo: 10730142		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	443.5	12	40	400	72.63	92.7	88-110	0			
Fluoride	80.28	2.7	4.0	80	4.1	95.2	86-121	0			
Sulfate	742.2	7.6	40	400	326.7	104	90-110	0			

MSD		Sample ID: 24050074-03A MSD				Units: mg/L		Analysis Date: 5/3/2024 06:51 PM			
Client ID: SMMS-P-1-043024		Run ID: IC4_240503A				SeqNo: 10730143		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	444.4	12	40	400	72.63	93	88-110	443.5	0.201	15	
Fluoride	88.33	2.7	4.0	80	4.1	105	86-121	80.28	9.55	15	
Sulfate	756.6	7.6	40	400	326.7	107	90-110	742.2	1.92	15	

The following samples were analyzed in this batch:	24050074-01A	24050074-02A	24050074-03A
	24050074-04A	24050077-01A	24050077-02A
	24050077-03A	24050077-04A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403205A Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-A-R403205A				Units: mg/L		Analysis Date: 5/7/2024 08:13 AM			
Client ID:		Run ID: IC4_240507A				SeqNo: 10735086		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-A-R403205A				Units: mg/L		Analysis Date: 5/7/2024 08:01 AM			
Client ID:		Run ID: IC4_240507A				SeqNo: 10735084		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.338	0.31	1.0	10	0	93.4	88-110	0			
Fluoride	1.945	0.067	0.10	2	0	97.2	86-121	0			
Sulfate	9.862	0.19	1.0	10	0	98.6	90-110	0			

MS		Sample ID: 24050051-10B MS				Units: mg/L		Analysis Date: 5/7/2024 12:25 PM			
Client ID:		Run ID: IC4_240507A				SeqNo: 10735088		Prep Date:		DF: 4	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	76.07	1.2	4.0	40	39.67	91	88-110	0			
Fluoride	8.034	0.27	0.40	8	0	100	86-121	0			
Sulfate	68.62	0.76	4.0	40	28.8	99.5	90-110	0			

MSD		Sample ID: 24050051-10B MSD				Units: mg/L		Analysis Date: 5/7/2024 12:35 PM			
Client ID:		Run ID: IC4_240507A				SeqNo: 10735089		Prep Date:		DF: 4	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	75.53	1.2	4.0	40	39.67	89.6	88-110	76.07	0.725	15	
Fluoride	7.922	0.27	0.40	8	0	99	86-121	8.034	1.4	15	
Sulfate	67.95	0.76	4.0	40	28.8	97.9	90-110	68.62	0.986	15	

The following samples were analyzed in this batch:

24050271-01A24050274-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403528B Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-B-R403528B				Units: mg/L		Analysis Date: 5/10/2024 02:07 PM			
Client ID:		Run ID: IC4_240510A				SeqNo: 10750294		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R403528B				Units: mg/L		Analysis Date: 5/10/2024 01:57 PM			
Client ID:		Run ID: IC4_240510A				SeqNo: 10750293		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.661	0.31	1.0	10	0	96.6	88-110	0			
Fluoride	2.077	0.067	0.10	2	0	104	86-121	0			
Sulfate	10.26	0.19	1.0	10	0	103	90-110	0			

MS		Sample ID: 24050545-02A MS				Units: mg/L		Analysis Date: 5/10/2024 04:42 PM			
Client ID:		Run ID: IC4_240510A				SeqNo: 10750297		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	189	3.1	10	100	94.68	94.3	88-110	0			
Fluoride	19.14	0.67	1.0	20	0	95.7	86-121	0			
Sulfate	185	1.9	10	100	84.52	100	90-110	0			

MSD		Sample ID: 24050545-02A MSD				Units: mg/L		Analysis Date: 5/10/2024 04:52 PM			
Client ID:		Run ID: IC4_240510A				SeqNo: 10750298		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	189.5	3.1	10	100	94.68	94.8	88-110	189	0.292	15	
Fluoride	18.98	0.67	1.0	20	0	94.9	86-121	19.14	0.845	15	
Sulfate	185.5	1.9	10	100	84.52	101	90-110	185	0.247	15	

The following samples were analyzed in this batch:

24050271-01A	24050271-02A	24050274-01A
24050274-02A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403594 Instrument ID Titrator 1 Method: A2320 B-11

MBLK		Sample ID: MB-R403594-R403594				Units: mg/L		Analysis Date: 5/13/2024 01:47 PM			
Client ID:		Run ID: TITRATOR 1_240513B				SeqNo: 10753077		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3) U 8.4 10

LCS		Sample ID: LCS-R403594-R403594				Units: mg/L		Analysis Date: 5/13/2024 01:47 PM			
Client ID:		Run ID: TITRATOR 1_240513B				SeqNo: 10753078		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3) 939.4 8.4 10 1000 0 93.9 90-110 0

DUP		Sample ID: 24050024-01A DUP				Units: mg/L		Analysis Date: 5/13/2024 01:47 PM			
Client ID:		Run ID: TITRATOR 1_240513B				SeqNo: 10753081		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3) 74.95 8.4 10 0 0 0 0-0 75.32 0.492 10

DUP		Sample ID: 24050074-01A DUP				Units: mg/L		Analysis Date: 5/13/2024 01:47 PM			
Client ID: SMMS-MW-9-043024		Run ID: TITRATOR 1_240513B				SeqNo: 10753083		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3) 111.1 8.4 10 0 0 0 0-0 118.9 6.8 10

The following samples were analyzed in this batch:

24050002-01A	24050074-01A	24050074-02A
24050074-03A	24050074-04A	24050077-01A
24050077-02A	24050077-03A	24050077-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403635B      Instrument ID IC4      Method: SW9056A

MBLK		Sample ID: MBLK-B-R403635B				Units: mg/L		Analysis Date: 5/13/2024 04:15 PM			
Client ID:		Run ID: IC4_240513A				SeqNo: 10755337		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

MBLK		Sample ID: MBLK-C-R403635B				Units: mg/L		Analysis Date: 5/13/2024 08:28 PM			
Client ID:		Run ID: IC4_240513A				SeqNo: 10755363		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R403635B				Units: mg/L		Analysis Date: 5/13/2024 04:05 PM			
Client ID:		Run ID: IC4_240513A				SeqNo: 10755336		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.452	0.31	1.0	10	0	94.5	88-110	0			
Fluoride	2.05	0.067	0.10	2	0	102	86-121	0			
Sulfate	10.08	0.19	1.0	10	0	101	90-110	0			

MS		Sample ID: 24050721-14A MS				Units: mg/L		Analysis Date: 5/13/2024 05:33 PM			
Client ID:		Run ID: IC4_240513A				SeqNo: 10755345		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	112.1	3.1	10	100	18.12	94	88-110	0			
Fluoride	20.05	0.67	1.0	20	0	100	86-121	0			
Sulfate	116.6	1.9	10	100	16.72	99.9	90-110	0			

MSD		Sample ID: 24050721-14A MSD				Units: mg/L		Analysis Date: 5/13/2024 05:43 PM			
Client ID:		Run ID: IC4_240513A				SeqNo: 10755346		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	111.7	3.1	10	100	18.12	93.6	88-110	112.1	0.333	15	
Fluoride	20.02	0.67	1.0	20	0	100	86-121	20.05	0.14	15	
Sulfate	116	1.9	10	100	16.72	99.3	90-110	116.6	0.523	15	

The following samples were analyzed in this batch:

24050271-02A	24050271-03A	24050271-04A
24050274-03A	24050274-04A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403681      Instrument ID Titrator 1      Method: A2320 B-11

MBLK		Sample ID: MB-R403681-R403681				Units: mg/L		Analysis Date: 5/14/2024 02:44 PM			
Client ID:		Run ID: TITRATOR 1_240514B				SeqNo: 10757962		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3)      U      8.4      10

LCS		Sample ID: LCS-R403681-R403681				Units: mg/L		Analysis Date: 5/14/2024 02:44 PM			
Client ID:		Run ID: TITRATOR 1_240514B				SeqNo: 10757963		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3)      933.3      8.4      10      1000      0      93.3      90-110      0

DUP		Sample ID: 24050271-01A DUP				Units: mg/L		Analysis Date: 5/14/2024 02:44 PM			
Client ID: SMMS-MW-11D-050124		Run ID: TITRATOR 1_240514B				SeqNo: 10757965		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3)      U      8.4      10      0      0      0      0-0      -2.52      0      10

DUP		Sample ID: 24050522-01B DUP				Units: mg/L		Analysis Date: 5/14/2024 02:44 PM			
Client ID:		Run ID: TITRATOR 1_240514B				SeqNo: 10757976		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Total (as CaCO3)      311      8.4      10      0      0      0      0-0      286.1      8.33      10

The following samples were analyzed in this batch:

24050271-01A	24050271-02A	24050271-03A
24050271-04A	24050271-05A	24050274-01A
24050274-02A	24050274-03A	24050274-04A
24050274-05A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403721A      Instrument ID IC4      Method: SW9056A

MBLK		Sample ID: MBLK-B-R403721A				Units: mg/L		Analysis Date: 5/14/2024 05:52 PM			
Client ID:		Run ID: IC4_240514A				SeqNo: 10759702		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R403721A				Units: mg/L		Analysis Date: 5/14/2024 05:42 PM			
Client ID:		Run ID: IC4_240514A				SeqNo: 10759701		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.877	0.31	1.0	10	0	98.8	88-110	0			
Fluoride	1.992	0.067	0.10	2	0	99.6	86-121	0			
Sulfate	10.14	0.19	1.0	10	0	101	90-110	0			

MS		Sample ID: 24050271-04A MS				Units: mg/L		Analysis Date: 5/14/2024 09:16 PM			
Client ID: SMMS-MW-99B-050124		Run ID: IC4_240514A				SeqNo: 10759723		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	463.2	12	40	400	86.93	94.1	88-110	0			
Fluoride	76.77	2.7	4.0	80	0	96	86-121	0			

MSD		Sample ID: 24050271-04A MSD				Units: mg/L		Analysis Date: 5/14/2024 09:26 PM			
Client ID: SMMS-MW-99B-050124		Run ID: IC4_240514A				SeqNo: 10759724		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	466.3	12	40	400	86.93	94.8	88-110	463.2	0.664	15	
Fluoride	78.03	2.7	4.0	80	0	97.5	86-121	76.77	1.62	15	
Sulfate	777.3	7.6	40	400	361.4	104	90-110	770.9	0.828	15	

The following samples were analyzed in this batch:

24050271-03A	24050271-04A	24050274-03A
24050274-04A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R403794 Instrument ID Titrator 1 Method: A2320 B-11

MBLK		Sample ID: MB-R403794-R403794				Units: mg/L			Analysis Date: 5/15/2024 10:50 AM			
Client ID:		Run ID: TITRATOR 1_240515A				SeqNo: 10763814			Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Total (as CaCO3)		U	8.4	10								

LCS		Sample ID: LCS-R403794-R403794				Units: mg/L			Analysis Date: 5/15/2024 10:50 AM			
Client ID:		Run ID: TITRATOR 1_240515A				SeqNo: 10763815			Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Total (as CaCO3)		976.3	8.4	10	1000	0	97.6	90-110	0			

DUP		Sample ID: 24050510-01B DUP				Units: mg/L			Analysis Date: 5/15/2024 10:50 AM			
Client ID:		Run ID: TITRATOR 1_240515A				SeqNo: 10763819			Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Total (as CaCO3)		281.2	8.4	10	0	0	0	0-0	277.6	1.29	10	

DUP		Sample ID: 24050893-01A DUP				Units: mg/L			Analysis Date: 5/15/2024 10:50 AM			
Client ID:		Run ID: TITRATOR 1_240515A				SeqNo: 10763836			Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Alkalinity, Total (as CaCO3)		256.4	8.4	10	0	0	0	0-0	265.2	3.39	10	

The following samples were analyzed in this batch: 24050268-01A 24050268-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R404427B Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-B-R404427B				Units: mg/L		Analysis Date: 5/23/2024 01:47 PM			
Client ID:		Run ID: IC4_240523A				SeqNo: 10794776		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R404427B				Units: mg/L		Analysis Date: 5/23/2024 01:37 PM			
Client ID:		Run ID: IC4_240523A				SeqNo: 10794775		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.783	0.31	1.0	10	0	97.8	88-110	0			
Fluoride	1.954	0.067	0.10	2	0	97.7	86-121	0			
Sulfate	10.16	0.19	1.0	10	0	102	90-110	0			

MS		Sample ID: 24051090-03A MS				Units: mg/L		Analysis Date: 5/23/2024 02:26 PM			
Client ID:		Run ID: IC4_240523A				SeqNo: 10794780		Prep Date:		DF: 4	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	69.72	1.2	4.0	40	29.9	99.6	88-110	0			
Fluoride	10.52	0.27	0.40	8	1.829	109	86-121	0			
Sulfate	52.84	0.76	4.0	40	12.35	101	90-110	0			

MSD		Sample ID: 24051090-03A MSD				Units: mg/L		Analysis Date: 5/23/2024 02:35 PM			
Client ID:		Run ID: IC4_240523A				SeqNo: 10794781		Prep Date:		DF: 4	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	70.02	1.2	4.0	40	29.9	100	88-110	69.72	0.435	15	
Fluoride	10.7	0.27	0.40	8	1.829	111	86-121	10.52	1.76	15	
Sulfate	53.09	0.76	4.0	40	12.35	102	90-110	52.84	0.471	15	

The following samples were analyzed in this batch:

24050268-01A	24050268-02A	24050271-05A
24050274-05A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R404583A Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-A-R404583A				Units: mg/L		Analysis Date: 5/24/2024 10:29 AM			
Client ID:		Run ID: IC4_240524A				SeqNo: 10802709		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-A-R404583A				Units: mg/L		Analysis Date: 5/24/2024 10:19 AM			
Client ID:		Run ID: IC4_240524A				SeqNo: 10802708		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Fluoride	2.091	0.067	0.10	2	0	105	86-121	0			
Sulfate	10.27	0.19	1.0	10	0	103	90-110	0			

MS		Sample ID: 24051103-01A MS				Units: mg/L		Analysis Date: 5/24/2024 01:13 PM			
Client ID:		Run ID: IC4_240524A				SeqNo: 10802715		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Fluoride	37.64	0.67	1.0	20	16.21	107	86-121	0			
Sulfate	173.3	1.9	10	100	64	109	90-110	0			

MSD		Sample ID: 24051103-01A MSD				Units: mg/L		Analysis Date: 5/24/2024 01:23 PM			
Client ID:		Run ID: IC4_240524A				SeqNo: 10802716		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Fluoride	37.45	0.67	1.0	20	16.21	106	86-121	37.64	0.519	15	
Sulfate	171.4	1.9	10	100	64	107	90-110	173.3	1.12	15	

The following samples were analyzed in this batch:

24050268-02A	24050271-05A	24050274-05A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050002  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: R404692A Instrument ID IC4 Method: SW9056A

MBLK		Sample ID: MBLK-A-R404692A				Units: mg/L		Analysis Date: 5/28/2024 11:48 AM			
Client ID:		Run ID: IC4_240528A				SeqNo: 10807242		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								

LCS		Sample ID: LCS-A-R404692A				Units: mg/L		Analysis Date: 5/28/2024 11:38 AM			
Client ID:		Run ID: IC4_240528A				SeqNo: 10807241		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.392	0.31	1.0	10	0	93.9	88-110	0			

MS		Sample ID: 24050274-05A MS				Units: mg/L		Analysis Date: 5/28/2024 12:07 PM			
Client ID: SMMS-MW-10D-050124		Run ID: IC4_240528A				SeqNo: 10807244		Prep Date:		DF: 160	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	3003	50	160	1600	1439	97.7	88-110	0			

MSD		Sample ID: 24050274-05A MSD				Units: mg/L		Analysis Date: 5/28/2024 12:17 PM			
Client ID: SMMS-MW-10D-050124		Run ID: IC4_240528A				SeqNo: 10807245		Prep Date:		DF: 160	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	3001	50	160	1600	1439	97.6	88-110	3003	0.0706	15	

The following samples were analyzed in this batch: 24050274-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666214

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 04, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Jacob Crook  
Project Manager

Purchase Order: 20-24050024  
Chain of Custody: 25681  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666214 GEL Work Order: 666214

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: SMMS-MW-2-042924  
Sample ID: 666214001  
Matrix: Ground Water  
Collect Date: 29-APR-24  
Receive Date: 04-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.0121	+/-0.739	1.42	+/-0.740	3.00	pCi/L			KP1	05/15/24	1009	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.550	+/-0.416	0.513	+/-0.425	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	80.4	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

**Client :** ALS Group USA, Corp  
3352 128th Ave

**Report Date:** May 22, 2024  
Page 1 of 2

**Contact:** Holland, Michigan

**Workorder:** Jodi Blouw

666214

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	2607971										
QC1205725144	665616001	DUP									
Radium-228		869		873	pCi/L	.488		(0%-20%)	KP1	05/15/24	10:04
		Uncert:	+/-25.1	+/-24.5							
		TPU:	+/-224	+/-224							
QC1205725145	LCS										
Radium-228	72.4			66.2	pCi/L		91.5	(75%-125%)	KP1	05/15/24	10:05
		Uncert:		+/-3.81							
		TPU:		+/-17.3							
QC1205725143	MB										
Radium-228			U	0.799	pCi/L				KP1	05/15/24	10:05
		Uncert:		+/-0.841							
		TPU:		+/-0.866							
Rad Ra-226											
Batch	2608649										
QC1205726761	666211001	DUP									
Radium-226		1.22		0.720	pCi/L	51.4		(0% - 100%)	MJ2	05/14/24	10:37
		Uncert:	+/-0.606	+/-0.455							
		TPU:	+/-0.659	+/-0.479							
QC1205726763	LCS										
Radium-226	26.9			21.7	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
		Uncert:		+/-2.38							
		TPU:		+/-4.88							
QC1205726760	MB										
Radium-226			U	-0.230	pCi/L				MJ2	05/14/24	10:37
		Uncert:		+/-0.260							
		TPU:		+/-0.260							
QC1205726762	666211001	MS									
Radium-226	134	1.22		109	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
		Uncert:	+/-0.606	+/-11.6							
		TPU:	+/-0.659	+/-27.2							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666214

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



666214

**Subcontractor:**

GEL Laboratories, LLC

2040 Savage Rd

Charleston, SC 29407

TEL: (843) 556-8171

FAX: (843) 766-1178

Acct #:

Salesperson

ALSHN Account

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

Date: 02-May-24COC ID: 25681Due Date: 29-May-24

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order		Project Name	24050002	A Radium 226/228 by 903/904											
Work Order		Project Number		B											
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C											
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D											
Address	3352 128th Ave	Address	3352 128th Ave	E											
				F											
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G											
Phone	(616) 399-6070	Phone	(616) 399-6070	H											
Fax	(616) 399-6185	Fax	(616) 399-6185	I											
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J											
<b>ALS Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date 24hr</b>	<b>Bottle</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	
24050002-01C	SMMS-MW-2-042924	Groundwater	29/Apr/2024 14:21	(2) 1LPNEAT	X										

**Comments:**

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

5-2-24 13:20 Thyasa Tatum 5/6/24 12:10



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>666214</b>	
Received By: <b>Thyasia Tatum</b>		Date Received: <b>5/14/24</b>	
Carrier and Tracking Number:		Little Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <b>U5310 1074 4197-110°C</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, is the Radioactive Shipment Survey Compliant? Yes <input type="checkbox"/> No <input type="checkbox"/>	
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>0</b> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below: PCBs Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
<b>Sample Receipt Criteria</b>		<b>Comments/Qualifiers (Required for Non-Conforming Items)</b>	
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe):
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	Preservation Method: Wet ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: _____
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	Temperature Device Serial #: <b>IR2-23</b> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe):
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes <input type="checkbox"/> No <input type="checkbox"/> NA (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes <input type="checkbox"/> No <input type="checkbox"/> NA (If unknown, select No) Are liquid VOA vials free of headspace? Yes <input type="checkbox"/> No <input type="checkbox"/> NA Sample ID's and containers affected:
8	Samples received within holding time?	<input checked="" type="checkbox"/>	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe):
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	Circle Applicable: No container count on COC Other (describe):
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	Circle Applicable: Not relinquished Other (describe):
Comments (Use Continuation Form if needed):  <b>U5310 1074 4197-17°C</b>			

PM (or PMA) review: Initials **AM** Date **5/20/24** Page **1** of **1**



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666214**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2607971

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666214001	SMMS-MW-2-042924
1205725143	Method Blank (MB)
1205725144	665616001(NonSDG) Sample Duplicate (DUP)
1205725145	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Preparation Information**

**Aliquot Reduced**

1205725144 (Non SDG 665616001DUP) Aliquot volume was reduced due to the sample matrix. dark brown liquid  
1205725144 (Non SDG 665616001DUP).

**Homogenous Matrix**

Sample 1205725144 (Non SDG 665616001DUP) was non-homogenous matrix. dark brown liquid 1205725144 (Non SDG 665616001DUP).

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2608649

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666214001	SMMS-MW-2-042924
1205726760	Method Blank (MB)
1205726761	666211001(SMMS-MW-99A-043024) Sample Duplicate (DUP)
1205726762	666211001(SMMS-MW-99A-043024) Matrix Spike (MS)
1205726763	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.



**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information****Additional Comments**

The matrix spike, 1205726762 (SMMS-MW-99A-043024MS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666215

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 04, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24050077  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666215 GEL Work Order: 666215

**The Qualifiers in this report are defined as follows:**

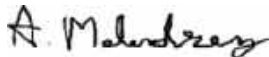
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: SMMS-MW-9-043024  
Sample ID: 666215001  
Matrix: Ground Water  
Collect Date: 30-APR-24  
Receive Date: 04-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.213	+/-0.791	1.44	+/-0.793	3.00	pCi/L			KP1	05/15/24	1005	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.0381	+/-0.308	0.714	+/-0.308	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	94.4	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-14S-043024

Sample ID: 666215002

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.311	+/-0.841	1.52	+/-0.845	3.00	pCi/L			KP1	05/15/24	1005	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.708	+/-0.447	0.489	+/-0.470	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	82.8	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-P-1-043024

Sample ID: 666215003

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.725	+/-0.825	1.38	+/-0.846	3.00	pCi/L			KP1	05/15/24	1005	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.576	+/-0.406	0.450	+/-0.416	1.00	pCi/L			MJ2	05/14/24	1037	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	89.4	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-FB-01-043024

Sample ID: 666215004

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.612	+/-0.843	1.45	+/-0.857	3.00	pCi/L			KP1	05/15/24	1005	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.218	+/-0.428	0.805	+/-0.430	1.00	pCi/L			MJ2	05/14/24	1037	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	76.8	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Client : ALS Group USA, Corp  
3352 128th Ave

Report Date: May 22, 2024  
Page 1 of 2

Holland, Michigan

Contact: Jodi Blouw

Workorder: 666215

Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow												
Batch	2607971											
QC1205725144	665616001	DUP										
Radium-228			869		873	pCi/L	.488		(0%-20%)	KP1	05/15/24	10:04
			Uncert:	+/-25.1	+/-24.5							
			TPU:	+/-224	+/-224							
QC1205725145	LCS											
Radium-228		72.4			66.2	pCi/L		91.5	(75%-125%)	KP1	05/15/24	10:05
			Uncert:		+/-3.81							
			TPU:		+/-17.3							
QC1205725143	MB											
Radium-228				U	0.799	pCi/L				KP1	05/15/24	10:05
			Uncert:		+/-0.841							
			TPU:		+/-0.866							
Rad Ra-226												
Batch	2608649											
QC1205726761	666211001	DUP										
Radium-226			1.22		0.720	pCi/L	51.4		(0% - 100%)	MJ2	05/14/24	10:37
			Uncert:	+/-0.606	+/-0.455							
			TPU:	+/-0.659	+/-0.479							
QC1205726763	LCS											
Radium-226		26.9			21.7	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
			Uncert:		+/-2.38							
			TPU:		+/-4.88							
QC1205726760	MB											
Radium-226				U	-0.230	pCi/L				MJ2	05/14/24	10:37
			Uncert:		+/-0.260							
			TPU:		+/-0.260							
QC1205726762	666211001	MS										
Radium-226		134	1.22		109	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
			Uncert:	+/-0.606	+/-11.6							
			TPU:	+/-0.659	+/-27.2							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666215

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**Subcontractor:**

GEL Laboratories, LLC

2040 Savage Rd

Charleston, SC 29407

TEL: (843) 556-8171

FAX: (843) 766-1178

Acct #:

Salesperson

ALSHN Account

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

Date: 02-May-24COC D: 25683Due Date: 29-May-24

666215

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	24050074	A	Radium 226/228 by 903/904											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D												
Address	3352 128th Ave	Address	3352 128th Ave	E												
				F												
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24050074-01C	SMMS-MW-9-043024	Groundwater	30/Apr/2024 9:55	(2) 1LPNEAT	X									
24050074-02C	SMMS-MW-14S-043024	Groundwater	30/Apr/2024 12:38	(2) 1LPNEAT	X									
24050074-03C	SMMS-P-1-043024	Groundwater	30/Apr/2024 14:17	(2) 1LPNEAT	X									
24050074-04C	SMMS-FB-01-043024	Groundwater	30/Apr/2024 14:20	(2) 1LPNEAT	X									

**Comments:**

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std



## SAMPLE RECEIPT &amp; REVIEW FORM

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>666213</b>	
Received By: <b>Thyasia Tatum</b>		Date Received: <b>5/12/24</b>	
Carrier and Tracking Number		FedEx Express <input checked="" type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <input type="checkbox"/> <b>W530 1074 4197-110°C</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes <input type="checkbox"/> No <input type="checkbox"/>	
B) Did the client designate the samples are to be received as radioactive?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>0</b> CPM / mR/hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If D or E is yes, select Hazards below. PCB <input type="checkbox"/> Flammable <input type="checkbox"/> Foreign Soil <input type="checkbox"/> RCRA <input type="checkbox"/> Asbestos <input type="checkbox"/> Beryllium <input type="checkbox"/> Other: _____	
Sample Receipt Criteria		Comments/Qualifiers (Required for Non-Conforming Items)	
1	Shipping containers received intact and sealed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Preservation Method: Wet Ice <input checked="" type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None <input type="checkbox"/> Other: _____ *all temperatures are recorded in Celsius TEMP: _____
4	Daily check performed and passed on IR temperature gun?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temperature Device Serial #: 1R2-23 Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sample IDs and Containers Affected: _____ If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> (If unknown, select No) Are liquid VOA vials free of headspace? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Sample IDs and containers affected: _____
8	Samples received within holding time?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	ID's and test's affected: _____
9	Sample ID's on COC match ID's on bottles?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	ID's and containers affected: _____
10	Date & time on COC match date & time on bottles?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed):  <b>W530 1074 4197-110°C</b>			

PM (or PMA) review: Initials

AM

Date 5/20/24

Page 1 of 1



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666215**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2607971

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666215001	SMMS-MW-9-043024
666215002	SMMS-MW-14S-043024
666215003	SMMS-P-1-043024
666215004	SMMS-FB-01-043024
1205725143	Method Blank (MB)
1205725144	665616001(NonSDG) Sample Duplicate (DUP)
1205725145	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Preparation Information**

**Aliquot Reduced**

1205725144 (Non SDG 665616001DUP) Aliquot volume was reduced due to the sample matrix. dark brown liquid  
1205725144 (Non SDG 665616001DUP).

**Homogenous Matrix**

Sample 1205725144 (Non SDG 665616001DUP) was non-homogenous matrix. dark brown liquid 1205725144 (Non SDG 665616001DUP).

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2608649

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666215001	SMMS-MW-9-043024
666215002	SMMS-MW-14S-043024
666215003	SMMS-P-1-043024
666215004	SMMS-FB-01-043024



1205726760	Method Blank (MB)
1205726761	666211001(SMMS-MW-99A-043024) Sample Duplicate (DUP)
1205726762	666211001(SMMS-MW-99A-043024) Matrix Spike (MS)
1205726763	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information**

**Additional Comments**

The matrix spike, 1205726762 (SMMS-MW-99A-043024MS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666211

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 04, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,



Jacob Crook  
Project Manager

Purchase Order: 20-24050074  
Chain of Custody: 25684  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666211 GEL Work Order: 666211

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: SMMS-MW-99A-043024  
Sample ID: 666211001  
Matrix: Ground Water  
Collect Date: 30-APR-24  
Receive Date: 04-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.239	+/-1.01	1.86	+/-1.02	3.00	pCi/L			KP1	05/15/24	1004	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		1.22	+/-0.606	0.552	+/-0.659	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	84.4	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-3-043024

Sample ID: 666211002

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		4.92	+/-1.28	1.39	+/-1.80	3.00	pCi/L			KP1	05/15/24	1004	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.485	+/-0.430	0.603	+/-0.444	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	86.5	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-4-043024

Sample ID: 666211003

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.993	+/-1.06	1.76	+/-1.09	3.00	pCi/L			KP1	05/15/24	1258	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.513	+/-0.458	0.626	+/-0.469	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	85.9	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-5-043024

Sample ID: 666211004

Matrix: Ground Water

Collect Date: 30-APR-24

Receive Date: 04-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	-0.365	+/-1.13	2.12	+/-1.13	3.00	pCi/L			KP1	05/15/24	1005	2607971	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.353	+/-0.314	0.375	+/-0.320	1.00	pCi/L			MJ2	05/14/24	1018	2608649	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2607971	88.6	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: May 22, 2024

Page 1 of 2

Client : ALS Group USA, Corp  
3352 128th Ave

Holland, Michigan

Contact: Jodi Blouw

Workorder: 666211

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	2607971										
QC1205725144	665616001	DUP									
Radium-228		869		873	pCi/L	.488		(0%-20%)	KP1	05/15/24	10:04
		Uncert:	+/-25.1	+/-24.5							
		TPU:	+/-224	+/-224							
QC1205725145	LCS										
Radium-228	72.4			66.2	pCi/L		91.5	(75%-125%)	KP1	05/15/24	10:05
		Uncert:		+/-3.81							
		TPU:		+/-17.3							
QC1205725143	MB										
Radium-228			U	0.799	pCi/L				KP1	05/15/24	10:05
		Uncert:		+/-0.841							
		TPU:		+/-0.866							
Rad Ra-226											
Batch	2608649										
QC1205726761	666211001	DUP									
Radium-226		1.22		0.720	pCi/L	51.4		(0% - 100%)	MJ2	05/14/24	10:37
		Uncert:	+/-0.606	+/-0.455							
		TPU:	+/-0.659	+/-0.479							
QC1205726763	LCS										
Radium-226	26.9			21.7	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
		Uncert:		+/-2.38							
		TPU:		+/-4.88							
QC1205726760	MB										
Radium-226			U	-0.230	pCi/L				MJ2	05/14/24	10:37
		Uncert:		+/-0.260							
		TPU:		+/-0.260							
QC1205726762	666211001	MS									
Radium-226	134	1.22		109	pCi/L		80.5	(75%-125%)	MJ2	05/14/24	10:37
		Uncert:	+/-0.606	+/-11.6							
		TPU:	+/-0.659	+/-27.2							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666211

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**Subcontractor:**

GEL Laboratories, LLC

2040 Savage Rd

Charleston, SC 29407

TEL: (843) 556-8171

FAX: (843) 766-1178

Acct #:

Salesperson

ALSHN Account

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

666211

Date: 02-May-24COC ID: 25684Due Date: 29-May-24

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	24050077	A	Radium 226/228 by 903/904											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D												
Address	3352 128th Ave	Address	3352 128th Ave	E												
				F												
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24050077-01C	SMMS-MW-99A-043024	Groundwater	30/Apr/2024 12:00	(2) 1LPNEAT	X									
24050077-02C	SMMS-MW-3-043024	Groundwater	30/Apr/2024 12:25	(2) 1LPNEAT	X									
24050077-03C	SMMS-MW-4-043024	Groundwater	30/Apr/2024 13:30	(2) 1LPNEAT	X									
24050077-04C	SMMS-MW-5-043024	Groundwater	30/Apr/2024 14:40	(2) 1LPNEAT	X									

**Comments:**

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSF</b>	SDG/AR/COC/Work Order: <b>666211</b>
Received By: <b>Thyasia Tatum</b>	Date Received: <b>5/12/24</b>
Carrier and Tracking Number	Circle Applicable: <input checked="" type="radio"/> FedEx Express <input type="radio"/> FedEx Ground <input type="radio"/> UPS <input type="radio"/> Field Services <input type="radio"/> Courier <input type="radio"/> Other <b>105310 1074 4197-110°C</b>

Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>0</b> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below: PCBs Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____

Sample Receipt Criteria	Yes	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe): _____
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Wet Ice Ice Packs Dry ice None Other: _____ *all temperatures are recorded in Celsius TEMP: _____
4 Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <b>182-23</b> Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe): _____
6 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and Containers Affected: _____ If Preservation added, Lot#: _____ If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer)
7 Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected: _____
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID's and containers affected: _____
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe): _____
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: No container count on COC Other (describe): _____
12 Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Not relinquished Other (describe): _____

Comments (Use Continuation Form if needed):

**105310 1074 4197-110°C**

PM (or PMA) review: Initials **AM** Date **5/20/24** Page **1** of **1**



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666211**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2607971

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666211001	SMMS-MW-99A-043024
666211002	SMMS-MW-3-043024
666211003	SMMS-MW-4-043024
666211004	SMMS-MW-5-043024
1205725143	Method Blank (MB)
1205725144	665616001(NonSDG) Sample Duplicate (DUP)
1205725145	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Preparation Information**

**Aliquot Reduced**

1205725144 (Non SDG 665616001DUP) Aliquot volume was reduced due to the sample matrix. dark brown liquid  
1205725144 (Non SDG 665616001DUP).

**Homogenous Matrix**

Sample 1205725144 (Non SDG 665616001DUP) was non-homogenous matrix. dark brown liquid 1205725144 (Non SDG 665616001DUP).

**Technical Information**

**Recounts**

Sample 666211003 (SMMS-MW-4-043024) was recounted due to results more negative than the three sigma TPU.  
The second count is reported.

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2608649



The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666211001	SMMS-MW-99A-043024
666211002	SMMS-MW-3-043024
666211003	SMMS-MW-4-043024
666211004	SMMS-MW-5-043024
1205726760	Method Blank (MB)
1205726761	666211001(SMMS-MW-99A-043024) Sample Duplicate (DUP)
1205726762	666211001(SMMS-MW-99A-043024) Matrix Spike (MS)
1205726763	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

#### **Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

#### **Miscellaneous Information**

##### **Additional Comments**

The matrix spike, 1205726762 (SMMS-MW-99A-043024MS), aliquot was reduced to conserve sample volume.

#### **Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666582

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 08, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The containers were preserved upon receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24050268  
Chain of Custody: 25737  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666582 GEL Work Order: 666582

**The Qualifiers in this report are defined as follows:**

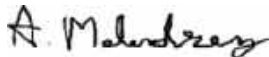
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave  
  
Holland, Michigan 49424  
Contact: Jodi Blouw  
Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: 24050268-01C  
Sample ID: 666582001  
Matrix: Ground Water  
Collect Date: 02-MAY-24  
Receive Date: 08-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.56	+/-1.27	2.03	+/-1.33	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.823	+/-0.451	0.357	+/-0.481	1.00	pCi/L			MJ2	05/21/24	0922	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	75.8	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050268-02C

Sample ID: 666582002

Matrix: Ground Water

Collect Date: 02-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.158	+/-0.645	1.21	+/-0.647	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.381	+/-0.339	0.405	+/-0.346	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	85.5	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

**Client :** ALS Group USA, Corp  
3352 128th Ave

**Report Date:** May 22, 2024  
**Page** 1 of 2

**Contact:** Holland, Michigan

**Workorder:** Jodi Blouw

666582

Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow												
Batch	2609216											
QC1205727903	666582001	DUP										
Radium-228		U	1.56		1.65	pCi/L	5.2		(0% - 100%)	KP1	05/15/24	11:10
		Uncert:	+/-1.27		+/-0.995							
		TPU:	+/-1.33		+/-1.08							
QC1205727904	LCS											
Radium-228		71.6			65.2	pCi/L		91	(75%-125%)	KP1	05/15/24	11:10
		Uncert:			+/-3.73							
		TPU:			+/-17.0							
QC1205727902	MB											
Radium-228				U	0.726	pCi/L				KP1	05/15/24	11:10
		Uncert:			+/-0.900							
		TPU:			+/-0.919							
Rad Ra-226												
Batch	2609231											
QC1205727928	666582001	DUP										
Radium-226			0.823		1.07	pCi/L	25.7		(0% - 100%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451		+/-0.565							
		TPU:	+/-0.481		+/-0.597							
QC1205727930	LCS											
Radium-226		27.0			27.0	pCi/L		100	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:			+/-2.88							
		TPU:			+/-5.54							
QC1205727927	MB											
Radium-226				U	0.236	pCi/L				MJ2	05/21/24	10:48
		Uncert:			+/-0.271							
		TPU:			+/-0.276							
QC1205727929	666582001	MS										
Radium-226		134	0.823		153	pCi/L		113	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451		+/-13.7							
		TPU:	+/-0.481		+/-32.8							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666582

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**Subcontractor:**

GEL Laboratories, LLC

2040 Savage Rd

Charleston, SC 29407

TEL: (843) 556-8171

FAX: (843) 766-1178

Acct #:

Salesperson

ALSHN Account

**CHAIN-OF-CUSTODY RECORD**

Page 1 of 1

Date: 07-May-24COC ID: 25737Due Date: 30-May-24

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order		Project Name	24050268	A	Radium 226/228 by 903/904										
Work Order		Project Number		B											
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C											
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D											
Address	3352 128th Ave	Address	3352 128th Ave	E											
				F											
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G											
Phone	(616) 399-6070	Phone	(616) 399-6070	H											
Fax	(616) 399-6185	Fax	(616) 399-6185	I											
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J											
<b>ALS Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collection Date 24hr</b>	<b>Bottle</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	
24050268-01C	SMMS-MW-15-050224	Groundwater	2/May/2024 10:00	(2) 1LPNEAT	X										
24050268-02C	SMMS-MW-16-050224	Groundwater	2/May/2024 11:20	(2) 1LPNEAT	X										

**Comments:**

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time

5-7-24

5/8/24 9:20



## SAMPLE RECEIPT &amp; REVIEW FORM

Client: <u>ALSE</u>		SDG/AR/COC/Work Order: <u>666582</u>	
Received By: <u>QG</u>		Date Received: <u>5/8/24</u>	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		<u>4534 1024 4425 02</u>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below: PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
Sample Receipt Criteria		Yes <input type="checkbox"/> NA <input type="checkbox"/> No <input type="checkbox"/>	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: <input checked="" type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container <input type="checkbox"/> Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> Client contacted and provided COC <input type="checkbox"/> COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	Preservation Method: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None <input type="checkbox"/> Other: *all temperatures are recorded in Celsius TEMP: _____
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	Temperature Device Serial #: <u>JR1-23</u> Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container <input type="checkbox"/> Other (describe)
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: <u>all containers came unpreserved</u> If Preservation added, Lot#: <u>240312BD</u>
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected:
8	Samples received within holding time?	<input checked="" type="checkbox"/>	ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> No dates on containers <input type="checkbox"/> No times on containers <input type="checkbox"/> COC missing info <input type="checkbox"/> Other (describe)
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> No container count on COC <input type="checkbox"/> Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> Not relinquished <input type="checkbox"/> Other (describe)
Comments (Use Continuation Form if needed): <u>4354 1024 4425 12</u>			



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666582**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2609216

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666582001	24050268-01C
666582002	24050268-02C
1205727902	Method Blank (MB)
1205727903	666582001(24050268-01C) Sample Duplicate (DUP)
1205727904	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2609231

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666582001	24050268-01C
666582002	24050268-02C
1205727927	Method Blank (MB)
1205727928	666582001(24050268-01C) Sample Duplicate (DUP)
1205727929	666582001(24050268-01C) Matrix Spike (MS)
1205727930	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information**



**Additional Comments**

The matrix spike, 1205727929 (24050268-01CMS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666584

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 08, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The containers were preserved upon receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24050271  
Chain of Custody: 25738  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666584 GEL Work Order: 666584

**The Qualifiers in this report are defined as follows:**

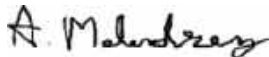
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave  
  
Holland, Michigan 49424  
Contact: Jodi Blouw  
Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: 24050271-01C  
Sample ID: 666584001  
Matrix: Ground Water  
Collect Date: 01-MAY-24  
Receive Date: 08-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		1.53	+/-0.928	1.37	+/-1.01	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.672	+/-0.446	0.472	+/-0.460	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	84.3	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050271-02C  
Sample ID: 666584002  
Matrix: Ground Water  
Collect Date: 01-MAY-24  
Receive Date: 08-MAY-24  
Collector: Client

Report Date: May 22, 2024

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b> <i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		4.83	+/-1.22	1.30	+/-1.74	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b> <i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.652	+/-0.493	0.573	+/-0.502	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	91.5	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050271-03C

Sample ID: 666584003

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	-0.141	+/-0.862	1.72	+/-0.862	3.00	pCi/L			KP1	05/15/24	1258	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.400	+/-0.386	0.576	+/-0.394	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	79.2	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050271-04C

Sample ID: 666584004

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.492	+/-0.649	1.11	+/-0.661	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.178	+/-0.389	0.773	+/-0.390	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	84.7	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050271-05C  
Sample ID: 666584005  
Matrix: Ground Water  
Collect Date: 01-MAY-24  
Receive Date: 08-MAY-24  
Collector: Client

Report Date: May 22, 2024

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b> <i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	-0.0295	+/-1.27	2.32	+/-1.27	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b> <i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.738	+/-0.466	0.509	+/-0.481	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	80.5	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## QC Summary

**Client :** ALS Group USA, Corp  
3352 128th Ave

**Report Date:** May 22, 2024  
Page 1 of 2

**Contact:** Holland, Michigan

**Workorder:** Jodi Blouw

666584

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	2609216										
QC1205727903	666582001	DUP									
Radium-228		U	1.56	1.65	pCi/L	5.2		(0% - 100%)	KP1	05/15/24	11:10
		Uncert:	+/-1.27	+/-0.995							
		TPU:	+/-1.33	+/-1.08							
QC1205727904	LCS										
Radium-228		71.6		65.2	pCi/L		91	(75%-125%)	KP1	05/15/24	11:10
		Uncert:		+/-3.73							
		TPU:		+/-17.0							
QC1205727902	MB										
Radium-228			U	0.726	pCi/L				KP1	05/15/24	11:10
		Uncert:		+/-0.900							
		TPU:		+/-0.919							
Rad Ra-226											
Batch	2609231										
QC1205727928	666582001	DUP									
Radium-226			0.823	1.07	pCi/L	25.7		(0% - 100%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451	+/-0.565							
		TPU:	+/-0.481	+/-0.597							
QC1205727930	LCS										
Radium-226		27.0		27.0	pCi/L		100	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:		+/-2.88							
		TPU:		+/-5.54							
QC1205727927	MB										
Radium-226			U	0.236	pCi/L				MJ2	05/21/24	10:48
		Uncert:		+/-0.271							
		TPU:		+/-0.276							
QC1205727929	666582001	MS									
Radium-226		134	0.823	153	pCi/L		113	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451	+/-13.7							
		TPU:	+/-0.481	+/-32.8							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666584

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





Subcontractor:  
GEL Laboratories, LLC  
2040 Savage Rd  
Charleston, SC 29407

TEL: (843) 556-8171  
FAX: (843) 766-1178  
Acct #

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 07-May-24  
COC ID: 25738  
Due Date: 30-May-24

Salesperson: ALSHN Account

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	24050271	A	Radium 226,228 by 903/904											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D												
Address	3352 128th Ave	Address	3352 128th Ave	E												
				F												
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24050271-01C	SMMS-MW-11D-050124	Groundwater	1/May/2024 10:55	(2) 1LPNEAT	X									
24050271-02C	SMMS-MW-11S-050124	Groundwater	1/May/2024 12:00	(2) 1LPNEAT	X									
24050271-03C	SMMS-MW-6-050124	Groundwater	1/May/2024 13:31	(2) 1LPNEAT	X									
24050271-04C	SMMS-MW-99B-050124	Groundwater	1/May/2024 14:00	(2) 1LPNEAT	X									
24050271-05C	SMMS-MW-13BR-050124	Groundwater	1/May/2024 15:00	(2) 1LPNEAT	X									

## Comments:

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by: [Signature] Date/Time: 5-7-24 2:15 PM Received by: [Signature] Date/Time: 5/8/24 2:20

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Cooler IDs

Report/QC Level

Std



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>666584</b>	
Received By: <b>QG</b>		Date Received: <b>5/8/24</b>	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		<b>6534 1074 4429 00</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below: PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:	
<b>Sample Receipt Criteria</b>	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<b>Comments/Qualifiers (Required for Non-Conforming Items)</b>	
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: <input checked="" type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container <input type="checkbox"/> Other (describe)	
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	Circle Applicable: Client contacted and provided COC    COC created upon receipt	
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	Preservation Method: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None <input type="checkbox"/> Other: *all temperatures are recorded in Celsius    TEMP: _____	
4 Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	Temperature Device Serial #: <b>IR1-23</b> Secondary Temperature Device Serial # (If Applicable):	
5 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container <input type="checkbox"/> Other (describe)	
6 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: <b>all containers came unpreserved</b> If Preservation added, Lot#: <b>2403176P</b>	
7 Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected:	
8 Samples received within holding time?	<input checked="" type="checkbox"/>	ID's and tests affected:	
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	ID's and containers affected:	
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	Circle Applicable: No dates on containers    No times on containers    COC missing info    Other (describe)	
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	Circle Applicable: No container count on COC    Other (describe)	
12 Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>		
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	Circle Applicable: Not relinquished    Other (describe)	
Comments (Use Continuation Form if needed): <b>6534 1074 4430 10</b>			



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666584**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2609216

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666584001	24050271-01C
666584002	24050271-02C
666584003	24050271-03C
666584004	24050271-04C
666584005	24050271-05C
1205727902	Method Blank (MB)
1205727903	666582001(24050268-01C) Sample Duplicate (DUP)
1205727904	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Technical Information**

**Recounts**

Sample 666584003 (24050271-03C) was recounted due to results more negative than the three sigma TPU. The second count is reported.

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2609231

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666584001	24050271-01C
666584002	24050271-02C
666584003	24050271-03C
666584004	24050271-04C
666584005	24050271-05C
1205727927	Method Blank (MB)
1205727928	666582001(24050268-01C) Sample Duplicate (DUP)



1205727929	666582001(24050268-01C) Matrix Spike (MS)
1205727930	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information**

**Additional Comments**

The matrix spike, 1205727929 (24050268-01CMS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



May 22, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 666587

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 08, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The containers were preserved upon receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,

Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24050274  
Chain of Custody: 25739  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 666587 GEL Work Order: 666587

**The Qualifiers in this report are defined as follows:**

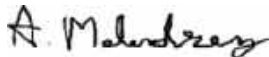
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave  
  
Holland, Michigan 49424  
Contact: Jodi Blouw  
Project: Holland - Blouw L2

Report Date: May 22, 2024

Client Sample ID: 24050274-01C  
Sample ID: 666587001  
Matrix: Ground Water  
Collect Date: 01-MAY-24  
Receive Date: 08-MAY-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		1.72	+/-1.05	1.60	+/-1.14	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		1.39	+/-0.743	0.838	+/-0.778	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	85.3	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050274-02C

Sample ID: 666587002

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.0645	+/-0.839	1.56	+/-0.839	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.0699	+/-0.217	0.491	+/-0.217	1.00	pCi/L			MJ2	05/21/24	1013	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	83	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050274-03C

Sample ID: 666587003

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.548	+/-0.887	1.55	+/-0.898	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.488	+/-0.366	0.381	+/-0.380	1.00	pCi/L			MJ2	05/21/24	1048	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	78.5	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050274-04C

Sample ID: 666587004

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.04	+/-0.815	1.27	+/-0.857	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		1.25	+/-0.670	0.712	+/-0.697	1.00	pCi/L			MJ2	05/21/24	1048	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	78.3	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: 24050274-05C

Sample ID: 666587005

Matrix: Ground Water

Collect Date: 01-MAY-24

Receive Date: 08-MAY-24

Collector: Client

Report Date: May 22, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		2.71	+/-0.970	1.13	+/-1.19	3.00	pCi/L			KP1	05/15/24	1110	2609216	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		2.93	+/-0.997	0.751	+/-1.13	1.00	pCi/L			MJ2	05/21/24	1048	2609231	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2609216	81.9	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

**Client :** ALS Group USA, Corp  
3352 128th Ave

**Report Date:** May 22, 2024  
**Page 1 of 2**

**Contact:** Holland, Michigan

**Workorder:** Jodi Blouw

666587

Parmname		NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow												
Batch	2609216											
QC1205727903	666582001	DUP										
Radium-228		U	1.56		1.65	pCi/L	5.2		(0% - 100%)	KP1	05/15/24	11:10
		Uncert:	+/-1.27		+/-0.995							
		TPU:	+/-1.33		+/-1.08							
QC1205727904	LCS											
Radium-228		71.6			65.2	pCi/L		91	(75%-125%)	KP1	05/15/24	11:10
		Uncert:			+/-3.73							
		TPU:			+/-17.0							
QC1205727902	MB											
Radium-228				U	0.726	pCi/L				KP1	05/15/24	11:10
		Uncert:			+/-0.900							
		TPU:			+/-0.919							
Rad Ra-226												
Batch	2609231											
QC1205727928	666582001	DUP										
Radium-226			0.823		1.07	pCi/L	25.7		(0% - 100%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451		+/-0.565							
		TPU:	+/-0.481		+/-0.597							
QC1205727930	LCS											
Radium-226		27.0			27.0	pCi/L		100	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:			+/-2.88							
		TPU:			+/-5.54							
QC1205727927	MB											
Radium-226				U	0.236	pCi/L				MJ2	05/21/24	10:48
		Uncert:			+/-0.271							
		TPU:			+/-0.276							
QC1205727929	666582001	MS										
Radium-226		134	0.823		153	pCi/L		113	(75%-125%)	MJ2	05/21/24	10:48
		Uncert:	+/-0.451		+/-13.7							
		TPU:	+/-0.481		+/-32.8							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 666587

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
UI	Gamma Spectroscopy--Uncertain identification									
BD	Results are either below the MDC or tracer recovery is low									
h	Preparation or preservation holding time was exceeded									
R	Sample results are rejected									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
N/A	RPD or %Recovery limits do not apply.									
ND	Analyte concentration is not detected above the detection limit									
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





Subcontractor:  
GEL Laboratories, LLC  
2040 Savage Rd  
Charleston, SC 29407

TEL: (843) 556-8171  
FAX: (843) 766-1178  
Acct #

Salesperson ALSHN Account

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 07-May-24  
COC ID: 25739  
Due Date: 30-May-24

666587

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order		Project Name	24050274	A	Radium 226,228 by 903/904											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D												
Address	3352 128th Ave	Address	3352 128th Ave	E												
				F												
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J												
ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J		
24050274-01C	SMMS-MW-1-050124	Groundwater	1/May/2024 10:40	(2) 1LPNEAT	X											
24050274-02C	SMMS-P-2-050124	Groundwater	1/May/2024 11:54	(2) 1LPNEAT	X											
24050274-03C	SMMS-FB-02-050124	Groundwater	1/May/2024 12:00	(2) 1LPNEAT	X											
24050274-04C	SMMS-MW-13S-050124	Groundwater	1/May/2024 13:43	(2) 1LPNEAT	X											
24050274-05C	SMMS-MW-10D-050124	Groundwater	1/May/2024 15:16	(2) 1LPNEAT	X											

## Comments:

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by: *[Signature]*

5-7-24

Date/Time

Received by: *[Signature]*

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>666587</b>	
Received By: <b>QG</b>		Date Received: <b>5/8/24</b>	
		<small>Circle Applicable:</small> <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
Carrier and Tracking Number		<b>6534 1074 4429 02</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>0</b> CPM/mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below: PCBs    Flammable    Foreign Soil    RCRA    Asbestos    Beryllium    Other: _____	
<b>Sample Receipt Criteria</b>		Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Comments/Qualifiers (Required for Non-Conforming Items)</b>
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: <input checked="" type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container    Other (describe)
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: Client contacted and provided COC    COC created upon receipt
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Preservation Method: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry ice <input type="checkbox"/> None    Other: _____ *all temperatures are recorded in Celsius    TEMP: _____
4 Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Temperature Device Serial #: <b>IR1-23</b> Secondary Temperature Device Serial # (If Applicable): _____
5 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: <input type="checkbox"/> Seals broken <input type="checkbox"/> Damaged container <input type="checkbox"/> Leaking container    Other (describe)
6 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: <b>all containers came unpreserved</b> If Preservation added, Lot#: <b>240317BD</b>
7 Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8 Samples received within holding time?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ID's and tests affected: _____
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ID's and containers affected: _____
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: No dates on containers    No times on containers    COC missing info    Other (describe)
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: No container count on COC    Other (describe)
12 Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Circle Applicable: Not relinquished    Other (describe)
Comments (Use Continuation Form if needed): <b>6354 1074 4430 12</b>			



**List of current GEL Certifications as of 22 May 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-40
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 666587**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2609216

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666587001	24050274-01C
666587002	24050274-02C
666587003	24050274-03C
666587004	24050274-04C
666587005	24050274-05C
1205727902	Method Blank (MB)
1205727903	666582001(24050268-01C) Sample Duplicate (DUP)
1205727904	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2609231

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
666587001	24050274-01C
666587002	24050274-02C
666587003	24050274-03C
666587004	24050274-04C
666587005	24050274-05C
1205727927	Method Blank (MB)
1205727928	666582001(24050268-01C) Sample Duplicate (DUP)
1205727929	666582001(24050268-01C) Matrix Spike (MS)
1205727930	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.



**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information****Additional Comments**

The matrix spike, 1205727929 (24050268-01CMS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.





24050002

ETEM: ETEM

Project: Sammis 2024 1SA Sampling

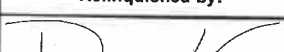

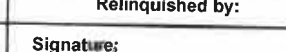



dvanryn.2006@f-ts.com

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

[illegible]

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature: 	Signature: 	Signature: 	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Dakota Vanryn	Printed Name: ACS	Printed Name: ACS	Printed Name: Diane F. Shaw	
Firm FTS	Firm ACS	Firm ACS	Firm ACS	
Date/Time: 04/29/2024 4504 1626	Date/Time: 4-29-24 1630	Date/Time: 4-29-24 1700	Date/Time: 4/30/24 1000	

IR3  
2.4°C  
PH3-





**24050074**

E<sub>TEM</sub>: E<sub>TEM</sub>

Project: Sammis 2024 1SA Sampling



uvanlyii.2000@i-ls.com

Company: Field & Technical Services

Address: 200 Third Avenue





Carnegie, PA 15106

(412) 279-3363

Program: Sammis 2024 1SA Sampling

[illegible]

1R3  
2.3 c  
pH37

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
 Printed Name: Dakota Vanryn	 Printed Name: Jacklyn Gamett	 Printed Name: ALS	 Printed Name: Diane F. Shaw	<input type="checkbox"/> Rush
Firm FTS	Firm ALS	Firm ALS	Firm ALS	<input checked="" type="checkbox"/> Standard
Date/Time: 4-30-2024 15:55	Date/Time: 4-30-2024 16:10	Date/Time: 4-30-24 1700	Date/Time: 5/1/24 1000	





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

Ref 210311

24050077

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	6020B_7470A-Total Metals	2320B_9056A-2540C														
				Preservative																	
				Total Bottle Count																	
				None	HNO3	None															Notes:
04/30/2024	1200	GW	SMMS-MW-99A-043024	4	2	1	1														
04/30/2024	1225	GW	SMMS-MW-3-043024	4	2	1	1														
04/30/2024	1330	GW	SMMS-MW-4-043024	4	2	1	1														
04/30/2024	1440	GW	SMMS-MW-5-043024	4	2	1	1														

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush
Printed Name: Rianna Soltis	Printed Name: Jacyl Gannett	Printed Name: ACS	Printed Name: Diane F. Shaw	<input checked="" type="checkbox"/> Standard
Firm: FTS	Firm: ALS	Firm: ACS	Firm: ALS	
Date/Time: 4/30/24 1500	Date/Time: 4-30-2024 / 16:10	Date/Time: 4-30-24 1700	Date/Time: 5/1/24 1000	

IR3  
2.0°C  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050268

ELEM: ELEM  
Project: Sammis 2024 1SA Sampling



Ref 210311

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	2320B_9056A-2540C	903_904-Radium 226&228	6020B_7470A-Total Metals														
				Preservative																	
				Total Bottle Count																	Notes:
05/02/2024	1000	GW	SMMS-MW-15-050224	4	1	2	1														
05/02/2024	1120	GW	SMMS-MW-16-050224	4	1	2	1														

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Rianna Soltis	Printed Name: Patrick M. Adams	Printed Name: Jacklyn Gannett	Printed Name: Diane F. Shanley	
Firm FTS	Firm ALS	Firm ALS	Firm ALS	
Date/Time: 05/02/2024 11:57	Date/Time: 5/2/24	Date/Time: 5-2-24 17:00	Date/Time: 5/3/24 0930	

DF2  
S.7'c  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050271

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	2320B_9056A-2540C	6020B_7470A-Total Metals														
				Preservative	None	None	HNO3														
				Total Bottle Count																	Notes:
05/01/2024	1055	GW	SMMS-MW-11D-050124	4	2	1	1														
05/01/2024	1200	GW	SMMS-MW-11S-050124	4	2	1	1														
05/01/2024	1331	GW	SMMS-MW-6-050124	4	2	1	1														
05/01/2024	1400	GW	SMMS-MW-99B-050124	4	2	1	1														
05/01/2024	1500	GW	SMMS-MW-13BR-050124	4	2	1	1														

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
				<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Rianna Soltis	Printed Name: Jacklyn Garrett	Printed Name: Kirk Mahli	Printed Name: Diana F. Shan	
Firm FTS	Firm ALS	Firm ALS	Firm ALS	
Date/Time: 5/1/24 1546	Date/Time: 5-1-24 16:48	Date/Time: 5-2-24 1700	Date/Time: 5/3/24 0936	

DF2  
5.7'c  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050274

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



Ref 210311

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	6020B_7470A-Total Metals	2320B_9056A-2540C														
				Preservative																	
				Total Bottle Count																Notes:	
05/01/2024	1040	GW	SMMS-MW-1-050124	4	2	1	1														
05/01/2024	1154	GW	SMMS-P-2-050124	4	2	1	1														
05/01/2024	1200	GW	SMMS-FB-02-050124	4	2	1	1														
05/01/2024	1343	GW	SMMS-MW-13S-050124	4	2	1	1														
05/01/2024	1516	GW	SMMS-MW-10D-050124	4	2	1	1														

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
				<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Dakota Vanryn	Printed Name: Jacklyn Garrett	Printed Name: Kirk McElroy	Printed Name: Diane F. Shanley	
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 05/01/2024 11540	Date/Time: 5-1-24 16:48	Date/Time: 5-2-24 1700	Date/Time: 5/3/24 0930	

DF2  
4.7'c  
PH37



# ALS Group, USA

Holland, Michigan

## Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **30-Apr-24 10:00**

Work Order: **24050002**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by: **Jodi Blouw**

01-May-24

eSignature

Date

eSignature

Date

Matrices: Groundwater

Carrier name: FedEx

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.4/3.4 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 9:11:37 AM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: pH check <2.

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



# ALS Group, USA

Holland, Michigan

## Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **01-May-24 10:00**

Work Order: **24050074**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by:

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.3/3.3 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 2:19:13 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



# ALS Group, USA

Holland, Michigan

## Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **01-May-24 10:00**

Work Order: **24050077**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by: **Jodi Blouw**

02-May-24

eSignature

Date

eSignature

Date

Matrices: Groundwater

Carrier name: FedEx

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.0/3.0 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 2:34:26 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: pH check <2.

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050268**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

5.7/5.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:04:44 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



# ALS Group, USA

Holland, Michigan

## Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050271**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

5.7/5.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:10:28 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050274**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

4.7/4.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:38:46 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:





16-May-2024

Angela Gatchie  
ETEM  
200 Third Ave.  
Carnegie, PA 15106

Re: **Sammis 2024 1SA Sampling**

Work Order: **24050011**

Dear Angela,

ALS Environmental received 21 samples on 30-Apr-2024 through 03-May-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 54.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

**Jodi Blouw**

Electronically approved by: Jodi Blouw

Jodi Blouw

### **Report of Laboratory Analysis**

Certificate No: OH: 87783

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company



Client: ETEM

Project: Sammis 2024 1SA Sampling

Work Order: 24050011

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24050011-01	SMMS-MW-2-042924	Groundwater		4/29/2024 14:21	4/30/2024 10:00	<input type="checkbox"/>
24050076-01	SMMS-MW-9-043024	Groundwater		4/30/2024 09:55	5/1/2024 10:00	<input type="checkbox"/>
24050076-02	SMMS-MW-14S-043024	Groundwater		4/30/2024 12:38	5/1/2024 10:00	<input type="checkbox"/>
24050076-03	SMMS-P-1-043024	Groundwater		4/30/2024 14:17	5/1/2024 10:00	<input type="checkbox"/>
24050076-04	SMMS-FB-01-043024	Groundwater		4/30/2024 14:20	5/1/2024 10:00	<input type="checkbox"/>
24050080-01	SMMS-MW-99A-043024	Groundwater		4/30/2024 12:00	5/1/2024 10:00	<input type="checkbox"/>
24050080-02	SMMS-MW-3-043024	Groundwater		4/30/2024 12:25	5/1/2024 10:00	<input type="checkbox"/>
24050080-03	SMMS-MW-4-043024	Groundwater		4/30/2024 13:30	5/1/2024 10:00	<input type="checkbox"/>
24050080-04	SMMS-MW-5-043024	Groundwater		4/30/2024 14:40	5/1/2024 10:00	<input type="checkbox"/>
24050270-01	SMMS-MW-15-050224	Groundwater		5/2/2024 10:00	5/3/2024 09:30	<input type="checkbox"/>
24050270-02	SMMS-MW-16-050224	Groundwater		5/2/2024 11:20	5/3/2024 09:30	<input type="checkbox"/>
24050273-01	SMMS-MW-11D-050124	Groundwater		5/1/2024 10:55	5/3/2024 09:30	<input type="checkbox"/>
24050273-02	SMMS-MW-11S-050124	Groundwater		5/1/2024 12:00	5/3/2024 09:30	<input type="checkbox"/>
24050273-03	SMMS-MW-6-050124	Groundwater		5/1/2024 13:31	5/3/2024 09:30	<input type="checkbox"/>
24050273-04	SMMS-MW-99B-050124	Groundwater		5/1/2024 14:00	5/3/2024 09:30	<input type="checkbox"/>
24050273-05	SMMS-MW-13BR-050124	Groundwater		5/1/2024 15:00	5/3/2024 09:30	<input type="checkbox"/>
24050279-01	SMMS-MW-1-050124	Groundwater		5/1/2024 10:40	5/3/2024 09:30	<input type="checkbox"/>
24050279-02	SMMS-P-2-050124	Groundwater		5/1/2024 11:54	5/3/2024 09:30	<input type="checkbox"/>
24050279-03	SMMS-FB-02-050124	Groundwater		5/1/2024 12:00	5/3/2024 09:30	<input type="checkbox"/>
24050279-04	SMMS-MW-13S-050124	Groundwater		5/1/2024 13:43	5/3/2024 09:30	<input type="checkbox"/>
24050279-05	SMMS-MW-10D-050124	Groundwater		5/1/2024 15:16	5/3/2024 09:30	<input type="checkbox"/>



Client:

ETEM

Project:

Sammis 2024 1SA Sampling

WorkOrder:

24050011

QUALIFIERS,  
ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter



Client:

ETEM

Project:

Sammis 2024 ISA Sampling

Work Order:

24050011

Case Narrative

Samples for the above noted Work Order were received on 4/30/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

Metals:  
No deviations or anomalies were noted.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050011-01
Sample ID:	SMMS-MW-2-042924	Matrix:	GROUNDWATER
Collection Date:	4/29/2024 02:21 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/1/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/1/2024 19:31
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/4/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/7/2024 20:04
Arsenic	0.00021	J	0.00019	0.0050	mg/L	1	5/7/2024 20:04
Barium	0.032		0.00057	0.0050	mg/L	1	5/7/2024 20:04
Beryllium	U		0.00013	0.0020	mg/L	1	5/7/2024 20:04
Boron	0.065		0.015	0.020	mg/L	1	5/8/2024 13:36
Cadmium	U		0.00014	0.0020	mg/L	1	5/7/2024 20:04
Calcium	37		0.22	0.50	mg/L	1	5/7/2024 20:04
Chromium	0.0017	J	0.00061	0.0050	mg/L	1	5/7/2024 20:04
Cobalt	U		0.00027	0.0050	mg/L	1	5/7/2024 20:04
Iron	U		0.047	0.080	mg/L	1	5/7/2024 20:04
Lead	U		0.00022	0.0050	mg/L	1	5/7/2024 20:04
Lithium	0.0019	J	0.0017	0.010	mg/L	1	5/7/2024 20:04
Magnesium	8.0		0.037	0.20	mg/L	1	5/7/2024 20:04
Molybdenum	0.00052	J	0.00033	0.0050	mg/L	1	5/7/2024 20:04
Potassium	2.4		0.034	0.20	mg/L	1	5/7/2024 20:04
Selenium	U		0.00048	0.0050	mg/L	1	5/7/2024 20:04
Sodium	25		0.13	0.20	mg/L	1	5/7/2024 20:04
Thallium	U		0.00015	0.0050	mg/L	1	5/7/2024 20:04

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050076-01
Sample ID:	SMMS-MW-9-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 09:55 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24	Analyst: KRA	
Mercury	0.00017	J	0.00016	0.00020	mg/L	1	5/3/2024 11:11
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:12
Arsenic	0.00045	J	0.00019	0.0050	mg/L	1	5/9/2024 16:12
Barium	0.038		0.00057	0.0050	mg/L	1	5/9/2024 16:12
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:12
Boron	0.29		0.015	0.020	mg/L	1	5/9/2024 16:12
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:12
Calcium	61		0.22	0.50	mg/L	1	5/9/2024 16:12
Chromium	0.00069	J	0.00061	0.0050	mg/L	1	5/9/2024 16:12
Cobalt	U		0.00027	0.0050	mg/L	1	5/9/2024 16:12
Iron	U		0.047	0.080	mg/L	1	5/9/2024 16:12
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:12
Lithium	0.0029	J	0.0017	0.010	mg/L	1	5/9/2024 16:12
Magnesium	13		0.037	0.20	mg/L	1	5/9/2024 16:12
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:12
Potassium	2.8		0.034	0.20	mg/L	1	5/9/2024 16:12
Selenium	0.0018	J	0.00048	0.0050	mg/L	1	5/9/2024 16:12
Sodium	40		0.13	0.20	mg/L	1	5/9/2024 16:12
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:12

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050076-02
Sample ID:	SMMS-MW-14S-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 12:38 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:22
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:13
Arsenic	0.00032	J	0.00019	0.0050	mg/L	1	5/9/2024 16:13
Barium	0.041		0.00057	0.0050	mg/L	1	5/9/2024 16:13
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:13
Boron	0.068		0.015	0.020	mg/L	1	5/9/2024 16:13
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:13
Calcium	70		0.22	0.50	mg/L	1	5/9/2024 16:13
Chromium	0.00093	J	0.00061	0.0050	mg/L	1	5/9/2024 16:13
Cobalt	0.00049	J	0.00027	0.0050	mg/L	1	5/9/2024 16:13
Iron	0.13		0.047	0.080	mg/L	1	5/9/2024 16:13
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:13
Lithium	0.0036	J	0.0017	0.010	mg/L	1	5/9/2024 16:13
Magnesium	13		0.037	0.20	mg/L	1	5/9/2024 16:13
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:13
Potassium	2.6		0.034	0.20	mg/L	1	5/9/2024 16:13
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:13
Sodium	36		0.13	0.20	mg/L	1	5/9/2024 16:13
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:13

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050076-03
Sample ID:	SMMS-P-1-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 02:17 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:23
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:15
Arsenic	0.00094	J	0.00019	0.0050	mg/L	1	5/9/2024 16:15
Barium	0.014		0.00057	0.0050	mg/L	1	5/9/2024 16:15
Beryllium	0.00016	J	0.00013	0.0020	mg/L	1	5/9/2024 16:15
Boron	0.14		0.015	0.020	mg/L	1	5/9/2024 16:15
Cadmium	0.00052	J	0.00014	0.0020	mg/L	1	5/9/2024 16:15
Calcium	70		0.22	0.50	mg/L	1	5/9/2024 16:15
Chromium	U		0.00061	0.0050	mg/L	1	5/9/2024 16:15
Cobalt	0.020		0.00027	0.0050	mg/L	1	5/9/2024 16:15
Iron	16		0.047	0.080	mg/L	1	5/9/2024 16:15
Lead	0.00027	J	0.00022	0.0050	mg/L	1	5/9/2024 16:15
Lithium	0.0044	J	0.0017	0.010	mg/L	1	5/9/2024 16:15
Magnesium	18		0.037	0.20	mg/L	1	5/9/2024 16:15
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:15
Potassium	3.2		0.034	0.20	mg/L	1	5/9/2024 16:15
Selenium	0.00062	J	0.00048	0.0050	mg/L	1	5/9/2024 16:15
Sodium	61		0.13	0.20	mg/L	1	5/9/2024 16:15
Thallium	0.00016	J	0.00015	0.0050	mg/L	1	5/9/2024 16:15

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050076-04
Sample ID:	SMMS-FB-01-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 02:20 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:25
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:17
Arsenic	U		0.00019	0.0050	mg/L	1	5/9/2024 16:17
Barium	U		0.00057	0.0050	mg/L	1	5/9/2024 16:17
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:17
Boron	U		0.015	0.020	mg/L	1	5/9/2024 16:17
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:17
Calcium	U		0.22	0.50	mg/L	1	5/9/2024 16:17
Chromium	0.0012	J	0.00061	0.0050	mg/L	1	5/9/2024 16:17
Cobalt	U		0.00027	0.0050	mg/L	1	5/9/2024 16:17
Iron	U		0.047	0.080	mg/L	1	5/9/2024 16:17
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:17
Lithium	U		0.0017	0.010	mg/L	1	5/9/2024 16:17
Magnesium	U		0.037	0.20	mg/L	1	5/9/2024 16:17
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:17
Potassium	U		0.034	0.20	mg/L	1	5/9/2024 16:17
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:17
Sodium	U		0.13	0.20	mg/L	1	5/9/2024 16:17
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:17

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client: ETEM

Project: Sammis 2024 1SA Sampling

Sample ID: SMMS-MW-99A-043024

Collection Date: 4/30/2024 12:00 PM

Work Order: 24050011

Lab ID: 24050080-01

Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:34
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:18
Arsenic	0.00025	J	0.00019	0.0050	mg/L	1	5/9/2024 16:18
Barium	0.035		0.00057	0.0050	mg/L	1	5/9/2024 16:18
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:18
Boron	0.17		0.015	0.020	mg/L	1	5/9/2024 16:18
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:18
Calcium	43		0.22	0.50	mg/L	1	5/9/2024 16:18
Chromium	U		0.00061	0.0050	mg/L	1	5/9/2024 16:18
Cobalt	U		0.00027	0.0050	mg/L	1	5/9/2024 16:18
Iron	U		0.047	0.080	mg/L	1	5/9/2024 16:18
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:18
Lithium	0.0019	J	0.0017	0.010	mg/L	1	5/9/2024 16:18
Magnesium	9.2		0.037	0.20	mg/L	1	5/9/2024 16:18
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:18
Potassium	2.5		0.034	0.20	mg/L	1	5/9/2024 16:18
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:18
Sodium	29		0.13	0.20	mg/L	1	5/9/2024 16:18
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:18

Note:

See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050080-02
Sample ID:	SMMS-MW-3-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 12:25 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:36
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:20
Arsenic	0.00028	J	0.00019	0.0050	mg/L	1	5/9/2024 16:20
Barium	0.034		0.00057	0.0050	mg/L	1	5/9/2024 16:20
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:20
Boron	0.090		0.015	0.020	mg/L	1	5/9/2024 16:20
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:20
Calcium	39		0.22	0.50	mg/L	1	5/9/2024 16:20
Chromium	U		0.00061	0.0050	mg/L	1	5/9/2024 16:20
Cobalt	U		0.00027	0.0050	mg/L	1	5/9/2024 16:20
Iron	U		0.047	0.080	mg/L	1	5/9/2024 16:20
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:20
Lithium	0.0018	J	0.0017	0.010	mg/L	1	5/9/2024 16:20
Magnesium	8.8		0.037	0.20	mg/L	1	5/9/2024 16:20
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:20
Potassium	2.4		0.034	0.20	mg/L	1	5/9/2024 16:20
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:20
Sodium	27		0.13	0.20	mg/L	1	5/9/2024 16:20
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:20

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050080-03
Sample ID:	SMMS-MW-4-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 01:30 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/3/2024 11:37
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:22
Arsenic	0.00023	J	0.00019	0.0050	mg/L	1	5/9/2024 16:22
Barium	0.035		0.00057	0.0050	mg/L	1	5/9/2024 16:22
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:22
Boron	0.17		0.015	0.020	mg/L	1	5/9/2024 16:22
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:22
Calcium	44		0.22	0.50	mg/L	1	5/9/2024 16:22
Chromium	U		0.00061	0.0050	mg/L	1	5/9/2024 16:22
Cobalt	U		0.00027	0.0050	mg/L	1	5/9/2024 16:22
Iron	U		0.047	0.080	mg/L	1	5/9/2024 16:22
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:22
Lithium	0.0021	J	0.0017	0.010	mg/L	1	5/9/2024 16:22
Magnesium	9.2		0.037	0.20	mg/L	1	5/9/2024 16:22
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:22
Potassium	2.5		0.034	0.20	mg/L	1	5/9/2024 16:22
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:22
Sodium	29		0.13	0.20	mg/L	1	5/9/2024 16:22
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:22

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050080-04
Sample ID:	SMMS-MW-5-043024	Matrix:	GROUNDWATER
Collection Date:	4/30/2024 02:40 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/2/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/2/2024 20:50
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/8/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/9/2024 16:23
Arsenic	0.00034	J	0.00019	0.0050	mg/L	1	5/9/2024 16:23
Barium	0.023		0.00057	0.0050	mg/L	1	5/9/2024 16:23
Beryllium	U		0.00013	0.0020	mg/L	1	5/9/2024 16:23
Boron	0.092		0.015	0.020	mg/L	1	5/9/2024 16:23
Cadmium	U		0.00014	0.0020	mg/L	1	5/9/2024 16:23
Calcium	56		0.22	0.50	mg/L	1	5/9/2024 16:23
Chromium	U		0.00061	0.0050	mg/L	1	5/9/2024 16:23
Cobalt	0.0033	J	0.00027	0.0050	mg/L	1	5/9/2024 16:23
Iron	2.0		0.047	0.080	mg/L	1	5/9/2024 16:23
Lead	U		0.00022	0.0050	mg/L	1	5/9/2024 16:23
Lithium	0.0024	J	0.0017	0.010	mg/L	1	5/9/2024 16:23
Magnesium	13		0.037	0.20	mg/L	1	5/9/2024 16:23
Molybdenum	U		0.00033	0.0050	mg/L	1	5/9/2024 16:23
Potassium	2.8		0.034	0.20	mg/L	1	5/9/2024 16:23
Selenium	U		0.00048	0.0050	mg/L	1	5/9/2024 16:23
Sodium	43		0.13	0.20	mg/L	1	5/9/2024 16:23
Thallium	U		0.00015	0.0050	mg/L	1	5/9/2024 16:23

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050270-01
Sample ID:	SMMS-MW-15-050224	Matrix:	GROUNDWATER
Collection Date:	5/2/2024 10:00 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:22
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/13/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 00:34
Arsenic	0.00020	J	0.00019	0.0050	mg/L	1	5/14/2024 00:34
Barium	0.031		0.00057	0.0050	mg/L	1	5/14/2024 00:34
Beryllium	U		0.00013	0.0020	mg/L	1	5/14/2024 00:34
Boron	0.11		0.015	0.020	mg/L	1	5/14/2024 00:34
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 00:34
Calcium	45		0.22	0.50	mg/L	1	5/14/2024 00:34
Chromium	0.0011	J	0.00061	0.0050	mg/L	1	5/14/2024 00:34
Cobalt	0.00056	J	0.00027	0.0050	mg/L	1	5/14/2024 00:34
Iron	U		0.047	0.080	mg/L	1	5/14/2024 15:23
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 00:34
Lithium	U		0.0017	0.010	mg/L	1	5/14/2024 00:34
Magnesium	9.5		0.037	0.20	mg/L	1	5/14/2024 00:34
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 00:34
Potassium	2.4		0.034	0.20	mg/L	1	5/14/2024 00:34
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 00:34
Sodium	31		0.13	0.20	mg/L	1	5/14/2024 00:34
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 00:34

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050270-02
Sample ID:	SMMS-MW-16-050224	Matrix:	GROUNDWATER
Collection Date:	5/2/2024 11:20 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:24
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/13/24	Analyst: STP	
Antimony	0.00043	J	0.00042	0.0050	mg/L	1	5/14/2024 00:36
Arsenic	0.0045	J	0.00019	0.0050	mg/L	1	5/14/2024 00:36
Barium	0.18		0.00057	0.0050	mg/L	1	5/14/2024 00:36
Beryllium	U		0.00013	0.0020	mg/L	1	5/14/2024 00:36
Boron	0.10		0.015	0.020	mg/L	1	5/14/2024 00:36
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 00:36
Calcium	83		0.22	0.50	mg/L	1	5/14/2024 00:36
Chromium	0.0010	J	0.00061	0.0050	mg/L	1	5/14/2024 00:36
Cobalt	0.00047	J	0.00027	0.0050	mg/L	1	5/14/2024 00:36
Iron	U		0.047	0.080	mg/L	1	5/14/2024 00:36
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 00:36
Lithium	0.023		0.0017	0.010	mg/L	1	5/14/2024 00:36
Magnesium	17		0.037	0.20	mg/L	1	5/14/2024 00:36
Molybdenum	0.010		0.00033	0.0050	mg/L	1	5/14/2024 00:36
Potassium	15		0.034	0.20	mg/L	1	5/14/2024 00:36
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 00:36
Sodium	29		0.13	0.20	mg/L	1	5/14/2024 00:36
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 00:36

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050273-01
Sample ID:	SMMS-MW-11D-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 10:55 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:26
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/13/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 00:38
Arsenic	0.00026	J	0.00019	0.0050	mg/L	1	5/14/2024 00:38
Barium	0.015		0.00057	0.0050	mg/L	1	5/14/2024 00:38
Beryllium	0.00029	J	0.00013	0.0020	mg/L	1	5/14/2024 00:38
Boron	0.16		0.015	0.020	mg/L	1	5/14/2024 00:38
Cadmium	0.0011	J	0.00014	0.0020	mg/L	1	5/14/2024 00:38
Calcium	80		0.22	0.50	mg/L	1	5/14/2024 00:38
Chromium	0.0012	J	0.00061	0.0050	mg/L	1	5/14/2024 00:38
Cobalt	0.040		0.00027	0.0050	mg/L	1	5/14/2024 00:38
Iron	10		0.047	0.080	mg/L	1	5/14/2024 00:38
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 00:38
Lithium	0.011		0.0017	0.010	mg/L	1	5/14/2024 00:38
Magnesium	19		0.037	0.20	mg/L	1	5/14/2024 00:38
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 00:38
Potassium	3.5		0.034	0.20	mg/L	1	5/14/2024 00:38
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 00:38
Sodium	64		0.13	0.20	mg/L	1	5/14/2024 00:38
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 00:38

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050273-02
Sample ID:	SMMS-MW-11S-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:35
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/13/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 00:39
Arsenic	0.0080		0.00019	0.0050	mg/L	1	5/14/2024 00:39
Barium	0.031		0.00057	0.0050	mg/L	1	5/14/2024 00:39
Beryllium	U		0.00013	0.0020	mg/L	1	5/14/2024 00:39
Boron	0.15		0.015	0.020	mg/L	1	5/14/2024 00:39
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 00:39
Calcium	160		0.22	0.50	mg/L	1	5/14/2024 00:39
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 00:39
Cobalt	0.0084		0.00027	0.0050	mg/L	1	5/14/2024 00:39
Iron	8.8		0.047	0.080	mg/L	1	5/14/2024 00:39
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 00:39
Lithium	0.0098	J	0.0017	0.010	mg/L	1	5/14/2024 00:39
Magnesium	24		0.037	0.20	mg/L	1	5/14/2024 00:39
Molybdenum	0.00047	J	0.00033	0.0050	mg/L	1	5/14/2024 00:39
Potassium	3.2		0.034	0.20	mg/L	1	5/14/2024 00:39
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 00:39
Sodium	67		0.13	0.20	mg/L	1	5/14/2024 00:39
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 00:39

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050273-03
Sample ID:	SMMS-MW-6-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 01:31 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>							
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:36
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METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/13/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 00:41
Arsenic	U		0.00019	0.0050	mg/L	1	5/14/2024 00:41
Barium	0.012		0.00057	0.0050	mg/L	1	5/14/2024 00:41
Beryllium	U		0.00013	0.0020	mg/L	1	5/14/2024 00:41
Boron	0.11		0.015	0.020	mg/L	1	5/14/2024 00:41
Cadmium	0.00023	J	0.00014	0.0020	mg/L	1	5/14/2024 00:41
Calcium	62		0.22	0.50	mg/L	1	5/14/2024 00:41
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 00:41
Cobalt	0.0092		0.00027	0.0050	mg/L	1	5/14/2024 00:41
Iron	8.7		0.047	0.080	mg/L	1	5/14/2024 00:41
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 00:41
Lithium	U		0.0017	0.010	mg/L	1	5/14/2024 00:41
Magnesium	15		0.037	0.20	mg/L	1	5/14/2024 00:41
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 00:41
Potassium	2.9		0.034	0.20	mg/L	1	5/14/2024 00:41
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 00:41
Sodium	50		0.13	0.20	mg/L	1	5/14/2024 00:41
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 00:41

**Note:** See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050273-04
Sample ID:	SMMS-MW-99B-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 02:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 14:38
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 20:57
Arsenic	0.0086		0.00019	0.0050	mg/L	1	5/14/2024 20:57
Barium	0.033		0.00057	0.0050	mg/L	1	5/14/2024 20:57
Beryllium	0.00019	J	0.00013	0.0020	mg/L	1	5/15/2024 16:02
Boron	0.16		0.015	0.020	mg/L	1	5/14/2024 20:57
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 20:57
Calcium	170		0.22	0.50	mg/L	1	5/14/2024 20:57
Chromium	0.0044	J	0.00061	0.0050	mg/L	1	5/14/2024 20:57
Cobalt	0.010		0.00027	0.0050	mg/L	1	5/14/2024 20:57
Iron	9.7		0.047	0.080	mg/L	1	5/14/2024 20:57
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 20:57
Lithium	0.013		0.0017	0.010	mg/L	1	5/15/2024 16:02
Magnesium	27		0.037	0.20	mg/L	1	5/14/2024 20:57
Molybdenum	0.00078	J	0.00033	0.0050	mg/L	1	5/14/2024 20:57
Potassium	3.3		0.034	0.20	mg/L	1	5/14/2024 20:57
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 20:57
Sodium	77		0.13	0.20	mg/L	1	5/14/2024 20:57
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 20:57

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050273-05
Sample ID:	SMMS-MW-13BR-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 03:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:01
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:02
Arsenic	0.0034	J	0.00019	0.0050	mg/L	1	5/14/2024 21:02
Barium	0.068		0.00057	0.0050	mg/L	1	5/14/2024 21:02
Beryllium	0.00024	J	0.00013	0.0020	mg/L	1	5/15/2024 16:04
Boron	0.24		0.015	0.020	mg/L	1	5/14/2024 21:02
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:02
Calcium	3.3		0.22	0.50	mg/L	1	5/14/2024 21:02
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:02
Cobalt	U		0.00027	0.0050	mg/L	1	5/14/2024 21:02
Iron	0.12		0.047	0.080	mg/L	1	5/14/2024 21:02
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:02
Lithium	0.0054	J	0.0017	0.010	mg/L	1	5/15/2024 16:04
Magnesium	0.76		0.037	0.20	mg/L	1	5/14/2024 21:02
Molybdenum	0.0026	J	0.00033	0.0050	mg/L	1	5/14/2024 21:02
Potassium	1.6		0.034	0.20	mg/L	1	5/14/2024 21:02
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 21:02
Sodium	180		0.13	0.20	mg/L	1	5/14/2024 21:02
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:02

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050279-01
Sample ID:	SMMS-MW-1-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 10:40 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:02
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:04
Arsenic	0.00029	J	0.00019	0.0050	mg/L	1	5/14/2024 21:04
Barium	0.037		0.00057	0.0050	mg/L	1	5/14/2024 21:04
Beryllium	0.00016	J	0.00013	0.0020	mg/L	1	5/15/2024 16:05
Boron	0.070		0.015	0.020	mg/L	1	5/14/2024 21:04
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:04
Calcium	45		0.22	0.50	mg/L	1	5/14/2024 21:04
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:04
Cobalt	U		0.00027	0.0050	mg/L	1	5/14/2024 21:04
Iron	U		0.047	0.080	mg/L	1	5/14/2024 21:04
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:04
Lithium	U		0.0017	0.010	mg/L	1	5/15/2024 16:05
Magnesium	9.9		0.037	0.20	mg/L	1	5/14/2024 21:04
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 21:04
Potassium	2.8		0.034	0.20	mg/L	1	5/14/2024 21:04
Selenium	0.00050	J	0.00048	0.0050	mg/L	1	5/14/2024 21:04
Sodium	31		0.13	0.20	mg/L	1	5/14/2024 21:04
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:04

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050279-02
Sample ID:	SMMS-P-2-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 11:54 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
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MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24		Analyst: KRA
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:04
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METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24		Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:05
Arsenic	U		0.00019	0.0050	mg/L	1	5/14/2024 21:05
Barium	0.027		0.00057	0.0050	mg/L	1	5/14/2024 21:05
Beryllium	0.00014	J	0.00013	0.0020	mg/L	1	5/15/2024 16:07
Boron	0.069		0.015	0.020	mg/L	1	5/14/2024 21:05
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:05
Calcium	47		0.22	0.50	mg/L	1	5/14/2024 21:05
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:05
Cobalt	0.0010	J	0.00027	0.0050	mg/L	1	5/14/2024 21:05
Iron	0.91		0.047	0.080	mg/L	1	5/14/2024 21:05
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:05
Lithium	0.0019	J	0.0017	0.010	mg/L	1	5/15/2024 16:07
Magnesium	11		0.037	0.20	mg/L	1	5/14/2024 21:05
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 21:05
Potassium	2.6		0.034	0.20	mg/L	1	5/14/2024 21:05
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 21:05
Sodium	35		0.13	0.20	mg/L	1	5/14/2024 21:05
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:05

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050279-03
Sample ID:	SMMS-FB-02-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:06
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:07
Arsenic	U		0.00019	0.0050	mg/L	1	5/14/2024 21:07
Barium	U		0.00057	0.0050	mg/L	1	5/14/2024 21:07
Beryllium	0.00014	J	0.00013	0.0020	mg/L	1	5/15/2024 16:09
Boron	U		0.015	0.020	mg/L	1	5/14/2024 21:07
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:07
Calcium	U		0.22	0.50	mg/L	1	5/14/2024 21:07
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:07
Cobalt	U		0.00027	0.0050	mg/L	1	5/14/2024 21:07
Iron	U		0.047	0.080	mg/L	1	5/14/2024 21:07
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:07
Lithium	U		0.0017	0.010	mg/L	1	5/15/2024 16:09
Magnesium	U		0.037	0.20	mg/L	1	5/14/2024 21:07
Molybdenum	U		0.00033	0.0050	mg/L	1	5/14/2024 21:07
Potassium	U		0.034	0.20	mg/L	1	5/14/2024 21:07
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 21:07
Sodium	U		0.13	0.20	mg/L	1	5/14/2024 21:07
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:07

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050279-04
Sample ID:	SMMS-MW-13S-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 01:43 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:08
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:09
Arsenic	0.049		0.00019	0.0050	mg/L	1	5/14/2024 21:09
Barium	0.15		0.00057	0.0050	mg/L	1	5/14/2024 21:09
Beryllium	U		0.00013	0.0020	mg/L	1	5/15/2024 16:10
Boron	0.12		0.015	0.020	mg/L	1	5/14/2024 21:09
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:09
Calcium	130		0.22	0.50	mg/L	1	5/14/2024 21:09
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:09
Cobalt	0.0031	J	0.00027	0.0050	mg/L	1	5/14/2024 21:09
Iron	8.6		0.047	0.080	mg/L	1	5/14/2024 21:09
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:09
Lithium	0.0080	J	0.0017	0.010	mg/L	1	5/15/2024 16:10
Magnesium	26		0.037	0.20	mg/L	1	5/14/2024 21:09
Molybdenum	0.0032	J	0.00033	0.0050	mg/L	1	5/14/2024 21:09
Potassium	2.0		0.034	0.20	mg/L	1	5/14/2024 21:09
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 21:09
Sodium	57		0.13	0.20	mg/L	1	5/14/2024 21:09
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:09

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24050011
Project:	Sammis 2024 1SA Sampling	Lab ID:	24050279-05
Sample ID:	SMMS-MW-10D-050124	Matrix:	GROUNDWATER
Collection Date:	5/1/2024 03:16 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA (DISSOLVED)			Method: SW7470A		Prep: SW7470 / 5/7/24	Analyst: KRA	
Mercury	U		0.00016	0.00020	mg/L	1	5/7/2024 15:10
METALS BY ICP-MS (DISSOLVED)			Method: SW6020B		Prep: SW3015A / 5/14/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	5/14/2024 21:10
Arsenic	0.0035	J	0.00019	0.0050	mg/L	1	5/14/2024 21:10
Barium	3.4		0.0057	0.050	mg/L	10	5/15/2024 16:12
Beryllium	U		0.00013	0.0020	mg/L	1	5/15/2024 16:24
Boron	0.19		0.015	0.020	mg/L	1	5/14/2024 21:10
Cadmium	U		0.00014	0.0020	mg/L	1	5/14/2024 21:10
Calcium	160		0.22	0.50	mg/L	1	5/14/2024 21:10
Chromium	U		0.00061	0.0050	mg/L	1	5/14/2024 21:10
Cobalt	U		0.00027	0.0050	mg/L	1	5/14/2024 21:10
Iron	2.0		0.047	0.080	mg/L	1	5/14/2024 21:10
Lead	U		0.00022	0.0050	mg/L	1	5/14/2024 21:10
Lithium	0.021		0.0017	0.010	mg/L	1	5/15/2024 16:24
Magnesium	47		0.037	0.20	mg/L	1	5/14/2024 21:10
Molybdenum	0.0014	J	0.00033	0.0050	mg/L	1	5/14/2024 21:10
Potassium	7.2		0.034	0.20	mg/L	1	5/14/2024 21:10
Selenium	U		0.00048	0.0050	mg/L	1	5/14/2024 21:10
Sodium	750		1.3	2.0	mg/L	10	5/15/2024 16:12
Thallium	U		0.00015	0.0050	mg/L	1	5/14/2024 21:10

Note: See Qualifiers page for a list of qualifiers and their definitions.



Batch ID: 239392

Instrument ID HG5

Method: SW7470A

MBLK		Sample ID: MBLK-239392-239392					Units: mg/L		Analysis Date: 5/1/2024 06:32 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10719996		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239392-239392					Units: mg/L		Analysis Date: 5/1/2024 06:34 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10719997		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00225	0.00016	0.00020	0.002	0	112	80-120	0			

MS		Sample ID: 24042014-03CMS					Units: mg/L		Analysis Date: 5/1/2024 06:48 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10720009		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00195	0.00016	0.00020	0.002	-0.000012	98.1	75-125	0			

MS		Sample ID: 24042092-01AMS					Units: mg/L		Analysis Date: 5/1/2024 07:07 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10720027		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001995	0.00016	0.00020	0.002	0.000057	96.9	75-125	0			

MSD		Sample ID: 24042014-03CMSD					Units: mg/L		Analysis Date: 5/1/2024 06:50 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10720011		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00192	0.00016	0.00020	0.002	-0.000012	96.6	75-125	0.00195	1.55	20	

MSD		Sample ID: 24042092-01AMSD					Units: mg/L		Analysis Date: 5/1/2024 07:09 PM		
Client ID:		Run ID: HG5_240501B					SeqNo: 10720029		Prep Date: 5/1/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002055	0.00016	0.00020	0.002	0.000057	99.9	75-125	0.001995	2.96	20	

The following samples were analyzed in this batch:

24050011-01A



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239468 Instrument ID HG5 Method: SW7470A

MBLK		Sample ID: MBLK-239468-239468				Units: mg/L		Analysis Date: 5/2/2024 07:50 PM			
Client ID:		Run ID: HG5_240502B				SeqNo: 10725441		Prep Date: 5/2/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239468-239468				Units: mg/L		Analysis Date: 5/2/2024 07:52 PM			
Client ID:		Run ID: HG5_240502B				SeqNo: 10725443		Prep Date: 5/2/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00237	0.00016	0.00020	0.002	0	118	80-120	0			

MS		Sample ID: 24050076-01AAMS				Units: mg/L		Analysis Date: 5/3/2024 11:13 AM			
Client ID: SMMS-MW-9-043024		Run ID: HG5_240502B				SeqNo: 10725491		Prep Date: 5/2/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002205	0.00016	0.00020	0.002	0.000171	102	75-125	0			

MSD		Sample ID: 24050076-01AMSD				Units: mg/L		Analysis Date: 5/3/2024 11:14 AM			
Client ID: SMMS-MW-9-043024		Run ID: HG5_240502B				SeqNo: 10725492		Prep Date: 5/2/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00222	0.00016	0.00020	0.002	0.000171	102	75-125	0.002205	0.678	20	

The following samples were analyzed in this batch:	24050076-01A	24050076-02A	24050076-03A
	24050076-04A	24050080-01A	24050080-02A
	24050080-03A	24050080-04A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239639 Instrument ID HG5 Method: SW7470A

MBLK		Sample ID: MBLK-239639-239639				Units: mg/L		Analysis Date: 5/7/2024 01:40 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737013		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239639-239639				Units: mg/L		Analysis Date: 5/7/2024 01:47 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737017		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00219	0.00016	0.00020	0.002	0	110	80-120	0			

MS		Sample ID: 24050102-07CMS				Units: mg/L		Analysis Date: 5/7/2024 01:56 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737022		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00183	0.00016	0.00020	0.002	0.000006	91.2	75-125	0			

MSD		Sample ID: 24050102-07CMSD				Units: mg/L		Analysis Date: 5/7/2024 01:57 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737023		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001995	0.00016	0.00020	0.002	0.000006	99.4	75-125	0.00183	8.63	20	

The following samples were analyzed in this batch:	24050270-01A	24050270-02A	24050273-01A
	24050273-02A	24050273-03A	24050273-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239640 Instrument ID HG5 Method: SW7470A

MBLK		Sample ID: MBLK-239640-239640				Units: mg/L		Analysis Date: 5/7/2024 02:40 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737047		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-239640-239640				Units: mg/L		Analysis Date: 5/7/2024 02:42 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737048		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002145	0.00016	0.00020	0.002	0	107	80-120	0			

MS		Sample ID: 24050226-01AMS				Units: mg/L		Analysis Date: 5/7/2024 02:45 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737050		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001995	0.00016	0.00020	0.002	-0.000036	102	75-125	0			

MSD		Sample ID: 24050226-01AMSD				Units: mg/L		Analysis Date: 5/7/2024 02:47 PM			
Client ID:		Run ID: HG5_240507A				SeqNo: 10737051		Prep Date: 5/7/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002025	0.00016	0.00020	0.002	-0.000036	103	75-125	0.001995	1.49	20	

The following samples were analyzed in this batch:	24050273-05A	24050279-01A	24050279-02A
	24050279-03A	24050279-04A	24050279-05A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239583      Instrument ID ICPMS4      Method: SW6020B

MBLK		Sample ID: MBLK-239583-239583				Units: mg/L		Analysis Date: 5/7/2024 07:36 PM			
Client ID:		Run ID: ICPMS4_240507A				SeqNo: 10735733		Prep Date: 5/4/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	0.0006919	0.00048	0.0050								J
Sodium	U	0.13	0.20								
Thallium	U	0.00015	0.0050								

LCS		Sample ID: LCS-239583-239583				Units: mg/L		Analysis Date: 5/7/2024 07:38 PM			
Client ID:		Run ID: ICPMS4_240507A				SeqNo: 10735734		Prep Date: 5/4/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.108	0.00042	0.0050	0.1	0	108	80-120	0			
Arsenic	0.09994	0.00019	0.0050	0.1	0	99.9	80-120	0			
Barium	0.1029	0.00057	0.0050	0.1	0	103	80-120	0			
Beryllium	0.1162	0.00013	0.0020	0.1	0	116	80-120	0			
Cadmium	0.1071	0.00014	0.0020	0.1	0	107	80-120	0			
Calcium	10.2	0.22	0.50	10	0	102	80-120	0			
Chromium	0.1	0.00061	0.0050	0.1	0	100	80-120	0			
Cobalt	0.1028	0.00027	0.0050	0.1	0	103	80-120	0			
Iron	9.943	0.047	0.080	10	0	99.4	80-120	0			
Lead	0.1031	0.00022	0.0050	0.1	0	103	80-120	0			
Lithium	0.1022	0.0017	0.010	0.1	0	102	80-120	0			
Magnesium	9.797	0.037	0.20	10	0	98	80-120	0			
Molybdenum	0.1019	0.00033	0.0050	0.1	0	102	80-120	0			
Potassium	10.07	0.034	0.20	10	0	101	80-120	0			
Selenium	0.09987	0.00048	0.0050	0.1	0	99.9	80-120	0			
Sodium	9.72	0.13	0.20	10	0	97.2	80-120	0			
Thallium	0.09925	0.00015	0.0050	0.1	0	99.2	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239583      Instrument ID ICPMS4      Method: SW6020B

LCS		Sample ID: LCS-239583-239583				Units: mg/L		Analysis Date: 5/8/2024 01:13 PM			
Client ID:		Run ID: ICPMS4_240508A				SeqNo: 10738050		Prep Date: 5/4/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5636	0.015	0.020	0.5	0	113	80-120	0			

MS		Sample ID: 24042014-03CMS				Units: mg/L		Analysis Date: 5/7/2024 07:46 PM			
Client ID:		Run ID: ICPMS4_240507A				SeqNo: 10735739		Prep Date: 5/4/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1102	0.00042	0.0050	0.1	0.0003135	110	75-125	0			
Arsenic	0.119	0.00019	0.0050	0.1	0.0159	103	75-125	0			
Barium	0.3842	0.00057	0.0050	0.1	0.285	99.1	75-125	0			
Beryllium	0.1021	0.00013	0.0020	0.1	0.0001595	102	75-125	0			
Cadmium	0.1069	0.00014	0.0020	0.1	0.0001364	107	75-125	0			
Calcium	259.2	0.22	0.50	10	261.2	-20	75-125	0			SEO
Chromium	0.1134	0.00061	0.0050	0.1	0.007707	106	75-125	0			
Cobalt	0.1083	0.00027	0.0050	0.1	0.005159	103	75-125	0			
Iron	20.96	0.047	0.080	10	10.36	106	75-125	0			
Lead	0.1171	0.00022	0.0050	0.1	0.008052	109	75-125	0			
Lithium	0.1122	0.0017	0.010	0.1	0.01418	98	75-125	0			
Magnesium	105.7	0.037	0.20	10	100	57.2	75-125	0			SO
Molybdenum	0.1242	0.00033	0.0050	0.1	0.01612	108	75-125	0			
Potassium	14.88	0.034	0.20	10	4.441	104	75-125	0			
Selenium	0.1047	0.00048	0.0050	0.1	0.0007524	104	75-125	0			
Sodium	74.89	0.13	0.20	10	67.84	70.5	75-125	0			SO
Thallium	0.1057	0.00015	0.0050	0.1	0.0003509	105	75-125	0			

MS		Sample ID: 24042014-03CMS				Units: mg/L		Analysis Date: 5/8/2024 01:26 PM			
Client ID:		Run ID: ICPMS4_240508A				SeqNo: 10738058		Prep Date: 5/4/2024		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.669	0.15	0.20	0.5	0.139	106	75-125	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239583 Instrument ID ICPMS4 Method: SW6020B

MSD					Sample ID: 24042014-03CMSD			Units: mg/L		Analysis Date: 5/7/2024 07:48 PM		
Client ID:					Run ID: ICPMS4_240507A			SeqNo: 10735740		Prep Date: 5/4/2024		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1099	0.00042	0.0050	0.1	0.0003135	110	75-125	0.1102	0.255	20		
Arsenic	0.1182	0.00019	0.0050	0.1	0.0159	102	75-125	0.119	0.639	20		
Barium	0.3853	0.00057	0.0050	0.1	0.285	100	75-125	0.3842	0.296	20		
Beryllium	0.102	0.00013	0.0020	0.1	0.0001595	102	75-125	0.1021	0.119	20		
Cadmium	0.106	0.00014	0.0020	0.1	0.0001364	106	75-125	0.1069	0.842	20		
Calcium	257.7	0.22	0.50	10	261.2	-35.1	75-125	259.2	0.586	20	SEO	
Chromium	0.1109	0.00061	0.0050	0.1	0.007707	103	75-125	0.1134	2.22	20		
Cobalt	0.1073	0.00027	0.0050	0.1	0.005159	102	75-125	0.1083	0.841	20		
Iron	20.58	0.047	0.080	10	10.36	102	75-125	20.96	1.84	20		
Lead	0.1162	0.00022	0.0050	0.1	0.008052	108	75-125	0.1171	0.712	20		
Lithium	0.1103	0.0017	0.010	0.1	0.01418	96.1	75-125	0.1122	1.73	20		
Magnesium	103.4	0.037	0.20	10	100	33.9	75-125	105.7	2.23	20	SO	
Molybdenum	0.1233	0.00033	0.0050	0.1	0.01612	107	75-125	0.1242	0.744	20		
Potassium	14.66	0.034	0.20	10	4.441	102	75-125	14.88	1.48	20		
Selenium	0.1028	0.00048	0.0050	0.1	0.0007524	102	75-125	0.1047	1.76	20		
Sodium	73.15	0.13	0.20	10	67.84	53.1	75-125	74.89	2.35	20	SO	
Thallium	0.1051	0.00015	0.0050	0.1	0.0003509	105	75-125	0.1057	0.628	20		

MSD					Sample ID: 24042014-03CMSD			Units: mg/L		Analysis Date: 5/8/2024 01:28 PM		
Client ID:					Run ID: ICPMS4_240508A			SeqNo: 10738059		Prep Date: 5/4/2024		DF: 10
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron	0.6772	0.15	0.20	0.5	0.139	108	75-125	0.669	1.23	20		

The following samples were analyzed in this batch: 24050011-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239796      Instrument ID ICPMS4      Method: SW6020B

MBLK		Sample ID: MBLK-239796-239796				Units: mg/L		Analysis Date: 5/9/2024 03:38 PM			
Client ID:		Run ID: ICPMS4_240509A				SeqNo: 10744520		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	0.0006589	0.00022	0.0050								J
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	U	0.00048	0.0050								
Sodium	U	0.13	0.20								
Thallium	U	0.00015	0.0050								

LCS		Sample ID: LCS-239796-239796				Units: mg/L		Analysis Date: 5/9/2024 03:40 PM			
Client ID:		Run ID: ICPMS4_240509A				SeqNo: 10744521		Prep Date: 5/8/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1064	0.00042	0.0050	0.1	0	106	80-120	0			
Arsenic	0.1035	0.00019	0.0050	0.1	0	103	80-120	0			
Barium	0.1073	0.00057	0.0050	0.1	0	107	80-120	0			
Beryllium	0.1061	0.00013	0.0020	0.1	0	106	80-120	0			
Boron	0.5313	0.015	0.020	0.5	0	106	80-120	0			
Cadmium	0.1063	0.00014	0.0020	0.1	0	106	80-120	0			
Calcium	10.7	0.22	0.50	10	0	107	80-120	0			
Chromium	0.1077	0.00061	0.0050	0.1	0	108	80-120	0			
Cobalt	0.1078	0.00027	0.0050	0.1	0	108	80-120	0			
Iron	10.64	0.047	0.080	10	0	106	80-120	0			
Lead	0.1077	0.00022	0.0050	0.1	0	108	80-120	0			
Lithium	0.1035	0.0017	0.010	0.1	0	104	80-120	0			
Magnesium	11.15	0.037	0.20	10	0	111	80-120	0			
Molybdenum	0.1068	0.00033	0.0050	0.1	0	107	80-120	0			
Potassium	10.73	0.034	0.20	10	0	107	80-120	0			
Selenium	0.1057	0.00048	0.0050	0.1	0	106	80-120	0			
Sodium	11.1	0.13	0.20	10	0	111	80-120	0			
Thallium	0.1022	0.00015	0.0050	0.1	0	102	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 239796 Instrument ID ICPMS4 Method: SW6020B

MS					Sample ID: 24042078-02BMS			Units: mg/L		Analysis Date: 5/9/2024 03:43 PM		
Client ID:			Run ID: ICPMS4_240509A			SeqNo: 10744523		Prep Date: 5/8/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.108	0.00042	0.0050	0.1	0.0002871	108	75-125	0				
Arsenic	0.1064	0.00019	0.0050	0.1	0.001024	105	75-125	0				
Barium	0.1242	0.00057	0.0050	0.1	0.01459	110	75-125	0				
Beryllium	0.1077	0.00013	0.0020	0.1	0.000033	108	75-125	0				
Boron	0.5492	0.015	0.020	0.5	0.01936	106	75-125	0				
Cadmium	0.1069	0.00014	0.0020	0.1	0.0001133	107	75-125	0				
Calcium	73.43	0.22	0.50	10	66.27	71.6	75-125	0			SO	
Chromium	0.1098	0.00061	0.0050	0.1	0.0008063	109	75-125	0				
Cobalt	0.1087	0.00027	0.0050	0.1	0.0006314	108	75-125	0				
Iron	11.09	0.047	0.080	10	0.336	108	75-125	0				
Lead	0.1091	0.00022	0.0050	0.1	0.0005126	109	75-125	0				
Lithium	0.1072	0.0017	0.010	0.1	0.001486	106	75-125	0				
Magnesium	30.92	0.037	0.20	10	20.94	99.8	75-125	0				
Molybdenum	0.1082	0.00033	0.0050	0.1	0.0000693	108	75-125	0				
Potassium	11.58	0.034	0.20	10	0.7476	108	75-125	0				
Selenium	0.1078	0.00048	0.0050	0.1	0.001585	106	75-125	0				
Sodium	14.29	0.13	0.20	10	3.358	109	75-125	0				
Thallium	0.1048	0.00015	0.0050	0.1	0.0003894	104	75-125	0				

MSD					Sample ID: 24042078-02BMSD			Units: mg/L		Analysis Date: 5/9/2024 03:45 PM		
Client ID:			Run ID: ICPMS4_240509A			SeqNo: 10744524		Prep Date: 5/8/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1062	0.00042	0.0050	0.1	0.0002871	106	75-125	0.108	1.66	20		
Arsenic	0.1051	0.00019	0.0050	0.1	0.001024	104	75-125	0.1064	1.21	20		
Barium	0.1237	0.00057	0.0050	0.1	0.01459	109	75-125	0.1242	0.388	20		
Beryllium	0.1066	0.00013	0.0020	0.1	0.000033	107	75-125	0.1077	1.04	20		
Boron	0.5445	0.015	0.020	0.5	0.01936	105	75-125	0.5492	0.856	20		
Cadmium	0.1054	0.00014	0.0020	0.1	0.0001133	105	75-125	0.1069	1.39	20		
Calcium	73.67	0.22	0.50	10	66.27	74	75-125	73.43	0.324	20	SO	
Chromium	0.1081	0.00061	0.0050	0.1	0.0008063	107	75-125	0.1098	1.61	20		
Cobalt	0.1068	0.00027	0.0050	0.1	0.0006314	106	75-125	0.1087	1.74	20		
Iron	10.87	0.047	0.080	10	0.336	105	75-125	11.09	1.97	20		
Lead	0.1076	0.00022	0.0050	0.1	0.0005126	107	75-125	0.1091	1.37	20		
Lithium	0.1053	0.0017	0.010	0.1	0.001486	104	75-125	0.1072	1.85	20		
Magnesium	30.88	0.037	0.20	10	20.94	99.4	75-125	30.92	0.134	20		
Molybdenum	0.1075	0.00033	0.0050	0.1	0.0000693	107	75-125	0.1082	0.661	20		
Potassium	11.43	0.034	0.20	10	0.7476	107	75-125	11.58	1.26	20		
Selenium	0.1056	0.00048	0.0050	0.1	0.001585	104	75-125	0.1078	2.07	20		
Sodium	14.16	0.13	0.20	10	3.358	108	75-125	14.29	0.925	20		
Thallium	0.1033	0.00015	0.0050	0.1	0.0003894	103	75-125	0.1048	1.39	20		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** ETEM  
**Work Order:** 24050011  
**Project:** Sammis 2024 1SA Sampling

**QC BATCH REPORT**

Batch ID: **239796**      Instrument ID **ICPMS4**      Method: **SW6020B**

The following samples were analyzed in this batch:

24050076-01A	24050076-02A	24050076-03A
24050076-04A	24050080-01A	24050080-02A
24050080-03A	24050080-04A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240052      Instrument ID ICPMS3      Method: SW6020B

MBLK		Sample ID: MBLK-240052-240052				Units: mg/L		Analysis Date: 5/13/2024 11:52 PM			
Client ID:		Run ID: ICPMS3_240513A				SeqNo: 10756280		Prep Date: 5/13/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	0.0007997	0.00061	0.0050								J
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	U	0.00048	0.0050								
Sodium	U	0.13	0.20								
Thallium	U	0.00015	0.0050								

LCS		Sample ID: LCS-240052-240052				Units: mg/L		Analysis Date: 5/13/2024 11:54 PM			
Client ID:		Run ID: ICPMS3_240513A				SeqNo: 10756281		Prep Date: 5/13/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1044	0.00042	0.0050	0.1	0	104	80-120	0			
Arsenic	0.09992	0.00019	0.0050	0.1	0	99.9	80-120	0			
Barium	0.1101	0.00057	0.0050	0.1	0	110	80-120	0			
Beryllium	0.1034	0.00013	0.0020	0.1	0	103	80-120	0			
Boron	0.5304	0.015	0.020	0.5	0	106	80-120	0			
Cadmium	0.1027	0.00014	0.0020	0.1	0	103	80-120	0			
Calcium	10.73	0.22	0.50	10	0	107	80-120	0			
Chromium	0.0985	0.00061	0.0050	0.1	0	98.5	80-120	0			
Cobalt	0.1019	0.00027	0.0050	0.1	0	102	80-120	0			
Iron	10.2	0.047	0.080	10	0	102	80-120	0			
Lead	0.1059	0.00022	0.0050	0.1	0	106	80-120	0			
Lithium	0.09994	0.0017	0.010	0.1	0	99.9	80-120	0			
Magnesium	10.77	0.037	0.20	10	0	108	80-120	0			
Molybdenum	0.1047	0.00033	0.0050	0.1	0	105	80-120	0			
Potassium	10.87	0.034	0.20	10	0	109	80-120	0			
Selenium	0.1002	0.00048	0.0050	0.1	0	100	80-120	0			
Sodium	10.54	0.13	0.20	10	0	105	80-120	0			
Thallium	0.1012	0.00015	0.0050	0.1	0	101	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240052 Instrument ID ICPMS3 Method: SW6020B

MS					Sample ID: 24050226-02AMS			Units: mg/L		Analysis Date: 5/14/2024 12:10 AM		
Client ID:			Run ID: ICPMS3_240513A			SeqNo: 10756290		Prep Date: 5/13/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.09552	0.00042	0.0050	0.1	0.0000022	95.5	75-125	0				
Arsenic	0.1265	0.00019	0.0050	0.1	0.0331	93.4	75-125	0				
Barium	0.5197	0.00057	0.0050	0.1	0.4303	89.5	75-125	0			O	
Beryllium	0.09816	0.00013	0.0020	0.1	0.0000132	98.2	75-125	0				
Boron	0.5351	0.015	0.020	0.5	0.03392	100	75-125	0				
Cadmium	0.09323	0.00014	0.0020	0.1	0.0000143	93.2	75-125	0				
Calcium	102.3	0.22	0.50	10	95.74	65.9	75-125	0			SO	
Chromium	0.09214	0.00061	0.0050	0.1	0.0003751	91.8	75-125	0				
Cobalt	0.09603	0.00027	0.0050	0.1	0.0001573	95.9	75-125	0				
Iron	74.6	0.047	0.080	10	68.41	61.9	75-125	0			SO	
Lead	0.09983	0.00022	0.0050	0.1	0.0000286	99.8	75-125	0				
Lithium	0.09458	0.0017	0.010	0.1	-0.000594	95.2	75-125	0				
Magnesium	30.53	0.037	0.20	10	21.5	90.3	75-125	0				
Molybdenum	0.09958	0.00033	0.0050	0.1	0.0003014	99.3	75-125	0				
Potassium	14.07	0.034	0.20	10	3.927	101	75-125	0				
Selenium	0.09484	0.00048	0.0050	0.1	0.0003223	94.5	75-125	0				
Sodium	17.25	0.13	0.20	10	7.735	95.2	75-125	0				
Thallium	0.09706	0.00015	0.0050	0.1	0.0000033	97.1	75-125	0				

MSD					Sample ID: 24050226-02AMSD			Units: mg/L		Analysis Date: 5/14/2024 12:12 AM		
Client ID:			Run ID: ICPMS3_240513A			SeqNo: 10756291		Prep Date: 5/13/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.09772	0.00042	0.0050	0.1	0.0000022	97.7	75-125	0.09552	2.28	20		
Arsenic	0.1288	0.00019	0.0050	0.1	0.0331	95.7	75-125	0.1265	1.79	20		
Barium	0.5242	0.00057	0.0050	0.1	0.4303	93.9	75-125	0.5197	0.851	20	O	
Beryllium	0.1006	0.00013	0.0020	0.1	0.0000132	101	75-125	0.09816	2.48	20		
Boron	0.5461	0.015	0.020	0.5	0.03392	102	75-125	0.5351	2.04	20		
Cadmium	0.09485	0.00014	0.0020	0.1	0.0000143	94.8	75-125	0.09323	1.72	20		
Calcium	102.3	0.22	0.50	10	95.74	65.8	75-125	102.3	0.0166	20	SO	
Chromium	0.09498	0.00061	0.0050	0.1	0.0003751	94.6	75-125	0.09214	3.04	20		
Cobalt	0.09812	0.00027	0.0050	0.1	0.0001573	98	75-125	0.09603	2.15	20		
Iron	75.94	0.047	0.080	10	68.41	75.3	75-125	74.6	1.78	20	O	
Lead	0.1027	0.00022	0.0050	0.1	0.0000286	103	75-125	0.09983	2.86	20		
Lithium	0.09653	0.0017	0.010	0.1	-0.000594	97.1	75-125	0.09458	2.03	20		
Magnesium	31.11	0.037	0.20	10	21.5	96.2	75-125	30.53	1.9	20		
Molybdenum	0.1022	0.00033	0.0050	0.1	0.0003014	102	75-125	0.09958	2.64	20		
Potassium	14.38	0.034	0.20	10	3.927	105	75-125	14.07	2.18	20		
Selenium	0.09896	0.00048	0.0050	0.1	0.0003223	98.6	75-125	0.09484	4.25	20		
Sodium	17.65	0.13	0.20	10	7.735	99.2	75-125	17.25	2.3	20		
Thallium	0.09944	0.00015	0.0050	0.1	0.0000033	99.4	75-125	0.09706	2.42	20		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** ETEM  
**Work Order:** 24050011  
**Project:** Sammis 2024 1SA Sampling

**QC BATCH REPORT**

Batch ID: **240052**      Instrument ID **ICPMS3**      Method: **SW6020B**

The following samples were analyzed in this batch:

24050270-01A	24050270-02A	24050273-01A
24050273-02A	24050273-03A	

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240123      Instrument ID ICPMS3      Method: SW6020B

MBLK		Sample ID: MBLK-240123-240123				Units: mg/L		Analysis Date: 5/14/2024 08:52 PM			
Client ID:		Run ID: ICPMS3_240514A				SeqNo: 10760267		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	0.000242	0.00019	0.0050								J
Barium	U	0.00057	0.0050								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								

MBLK		Sample ID: MBLK-240123-240123				Units: mg/L		Analysis Date: 5/15/2024 03:54 PM			
Client ID:		Run ID: ICPMS3_240515A				SeqNo: 10765457		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.0003036	0.00013	0.0020								J
Lithium	U	0.0017	0.010								
Potassium	0.03808	0.034	0.20								J
Selenium	U	0.00048	0.0050								
Sodium	U	0.13	0.20								
Thallium	0.0001507	0.00015	0.0050								J

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240123      Instrument ID ICPMS3      Method: SW6020B

LCS		Sample ID: LCS-240123-240123				Units: mg/L		Analysis Date: 5/14/2024 08:54 PM			
Client ID:		Run ID: ICPMS3_240514A				SeqNo: 10760268		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.11	0.00042	0.0050	0.1	0	110	80-120	0			
Arsenic	0.1042	0.00019	0.0050	0.1	0	104	80-120	0			
Barium	0.1107	0.00057	0.0050	0.1	0	111	80-120	0			
Boron	0.5373	0.015	0.020	0.5	0	107	80-120	0			
Cadmium	0.1117	0.00014	0.0020	0.1	0	112	80-120	0			
Calcium	10.83	0.22	0.50	10	0	108	80-120	0			
Chromium	0.1093	0.00061	0.0050	0.1	0	109	80-120	0			
Cobalt	0.113	0.00027	0.0050	0.1	0	113	80-120	0			
Iron	10.75	0.047	0.080	10	0	108	80-120	0			
Lead	0.1069	0.00022	0.0050	0.1	0	107	80-120	0			
Magnesium	11.32	0.037	0.20	10	0	113	80-120	0			
Molybdenum	0.1054	0.00033	0.0050	0.1	0	105	80-120	0			
Potassium	10.63	0.034	0.20	10	0	106	80-120	0			
Selenium	0.1018	0.00048	0.0050	0.1	0	102	80-120	0			
Sodium	11.54	0.13	0.20	10	0	115	80-120	0			
Thallium	0.1014	0.00015	0.0050	0.1	0	101	80-120	0			

LCS		Sample ID: LCS-240123-240123				Units: mg/L		Analysis Date: 5/15/2024 03:55 PM			
Client ID:		Run ID: ICPMS3_240515A				SeqNo: 10765458		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.1048	0.00013	0.0020	0.1	0	105	80-120	0			
Lithium	0.1003	0.0017	0.010	0.1	0	100	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240123      Instrument ID ICPMS3      Method: SW6020B

MS					Sample ID: 24050306-02CMS			Units: mg/L		Analysis Date: 5/14/2024 09:15 PM		
Client ID:			Run ID: ICPMS3_240514A			SeqNo: 10760281		Prep Date: 5/14/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1052	0.00042	0.0050	0.1	0.000066	105	75-125	0				
Arsenic	0.1004	0.00019	0.0050	0.1	0.0001067	100	75-125	0				
Barium	0.1347	0.00057	0.0050	0.1	0.03112	104	75-125	0				
Boron	0.5379	0.015	0.020	0.5	0.01491	105	75-125	0				
Cadmium	0.1045	0.00014	0.0020	0.1	0.0000099	104	75-125	0				
Calcium	39.16	0.22	0.50	10	30.93	82.3	75-125	0				
Chromium	0.1046	0.00061	0.0050	0.1	0.0006534	104	75-125	0				
Cobalt	0.1056	0.00027	0.0050	0.1	0.0000264	106	75-125	0				
Iron	10.19	0.047	0.080	10	0.0109	102	75-125	0				
Lead	0.1011	0.00022	0.0050	0.1	0.0000143	101	75-125	0				
Magnesium	14.59	0.037	0.20	10	4.098	105	75-125	0				
Molybdenum	0.1011	0.00033	0.0050	0.1	0.0000088	101	75-125	0				
Potassium	11.57	0.034	0.20	10	1.568	100	75-125	0				
Selenium	0.09618	0.00048	0.0050	0.1	0.0001001	96.1	75-125	0				
Sodium	134.9	0.13	0.20	10	131.5	34.1	75-125	0			SO	
Thallium	0.09684	0.00015	0.0050	0.1	0.000011	96.8	75-125	0				

MS					Sample ID: 24050306-02CMS			Units: mg/L		Analysis Date: 5/15/2024 04:13 PM		
Client ID:			Run ID: ICPMS3_240515A			SeqNo: 10765469		Prep Date: 5/14/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Beryllium	0.1005	0.00013	0.0020	0.1	0.0000583	100	75-125	0				
Lithium	0.09424	0.0017	0.010	0.1	0.001217	93	75-125	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24050011  
Project: Sammis 2024 ISA Sampling

QC BATCH REPORT

Batch ID: 240123      Instrument ID ICPMS3      Method: SW6020B

MSD		Sample ID: 24050306-02CMSD					Units: mg/L		Analysis Date: 5/14/2024 09:17 PM		
Client ID:		Run ID: ICPMS3_240514A				SeqNo: 10760282		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1058	0.00042	0.0050	0.1	0.000066	106	75-125	0.1052	0.585	20	
Arsenic	0.1009	0.00019	0.0050	0.1	0.0001067	101	75-125	0.1004	0.519	20	
Barium	0.136	0.00057	0.0050	0.1	0.03112	105	75-125	0.1347	1.02	20	
Boron	0.5506	0.015	0.020	0.5	0.01491	107	75-125	0.5379	2.35	20	
Cadmium	0.1062	0.00014	0.0020	0.1	0.0000099	106	75-125	0.1045	1.66	20	
Calcium	39.16	0.22	0.50	10	30.93	82.3	75-125	39.16	0.0054	20	
Chromium	0.1048	0.00061	0.0050	0.1	0.0006534	104	75-125	0.1046	0.215	20	
Cobalt	0.1068	0.00027	0.0050	0.1	0.0000264	107	75-125	0.1056	1.08	20	
Iron	10.19	0.047	0.080	10	0.0109	102	75-125	10.19	0.0491	20	
Lead	0.1021	0.00022	0.0050	0.1	0.0000143	102	75-125	0.1011	0.999	20	
Magnesium	14.59	0.037	0.20	10	4.098	105	75-125	14.59	0.0123	20	
Molybdenum	0.103	0.00033	0.0050	0.1	0.0000088	103	75-125	0.1011	1.81	20	
Potassium	11.48	0.034	0.20	10	1.568	99.2	75-125	11.57	0.768	20	
Selenium	0.09599	0.00048	0.0050	0.1	0.0001001	95.9	75-125	0.09618	0.197	20	
Sodium	132.4	0.13	0.20	10	131.5	9.48	75-125	134.9	1.84	20	SO
Thallium	0.09717	0.00015	0.0050	0.1	0.000011	97.2	75-125	0.09684	0.339	20	

MSD		Sample ID: 24050306-02CMSD					Units: mg/L		Analysis Date: 5/15/2024 04:15 PM		
Client ID:		Run ID: ICPMS3_240515A				SeqNo: 10765470		Prep Date: 5/14/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Beryllium	0.1018	0.00013	0.0020	0.1	0.0000583	102	75-125	0.1005	1.35	20	
Lithium	0.09504	0.0017	0.010	0.1	0.001217	93.8	75-125	0.09424	0.84	20	

The following samples were analyzed in this batch:

24050273-04A	24050273-05A	24050279-01A
24050279-02A	24050279-03A	24050279-04A
24050279-05A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050011

ITEM: ETEM  
Project: Sammis 2024 1SA Sampling



dvanryn.2006@f-ts.com

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolved Metals																
				Preservative	HNO3																
				Total Bottle Count																	
04/29/2024	1421	GW	SMMS-MW-2-042924	1	1																

Notes:

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush
Printed Name: Dakota Vanryn	Printed Name: ALS	Printed Name: ALS	Printed Name: Diane F. Shaw	<input checked="" type="checkbox"/> Standard
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 04/29/2024 1502 1626	Date/Time: 4-29-24 1630	Date/Time: 4-29-24 1700	Date/Time: 4/30/24 1000	

1P3  
2.4°C  
pH 37





Ref 210311

# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050076

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



dvanryn.2006@f-ts.com

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolved Metals															
				Preservative																
				Total Bottle Count																
04/30/2024	0955	GW	SMMS-MW-9-043024	1	1															
04/30/2024	1238	GW	SMMS-MW-14S-043024	1	1															
04/30/2024	1417	GW	SMMS-P-1-043024	1	1															
04/30/2024	1420	GW	SMMS-FB-01-043024	1	1															

Notes:

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
Printed Name: Dakota Vanryn	Printed Name: Jacklyn Garrett	Printed Name: ALS	Printed Name: Diane F. Shea	<input type="checkbox"/> Rush
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	<input checked="" type="checkbox"/> Standard
Date/Time: 4/30/2024 1507	Date/Time: 4-30-2024 16:10	Date/Time: 4-30-24 1700	Date/Time: 5/1/24 1000	

1R3  
2.3 ±  
PH37





Ref 210311

# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050080

ETEM, ETEM  
Project: Sammis 2024 1SA Sampling



ISO15189-15.com

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

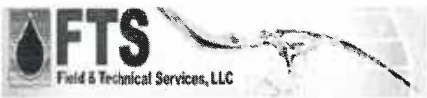
Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolved Metals																
						Preservative	HNO3														
				Total Bottle Count																	Notes:
04/30/2024	1200	GW	SMMS-MW-99A-043024	1	1																
04/30/2024	1225	GW	SMMS-MW-3-043024	1	1																
04/30/2024	1330	GW	SMMS-MW-4-043024	1	1																
04/30/2024	1440	GW	SMMS-MW-5-043024	1	1																

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Rianna Soltis	Printed Name: Jacklyn Garrett	Printed Name: ALS	Printed Name: Diane F. Shaw	
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 4/30/2024 1500	Date/Time: 4-30-2024 16:10	Date/Time: 4-30-24 1700	Date/Time: 5/1/24 1000	

1R3  
2.0°C  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050270

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



Ref 210311

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolve d Metals															
				Preservative																
				Total Bottle Count																
05/02/2024	1000	GW	SMMS-MW-15-050224	1	1															
05/02/2024	1120	GW	SMMS-MW-16-050224	1	1															

Notes:

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
				<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Rianna Soltis	Printed Name: Patrick M. Adams	Printed Name: Jacyin Garrett	Printed Name: Diane F. Shaw	
Firm FTS	Firm ALS	Firm ALS	Firm ALS	
Date/Time: 05/02/2024 11:57	Date/Time: 5/2/24	Date/Time: 5-2-24 17:00	Date/Time: 5/3/24 09:30	

DF2  
S.7c  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

24050273

ETEM: ETEM  
Project: Sammis 2024 1SA Sampling



Ref 210311

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolved Metals															
				Preservative																
				Total Bottle Count																Notes:
05/01/2024	1055	GW	SMMS-MW-11D-050124	1	1															
05/01/2024	1200	GW	SMMS-MW-11S-050124	1	1															
05/01/2024	1331	GW	SMMS-MW-6-050124	1	1															
05/01/2024	1400	GW	SMMS-MW-99B-050124	1	1															
05/01/2024	1500	GW	SMMS-MW-13BR-050124	1	1															

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush
Printed Name: Rianna Soltis	Printed Name: Jachyn Garrett	Printed Name: Kirk Mallin	Printed Name: Diane F. Sha	<input checked="" type="checkbox"/> Standard
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 5/1/24 1546	Date/Time: 5-1-24 16:48	Date/Time: 5-2-24 1700	Date/Time: 5/3/24 0930	

DF2  
5.7e  
PH37





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

REF # 502114

24050279

ETEM: ETEM  
Project Sammis 2024 1SA Sampling

Ref 210311

Project Name: Sammis 2024 Sampling  
Project Number: SMMS-1004-24  
Laboratory: ALS2  
Shipment Method: FTS  
Program: Sammis 2024 1SA Sampling

Company: Field & Technical Services  
Address: 200 Third Avenue  
Carnegie, PA 15106  
(412) 279-3363

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	6020B-7470A-Dissolve d Metals															
				Preservative		HNO3														
				Total Bottle Count																Notes:
05/01/2024	1040	GW	SMMS-MW-1-050124	1	1															
05/01/2024	1154	GW	SMMS-P-2-050124	1	1															
05/01/2024	1200	GW	SMMS-FB-02-050124	1	1															
05/01/2024	1343	GW	SMMS-MW-13S-050124	1	1															
05/01/2024	1516	GW	SMMS-MW-10D-050124	1	1															

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Dakota Vanryn	Printed Name: Jacklyn Garrett	Printed Name: Kirk Mehlis	Printed Name: Diane F. Shan	
Firm FTS	Firm ALS	Firm ACS	Firm ALS	
Date/Time: 05/01/2024 1540	Date/Time: 5-1-24 16:48	Date/Time: 5-2-24 1700	Date/Time: 5/3/24 0930	

DF2  
4.7°C  
PH37



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **30-Apr-24 10:00**

Work Order: **24050011**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by: **Jodi Blouw**

01-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.4/3.4 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 9:14:05 AM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **01-May-24 10:00**

Work Order: **24050076**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by: **Jodi Blouw**

02-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.3/3.3 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 2:22:16 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **01-May-24 10:00**

Work Order: **24050080**

Received by: **DS**

Checklist completed by **Diane Shaw**

01-May-24

Reviewed by: **Jodi Blouw**

02-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.0/3.0 c

IR3

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/1/2024 2:36:41 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050270**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

5.7/5.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:07:04 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050273**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

5.7/5.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:13:32 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **03-May-24 09:30**

Work Order: **24050279**

Received by: **DS**

Checklist completed by **Diane Shaw**

03-May-24

Reviewed by: **Jodi Blouw**

03-May-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

4.7/4.7 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

5/3/2024 2:42:23 PM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:





18-Dec-2024

Angela Gatchie  
ETEM  
200 Third Ave.  
Carnegie, PA 15106

Re: **Sammis 2024 2SA Sampling**

Work Order: **24100629**

Dear Angela,

Revision: **1**

ALS Environmental received 21 samples on 23-Oct-2024 through 26-Oct-2024 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 96.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA  
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

**Jodi Blouw**

Electronically approved by: Jodi Blouw

Jodi Blouw

### **Report of Laboratory Analysis**

Certificate No: FL E871106

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company



Client: ETEM  
Project: Sammis 2024 2SA Sampling  
Work Order: 24100629

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
24100629-01	SMMS-MW-3-102224	Groundwater		10/22/2024 13:00	10/23/2024 09:00	<input type="checkbox"/>
24100629-02	SMMS-MW-2-102324	Groundwater		10/23/2024 11:45	10/25/2024 09:30	<input type="checkbox"/>
24100629-03	SMMS-MW-1-102324	Groundwater		10/23/2024 12:50	10/25/2024 09:30	<input type="checkbox"/>
24100629-04	SMMS-MW-15-102324	Groundwater		10/23/2024 14:00	10/25/2024 09:30	<input type="checkbox"/>
24100629-05	SMMS-MW-9-102324	Groundwater		10/23/2024 15:30	10/25/2024 09:30	<input type="checkbox"/>
24100629-06	SMMS-MW-99A-102324	Groundwater		10/23/2024 12:00	10/25/2024 09:30	<input type="checkbox"/>
24100629-07	SMMS-FB-01-102324	Groundwater		10/23/2024 15:30	10/25/2024 09:30	<input type="checkbox"/>
24100629-08	SMMS-MW-4-102324	Groundwater		10/23/2024 10:41	10/25/2024 09:30	<input type="checkbox"/>
24100629-09	SMMS-MW-5-102324	Groundwater		10/23/2024 12:11	10/25/2024 09:30	<input type="checkbox"/>
24100629-10	SMMS-MW-6-102324	Groundwater		10/23/2024 13:37	10/25/2024 09:30	<input type="checkbox"/>
24100629-11	SMMS-P-2-102324	Groundwater		10/23/2024 15:18	10/25/2024 09:30	<input type="checkbox"/>
24100629-12	SMMS-MW-16-102424	Groundwater		10/24/2024 10:27	10/26/2024 08:00	<input type="checkbox"/>
24100629-13	SMMS-MW-13BR-102424	Groundwater		10/24/2024 12:31	10/26/2024 08:00	<input type="checkbox"/>
24100629-14	SMMS-MW-11S-102424	Groundwater		10/24/2024 15:00	10/26/2024 08:00	<input type="checkbox"/>
24100629-15	SMMS-MW-10D-102424	Groundwater		10/24/2024 16:35	10/26/2024 08:00	<input type="checkbox"/>
24100629-16	SMMS-MW-99B-102424	Groundwater		10/24/2024 16:57	10/26/2024 08:00	<input type="checkbox"/>
24100629-17	SMMS-MW-14S-102424	Groundwater		10/24/2024 10:15	10/26/2024 08:00	<input type="checkbox"/>
24100629-18	SMMS-P-1-102424	Groundwater		10/24/2024 11:21	10/26/2024 08:00	<input type="checkbox"/>
24100629-19	SMMS-MW-11D-102424	Groundwater		10/24/2024 12:38	10/26/2024 08:00	<input type="checkbox"/>
24100629-20	SMMS-MW-13S-102424	Groundwater		10/24/2024 15:24	10/26/2024 08:00	<input type="checkbox"/>
24100629-21	SMMS-FB-102424	Groundwater		10/24/2024 15:28	10/26/2024 08:00	<input type="checkbox"/>



**Client:** ETEM  
**Project:** Sammis 2024 2SA Sampling  
**Work Order:** 24100629

**Case Narrative**

Samples for the above noted Work Order were received on 10/23/2024. The attached "Sample Receipt Checklist" documents the status of custody seals, container integrity, preservation, and temperature compliance.

Samples were analyzed according to the analytical methodology previously transmitted in the "Work Order Acknowledgement". Methodologies are also documented in the "Analytical Result" section for each sample. Quality control results are listed in the "QC Report" section. Sample association for the reported quality control is located at the end of each batch summary. If applicable, results are appropriately qualified in the Analytical Result and QC Report sections. The "Qualifiers" section documents the various qualifiers, units, and acronyms utilized in reporting. A copy of the laboratory's scope of accreditation is available upon request.

With the following exceptions, all sample analyses achieved analytical criteria.

**Metals:**

Batch 248519, Method SW6020B, Sample 24100629-11CMSD: The MSD recovery was outside of the control limit; however, the result in the parent sample is greater than 4x the spike amount. No qualification is required for this analyte: Ca

Batch 248519, Method SW6020B, Sample 24100629-11CMSD: The MSD recovery was outside of the control limit. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required for this analyte: Na  
No other deviations or anomalies were noted.

**Wet Chemistry:**

Batch R414308A, Method SW9056A, Sample 24100629-17A MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for the following analyte(s): Sulfate

Batch R414308A, Method SW9056A, Sample 24100629-17A MS: Matrix spike value was outside upper limit of calibration. Processed at equivalent dilution level as the parent. Sulfate

Batch R414484B, Method SW9056A, Sample 24100629-17A MS: Matrix spike value was outside upper limit of calibration. Processed at equivalent dilution level as the parent. Chloride

Batch R414484B, Method SW9056A, Sample 24100629-17A MSD: Matrix spike duplicate value was outside upper limit of calibration. Processed at equivalent dilution level as the parent. Chloride







Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-01
Sample ID:	SMMS-MW-3-102224	Matrix:	GROUNDWATER
Collection Date:	10/22/2024 01:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/24/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/24/2024 15:29
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:23
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:23
Barium	0.035		0.00057	0.0050	mg/L	1	10/27/2024 18:23
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:23
Boron	0.053		0.015	0.020	mg/L	1	10/27/2024 18:23
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:23
Calcium	45		0.22	0.50	mg/L	1	10/27/2024 18:23
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:23
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:23
Iron	U		0.047	0.080	mg/L	1	10/27/2024 18:23
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:23
Lithium	0.0031	J	0.0017	0.010	mg/L	1	10/27/2024 18:23
Magnesium	10		0.037	0.20	mg/L	1	10/27/2024 18:23
Molybdenum	0.00052	J	0.00033	0.0050	mg/L	1	10/27/2024 18:23
Potassium	2.7		0.034	0.20	mg/L	1	10/27/2024 18:23
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:23
Sodium	26		0.13	0.20	mg/L	1	10/27/2024 18:23
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:23
ALKALINITY			Method: A2320 B-11			Analyst: SGH	
Alkalinity, Total (as CaCO3)	126		8.4	10	mg/L	1	10/31/2024 16:00
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	29.7		3.1	10	mg/L	10	10/29/2024 23:33
Fluoride	0.164		0.067	0.10	mg/L	1	10/29/2024 23:33
Sulfate	67.6		1.9	10	mg/L	10	10/29/2024 23:33
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	280		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-02
Sample ID:	SMMS-MW-2-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 11:45 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>		Prep: SW7470 / 10/28/24		Analyst: <b>HTJ</b>
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:35
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3015A / 10/27/24		Analyst: <b>DSC</b>
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:24
Arsenic	0.0021	J	0.00019	0.0050	mg/L	1	10/27/2024 18:24
Barium	0.055		0.00057	0.0050	mg/L	1	10/27/2024 18:24
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:24
Boron	0.050		0.015	0.020	mg/L	1	10/27/2024 18:24
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:24
Calcium	48		0.22	0.50	mg/L	1	10/27/2024 18:24
Chromium	0.0052		0.00061	0.0050	mg/L	1	10/27/2024 18:24
Cobalt	0.0013	J	0.00027	0.0050	mg/L	1	10/27/2024 18:24
Iron	2.9		0.047	0.080	mg/L	1	10/27/2024 18:24
Lead	0.0036	J	0.00022	0.0050	mg/L	1	10/27/2024 18:24
Lithium	0.0045	J	0.0017	0.010	mg/L	1	10/27/2024 18:24
Magnesium	11		0.037	0.20	mg/L	1	10/27/2024 18:24
Molybdenum	0.00064	J	0.00033	0.0050	mg/L	1	10/27/2024 18:24
Potassium	3.0		0.034	0.20	mg/L	1	10/27/2024 18:24
Selenium	0.00078	J	0.00048	0.0050	mg/L	1	10/27/2024 18:24
Sodium	25		0.13	0.20	mg/L	1	10/27/2024 18:24
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:24
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>KG</b>
Alkalinity, Total (as CaCO3)	128		8.4	10	mg/L	1	11/2/2024
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>QTN</b>
Chloride	29.3		3.1	10	mg/L	10	11/2/2024 17:11
Fluoride	0.154		0.067	0.10	mg/L	1	10/30/2024 00:02
Sulfate	70.6		1.9	10	mg/L	10	11/2/2024 17:11
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>		Prep: FILTER / 10/29/24		Analyst: <b>SRN</b>
Total Dissolved Solids	270		37	50	mg/L	1	10/31/2024 15:13
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-03
Sample ID:	SMMS-MW-1-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 12:50 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:40
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:26
Arsenic	0.00034	J	0.00019	0.0050	mg/L	1	10/27/2024 18:26
Barium	0.037		0.00057	0.0050	mg/L	1	10/27/2024 18:26
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:26
Boron	0.058		0.015	0.020	mg/L	1	10/27/2024 18:26
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:26
Calcium	44		0.22	0.50	mg/L	1	10/27/2024 18:26
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:26
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:26
Iron	0.15		0.047	0.080	mg/L	1	10/27/2024 18:26
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:26
Lithium	0.0022	J	0.0017	0.010	mg/L	1	10/27/2024 18:26
Magnesium	9.4		0.037	0.20	mg/L	1	10/27/2024 18:26
Molybdenum	0.00047	J	0.00033	0.0050	mg/L	1	10/27/2024 18:26
Potassium	2.9		0.034	0.20	mg/L	1	10/27/2024 18:26
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:26
Sodium	29		0.13	0.20	mg/L	1	10/27/2024 18:26
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:26
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	103		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	33.6		3.1	10	mg/L	10	11/2/2024 17:40
Fluoride	0.237		0.067	0.10	mg/L	1	10/30/2024 00:11
Sulfate	72.5		1.9	10	mg/L	10	11/2/2024 17:40
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	290		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-04
Sample ID:	SMMS-MW-15-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 02:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:42
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:28
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:28
Barium	0.031		0.00057	0.0050	mg/L	1	10/27/2024 18:28
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:28
Boron	0.19		0.015	0.020	mg/L	1	10/27/2024 18:28
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:28
Calcium	49		0.22	0.50	mg/L	1	10/27/2024 18:28
Chromium	0.0036	J	0.00061	0.0050	mg/L	1	10/27/2024 18:28
Cobalt	0.00039	J	0.00027	0.0050	mg/L	1	10/27/2024 18:28
Iron	U		0.047	0.080	mg/L	1	10/27/2024 18:28
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:28
Lithium	0.0033	J	0.0017	0.010	mg/L	1	10/27/2024 18:28
Magnesium	11		0.037	0.20	mg/L	1	10/27/2024 18:28
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:28
Potassium	2.6		0.034	0.20	mg/L	1	10/27/2024 18:28
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:28
Sodium	31		0.13	0.20	mg/L	1	10/27/2024 18:28
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:28
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	124		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	42.7		3.1	10	mg/L	10	11/2/2024 17:50
Fluoride	0.294		0.067	0.10	mg/L	1	10/30/2024 00:21
Sulfate	77.9		1.9	10	mg/L	10	11/2/2024 17:50
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	310		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-05
Sample ID:	SMMS-MW-9-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 03:30 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24		Analyst: HTJ
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:44
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24		Analyst: DSC
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:30
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:30
Barium	0.030		0.00057	0.0050	mg/L	1	10/27/2024 18:30
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:30
Boron	0.16		0.015	0.020	mg/L	1	10/27/2024 18:30
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:30
Calcium	51		0.22	0.50	mg/L	1	10/27/2024 18:30
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:30
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:30
Iron	U		0.047	0.080	mg/L	1	10/27/2024 18:30
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:30
Lithium	0.0039	J	0.0017	0.010	mg/L	1	10/27/2024 18:30
Magnesium	11		0.037	0.20	mg/L	1	10/27/2024 18:30
Molybdenum	0.00070	J	0.00033	0.0050	mg/L	1	10/27/2024 18:30
Potassium	2.9		0.034	0.20	mg/L	1	10/27/2024 18:30
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:30
Sodium	28		0.13	0.20	mg/L	1	10/27/2024 18:30
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:30
ALKALINITY			Method: A2320 B-11				Analyst: KG
Alkalinity, Total (as CaCO3)	115		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: QTN
Chloride	36.7		3.1	10	mg/L	10	11/2/2024 17:59
Fluoride	0.131		0.067	0.10	mg/L	1	10/30/2024 00:31
Sulfate	70.6		1.9	10	mg/L	10	11/2/2024 17:59
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24		Analyst: SRN
Total Dissolved Solids	320		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-06
Sample ID:	SMMS-MW-99A-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 12:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>		Prep: SW7470 / 10/28/24		Analyst: <b>HTJ</b>
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:45
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3015A / 10/27/24		Analyst: <b>DSC</b>
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:31
Arsenic	0.00030	J	0.00019	0.0050	mg/L	1	10/27/2024 18:31
Barium	0.037		0.00057	0.0050	mg/L	1	10/27/2024 18:31
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:31
Boron	0.059		0.015	0.020	mg/L	1	10/27/2024 18:31
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:31
Calcium	44		0.22	0.50	mg/L	1	10/27/2024 18:31
Chromium	0.00062	J	0.00061	0.0050	mg/L	1	10/27/2024 18:31
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:31
Iron	0.13		0.047	0.080	mg/L	1	10/27/2024 18:31
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:31
Lithium	0.0020	J	0.0017	0.010	mg/L	1	10/27/2024 18:31
Magnesium	9.5		0.037	0.20	mg/L	1	10/27/2024 18:31
Molybdenum	0.00044	J	0.00033	0.0050	mg/L	1	10/27/2024 18:31
Potassium	3.0		0.034	0.20	mg/L	1	10/27/2024 18:31
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:31
Sodium	30		0.13	0.20	mg/L	1	10/27/2024 18:31
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:31
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>KG</b>
Alkalinity, Total (as CaCO3)	111		8.4	10	mg/L	1	11/2/2024
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>QTN</b>
Chloride	33.7		3.1	10	mg/L	10	11/2/2024 18:09
Fluoride	0.240		0.067	0.10	mg/L	1	10/30/2024 00:41
Sulfate	73.1		1.9	10	mg/L	10	11/2/2024 18:09
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>		Prep: FILTER / 10/29/24		Analyst: <b>SRN</b>
Total Dissolved Solids	300		37	50	mg/L	1	10/31/2024 15:13
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-07
Sample ID:	SMMS-FB-01-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 03:30 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:47
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:33
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:33
Barium	U		0.00057	0.0050	mg/L	1	10/27/2024 18:33
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:33
Boron	U		0.015	0.020	mg/L	1	10/27/2024 18:33
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:33
Calcium	U		0.22	0.50	mg/L	1	10/27/2024 18:33
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:33
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:33
Iron	U		0.047	0.080	mg/L	1	10/27/2024 18:33
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:33
Lithium	U		0.0017	0.010	mg/L	1	10/27/2024 18:33
Magnesium	U		0.037	0.20	mg/L	1	10/27/2024 18:33
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:33
Potassium	U		0.034	0.20	mg/L	1	10/27/2024 18:33
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:33
Sodium	0.18	J	0.13	0.20	mg/L	1	10/27/2024 18:33
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:33
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	25.4		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	U		0.31	1.0	mg/L	1	10/30/2024 00:50
Fluoride	U		0.067	0.10	mg/L	1	10/30/2024 00:50
Sulfate	U		0.19	1.0	mg/L	1	10/30/2024 00:50
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	19		11	15	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-08
Sample ID:	SMMS-MW-4-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 10:41 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:54
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:38
Arsenic	0.00022	J	0.00019	0.0050	mg/L	1	10/27/2024 18:38
Barium	0.036		0.00057	0.0050	mg/L	1	10/27/2024 18:38
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:38
Boron	0.11		0.015	0.020	mg/L	1	10/27/2024 18:38
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:38
Calcium	47		0.22	0.50	mg/L	1	10/27/2024 18:38
Chromium	0.0010	J	0.00061	0.0050	mg/L	1	10/27/2024 18:38
Cobalt	U		0.00027	0.0050	mg/L	1	10/27/2024 18:38
Iron	U		0.047	0.080	mg/L	1	10/27/2024 18:38
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:38
Lithium	0.0028	J	0.0017	0.010	mg/L	1	10/27/2024 18:38
Magnesium	10		0.037	0.20	mg/L	1	10/27/2024 18:38
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:38
Potassium	2.7		0.034	0.20	mg/L	1	10/27/2024 18:38
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:38
Sodium	28		0.13	0.20	mg/L	1	10/27/2024 18:38
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:38
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	106		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	35.7		3.1	10	mg/L	10	11/2/2024 18:19
Fluoride	0.236		0.067	0.10	mg/L	1	10/30/2024 01:20
Sulfate	74.7		1.9	10	mg/L	10	11/2/2024 18:19
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	300		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-09
Sample ID:	SMMS-MW-5-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 12:11 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:56
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:40
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:40
Barium	0.019		0.00057	0.0050	mg/L	1	10/27/2024 18:40
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:40
Boron	0.072		0.015	0.020	mg/L	1	10/27/2024 18:40
Cadmium	0.00020	J	0.00014	0.0020	mg/L	1	10/27/2024 18:40
Calcium	50		0.22	0.50	mg/L	1	10/27/2024 18:40
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:40
Cobalt	0.0023	J	0.00027	0.0050	mg/L	1	10/27/2024 18:40
Iron	2.3		0.047	0.080	mg/L	1	10/27/2024 18:40
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:40
Lithium	0.0022	J	0.0017	0.010	mg/L	1	10/27/2024 18:40
Magnesium	12		0.037	0.20	mg/L	1	10/27/2024 18:40
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:40
Potassium	2.7		0.034	0.20	mg/L	1	10/27/2024 18:40
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:40
Sodium	37		0.13	0.20	mg/L	1	10/27/2024 18:40
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:40
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	72.6		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	44.5		3.1	10	mg/L	10	11/2/2024 18:48
Fluoride	0.204		0.067	0.10	mg/L	1	10/30/2024 01:29
Sulfate	134		1.9	10	mg/L	10	11/2/2024 18:48
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	350		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-10
Sample ID:	SMMS-MW-6-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 01:37 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24		Analyst: HTJ
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 09:58
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24		Analyst: DSC
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:42
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:42
Barium	0.014		0.00057	0.0050	mg/L	1	10/27/2024 18:42
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:42
Boron	0.10		0.015	0.020	mg/L	1	10/27/2024 18:42
Cadmium	0.00022	J	0.00014	0.0020	mg/L	1	10/27/2024 18:42
Calcium	61		0.22	0.50	mg/L	1	10/27/2024 18:42
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:42
Cobalt	0.0085		0.00027	0.0050	mg/L	1	10/27/2024 18:42
Iron	8.5		0.047	0.080	mg/L	1	10/27/2024 18:42
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:42
Lithium	0.0021	J	0.0017	0.010	mg/L	1	10/27/2024 18:42
Magnesium	15		0.037	0.20	mg/L	1	10/27/2024 18:42
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:42
Potassium	3.0		0.034	0.20	mg/L	1	10/27/2024 18:42
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:42
Sodium	48		0.13	0.20	mg/L	1	10/27/2024 18:42
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:42
ALKALINITY			Method: A2320 B-11				Analyst: KG
Alkalinity, Total (as CaCO3)	20.5		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A				Analyst: QTN
Chloride	14.9		3.1	10	mg/L	10	11/2/2024 18:58
Fluoride	U		0.067	0.10	mg/L	1	10/30/2024 01:39
Sulfate	52.0		1.9	10	mg/L	10	11/2/2024 18:58
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24		Analyst: SRN
Total Dissolved Solids	480		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-11
Sample ID:	SMMS-P-2-102324	Matrix:	GROUNDWATER
Collection Date:	10/23/2024 03:18 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/28/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 10:00
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/27/24	Analyst: DSC	
Antimony	U		0.00042	0.0050	mg/L	1	10/27/2024 18:43
Arsenic	U		0.00019	0.0050	mg/L	1	10/27/2024 18:43
Barium	0.029		0.00057	0.0050	mg/L	1	10/27/2024 18:43
Beryllium	U		0.00013	0.0020	mg/L	1	10/27/2024 18:43
Boron	0.058		0.015	0.020	mg/L	1	10/27/2024 18:43
Cadmium	U		0.00014	0.0020	mg/L	1	10/27/2024 18:43
Calcium	48		0.22	0.50	mg/L	1	10/27/2024 18:43
Chromium	U		0.00061	0.0050	mg/L	1	10/27/2024 18:43
Cobalt	0.00066	J	0.00027	0.0050	mg/L	1	10/27/2024 18:43
Iron	0.57		0.047	0.080	mg/L	1	10/27/2024 18:43
Lead	U		0.00022	0.0050	mg/L	1	10/27/2024 18:43
Lithium	0.0027	J	0.0017	0.010	mg/L	1	10/27/2024 18:43
Magnesium	11		0.037	0.20	mg/L	1	10/27/2024 18:43
Molybdenum	U		0.00033	0.0050	mg/L	1	10/27/2024 18:43
Potassium	2.7		0.034	0.20	mg/L	1	10/27/2024 18:43
Selenium	U		0.00048	0.0050	mg/L	1	10/27/2024 18:43
Sodium	30		0.13	0.20	mg/L	1	10/27/2024 18:43
Thallium	U		0.00015	0.0050	mg/L	1	10/27/2024 18:43
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	108		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	35.9		3.1	10	mg/L	10	11/5/2024 19:21
Fluoride	0.265		0.067	0.10	mg/L	1	11/2/2024 19:08
Sulfate	80.1		1.9	10	mg/L	10	11/5/2024 19:21
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	310		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/18/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-12
Sample ID:	SMMS-MW-16-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 10:27 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: SW7470A			Prep: SW7470 / 10/29/24	Analyst: HTJ
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:15
<b>METALS BY ICP-MS</b>							
			Method: SW6020B			Prep: SW3015A / 10/29/24	Analyst: STP
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:42
Arsenic	0.0011	J	0.00019	0.0050	mg/L	1	10/29/2024 19:42
Barium	0.064		0.00057	0.0050	mg/L	1	10/29/2024 19:42
Beryllium	0.00013	J	0.00013	0.0020	mg/L	1	10/29/2024 19:42
Boron	0.13		0.015	0.020	mg/L	1	10/29/2024 19:42
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:42
Calcium	110		0.22	0.50	mg/L	1	10/29/2024 19:42
Chromium	0.0030	J	0.00061	0.0050	mg/L	1	10/29/2024 19:42
Cobalt	U		0.00027	0.0050	mg/L	1	10/29/2024 19:42
Iron	0.14		0.047	0.080	mg/L	1	10/29/2024 19:42
Lead	U		0.00022	0.0050	mg/L	1	10/29/2024 19:42
Lithium	0.022		0.0017	0.010	mg/L	1	10/29/2024 19:42
Magnesium	22		0.037	0.20	mg/L	1	10/29/2024 19:42
Molybdenum	0.0096		0.00033	0.0050	mg/L	1	10/29/2024 19:42
Potassium	13		0.034	0.20	mg/L	1	10/29/2024 19:42
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:42
Sodium	32		0.13	0.20	mg/L	1	10/29/2024 19:42
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:42
<b>ALKALINITY</b>							
			Method: A2320 B-11				Analyst: KG
Alkalinity, Total (as CaCO3)	142		8.4	10	mg/L	1	11/2/2024
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: SW9056A				Analyst: QTN
Chloride	18.3		0.31	1.0	mg/L	1	11/2/2024 19:18
Fluoride	0.164		0.067	0.10	mg/L	1	11/2/2024 19:18
Sulfate	299		7.6	40	mg/L	40	11/5/2024 19:51
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: A2540 C-15			Prep: FILTER / 10/29/24	Analyst: SRN
Total Dissolved Solids	600		37	50	mg/L	1	10/31/2024 15:13
<b>SUBCONTRACTED ANALYSES</b>							
			Method: SUBCONTRACT				Analyst: GEL
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-13
Sample ID:	SMMS-MW-13BR-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 12:31 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:26
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:44
Arsenic	0.0031	J	0.00019	0.0050	mg/L	1	10/29/2024 19:44
Barium	0.069		0.00057	0.0050	mg/L	1	10/29/2024 19:44
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:44
Boron	0.25		0.015	0.020	mg/L	1	10/29/2024 19:44
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:44
Calcium	4.8		0.22	0.50	mg/L	1	10/29/2024 19:44
Chromium	0.0018	J	0.00061	0.0050	mg/L	1	10/29/2024 19:44
Cobalt	U		0.00027	0.0050	mg/L	1	10/29/2024 19:44
Iron	0.28		0.047	0.080	mg/L	1	10/29/2024 19:44
Lead	U		0.00022	0.0050	mg/L	1	10/29/2024 19:44
Lithium	0.0056	J	0.0017	0.010	mg/L	1	10/29/2024 19:44
Magnesium	1.1		0.037	0.20	mg/L	1	10/29/2024 19:44
Molybdenum	0.0041	J	0.00033	0.0050	mg/L	1	10/29/2024 19:44
Potassium	1.7		0.034	0.20	mg/L	1	10/29/2024 19:44
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:44
Sodium	160		0.13	0.20	mg/L	1	10/29/2024 19:44
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:44
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	277		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	45.7		3.1	10	mg/L	10	11/5/2024 20:00
Fluoride	1.29		0.067	0.10	mg/L	1	11/2/2024 19:27
Sulfate	6.55		0.19	1.0	mg/L	1	11/8/2024 20:07
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	430		37	50	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-14
Sample ID:	SMMS-MW-11S-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 03:00 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>		Prep: SW7470 / 10/29/24		Analyst: <b>HTJ</b>
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:28
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3015A / 10/29/24		Analyst: <b>STP</b>
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:46
Arsenic	0.0085		0.00019	0.0050	mg/L	1	10/29/2024 19:46
Barium	0.032		0.00057	0.0050	mg/L	1	10/29/2024 19:46
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:46
Boron	0.17		0.015	0.020	mg/L	1	10/29/2024 19:46
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:46
Calcium	160		0.22	0.50	mg/L	1	10/29/2024 19:46
Chromium	0.0010	J	0.00061	0.0050	mg/L	1	10/29/2024 19:46
Cobalt	0.0092		0.00027	0.0050	mg/L	1	10/29/2024 19:46
Iron	9.2		0.047	0.080	mg/L	1	10/29/2024 19:46
Lead	0.00039	J	0.00022	0.0050	mg/L	1	10/29/2024 19:46
Lithium	0.012		0.0017	0.010	mg/L	1	10/29/2024 19:46
Magnesium	24		0.037	0.20	mg/L	1	10/29/2024 19:46
Molybdenum	0.00053	J	0.00033	0.0050	mg/L	1	10/29/2024 19:46
Potassium	3.3		0.034	0.20	mg/L	1	10/29/2024 19:46
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:46
Sodium	66		0.13	0.20	mg/L	1	10/29/2024 19:46
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:46
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>KG</b>
Alkalinity, Total (as CaCO3)	190		8.4	10	mg/L	1	11/2/2024
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>QTN</b>
Chloride	73.2		12	40	mg/L	40	11/5/2024 20:10
Fluoride	U		0.067	0.10	mg/L	1	11/2/2024 19:37
Sulfate	318		7.6	40	mg/L	40	11/5/2024 20:10
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>		Prep: FILTER / 10/31/24		Analyst: <b>LAD</b>
Total Dissolved Solids	810		37	50	mg/L	1	11/5/2024 13:30
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-15
Sample ID:	SMMS-MW-10D-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 04:35 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:29
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:47
Arsenic	0.0046	J	0.00019	0.0050	mg/L	1	10/29/2024 19:47
Barium	4.7		0.0057	0.050	mg/L	10	10/30/2024 18:04
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:47
Boron	0.20		0.015	0.020	mg/L	1	10/29/2024 19:47
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:47
Calcium	190		2.2	5.0	mg/L	10	10/30/2024 18:04
Chromium	0.0032	J	0.00061	0.0050	mg/L	1	10/29/2024 19:47
Cobalt	0.00061	J	0.00027	0.0050	mg/L	1	10/29/2024 19:47
Iron	3.9		0.047	0.080	mg/L	1	10/29/2024 19:47
Lead	U		0.00022	0.0050	mg/L	1	10/29/2024 19:47
Lithium	0.027		0.0017	0.010	mg/L	1	10/29/2024 19:47
Magnesium	58		0.037	0.20	mg/L	1	10/29/2024 19:47
Molybdenum	0.0043	J	0.00033	0.0050	mg/L	1	10/29/2024 19:47
Potassium	8.8		0.034	0.20	mg/L	1	10/29/2024 19:47
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:47
Sodium	890		1.3	2.0	mg/L	10	10/30/2024 18:04
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:47
ALKALINITY			Method: A2320 B-11			Analyst: KLB	
Alkalinity, Total (as CaCO3)	158		8.4	10	mg/L	1	11/7/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	2,000		50	160	mg/L	160	11/5/2024 20:20
Fluoride	0.109		0.067	0.10	mg/L	1	11/2/2024 19:47
Sulfate	0.256	J	0.19	1.0	mg/L	1	11/2/2024 19:47
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	3,600		220	300	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0	as noted		1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-16
Sample ID:	SMMS-MW-99B-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 04:57 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:31
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:49
Arsenic	0.0033	J	0.00019	0.0050	mg/L	1	10/29/2024 19:49
Barium	0.068		0.00057	0.0050	mg/L	1	10/29/2024 19:49
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:49
Boron	0.25		0.015	0.020	mg/L	1	10/29/2024 19:49
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:49
Calcium	4.7		0.22	0.50	mg/L	1	10/29/2024 19:49
Chromium	0.0018	J	0.00061	0.0050	mg/L	1	10/29/2024 19:49
Cobalt	U		0.00027	0.0050	mg/L	1	10/29/2024 19:49
Iron	0.28		0.047	0.080	mg/L	1	10/29/2024 19:49
Lead	U		0.00022	0.0050	mg/L	1	10/29/2024 19:49
Lithium	0.0055	J	0.0017	0.010	mg/L	1	10/29/2024 19:49
Magnesium	1.1		0.037	0.20	mg/L	1	10/29/2024 19:49
Molybdenum	0.0039	J	0.00033	0.0050	mg/L	1	10/29/2024 19:49
Potassium	1.7		0.034	0.20	mg/L	1	10/29/2024 19:49
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:49
Sodium	170		0.13	0.20	mg/L	1	10/29/2024 19:49
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:49
ALKALINITY			Method: A2320 B-11			Analyst: KLB	
Alkalinity, Total (as CaCO3)	268		8.4	10	mg/L	1	11/7/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	47.5		3.1	10	mg/L	10	11/5/2024 20:30
Fluoride	1.35		0.067	0.10	mg/L	1	11/2/2024 19:57
Sulfate	6.67		0.19	1.0	mg/L	1	11/2/2024 19:57
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	400		37	50	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-17
Sample ID:	SMMS-MW-14S-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 10:15 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:33
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:54
Arsenic	0.00057	J	0.00019	0.0050	mg/L	1	10/29/2024 19:54
Barium	0.041		0.00057	0.0050	mg/L	1	10/29/2024 19:54
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:54
Boron	0.068		0.015	0.020	mg/L	1	10/29/2024 19:54
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 19:54
Calcium	68		0.22	0.50	mg/L	1	10/29/2024 19:54
Chromium	U		0.00061	0.0050	mg/L	1	10/29/2024 19:54
Cobalt	0.00080	J	0.00027	0.0050	mg/L	1	10/29/2024 19:54
Iron	0.80		0.047	0.080	mg/L	1	10/29/2024 19:54
Lead	0.00035	J	0.00022	0.0050	mg/L	1	10/29/2024 19:54
Lithium	0.0041	J	0.0017	0.010	mg/L	1	10/29/2024 19:54
Magnesium	12		0.037	0.20	mg/L	1	10/29/2024 19:54
Molybdenum	0.00047	J	0.00033	0.0050	mg/L	1	10/29/2024 19:54
Potassium	2.6		0.034	0.20	mg/L	1	10/29/2024 19:54
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:54
Sodium	35		0.13	0.20	mg/L	1	10/29/2024 19:54
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:54
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	124		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	48.7		3.1	10	mg/L	10	11/8/2024 20:16
Fluoride	0.166		0.067	0.10	mg/L	1	11/2/2024 20:06
Sulfate	102		1.9	10	mg/L	10	11/8/2024 20:16
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/29/24	Analyst: SRN	
Total Dissolved Solids	400		37	50	mg/L	1	10/31/2024 15:13
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-18
Sample ID:	SMMS-P-1-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 11:21 AM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:35
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:56
Arsenic	0.00089	J	0.00019	0.0050	mg/L	1	10/29/2024 19:56
Barium	0.014		0.00057	0.0050	mg/L	1	10/29/2024 19:56
Beryllium	0.00017	J	0.00013	0.0020	mg/L	1	10/29/2024 19:56
Boron	0.14		0.015	0.020	mg/L	1	10/29/2024 19:56
Cadmium	0.00044	J	0.00014	0.0020	mg/L	1	10/29/2024 19:56
Calcium	67		0.22	0.50	mg/L	1	10/29/2024 19:56
Chromium	U		0.00061	0.0050	mg/L	1	10/29/2024 19:56
Cobalt	0.017		0.00027	0.0050	mg/L	1	10/29/2024 19:56
Iron	15		0.047	0.080	mg/L	1	10/29/2024 19:56
Lead	0.00026	J	0.00022	0.0050	mg/L	1	10/29/2024 19:56
Lithium	0.0043	J	0.0017	0.010	mg/L	1	10/29/2024 19:56
Magnesium	17		0.037	0.20	mg/L	1	10/29/2024 19:56
Molybdenum	U		0.00033	0.0050	mg/L	1	10/29/2024 19:56
Potassium	3.2		0.034	0.20	mg/L	1	10/29/2024 19:56
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:56
Sodium	55		0.13	0.20	mg/L	1	10/29/2024 19:56
Thallium	0.00017	J	0.00015	0.0050	mg/L	1	10/29/2024 19:56
ALKALINITY			Method: A2320 B-11			Analyst: KLB	
Alkalinity, Total (as CaCO3)	U		8.4	10	mg/L	1	11/7/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	66.8		5.0	16	mg/L	16	11/8/2024 20:46
Fluoride	U		0.067	0.10	mg/L	1	11/2/2024 20:16
Sulfate	313		3.0	16	mg/L	16	11/8/2024 20:46
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	520		37	50	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-19
Sample ID:	SMMS-MW-11D-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 12:38 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:37
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:57
Arsenic	0.00070	J	0.00019	0.0050	mg/L	1	10/29/2024 19:57
Barium	0.015		0.00057	0.0050	mg/L	1	10/29/2024 19:57
Beryllium	0.00037	J	0.00013	0.0020	mg/L	1	10/29/2024 19:57
Boron	0.17		0.015	0.020	mg/L	1	10/29/2024 19:57
Cadmium	0.0012	J	0.00014	0.0020	mg/L	1	10/29/2024 19:57
Calcium	76		0.22	0.50	mg/L	1	10/29/2024 19:57
Chromium	U		0.00061	0.0050	mg/L	1	10/29/2024 19:57
Cobalt	0.039		0.00027	0.0050	mg/L	1	10/29/2024 19:57
Iron	12		0.047	0.080	mg/L	1	10/29/2024 19:57
Lead	0.00032	J	0.00022	0.0050	mg/L	1	10/29/2024 19:57
Lithium	0.012		0.0017	0.010	mg/L	1	10/29/2024 19:57
Magnesium	19		0.037	0.20	mg/L	1	10/29/2024 19:57
Molybdenum	U		0.00033	0.0050	mg/L	1	10/29/2024 19:57
Potassium	3.6		0.034	0.20	mg/L	1	10/29/2024 19:57
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:57
Sodium	62		0.13	0.20	mg/L	1	10/29/2024 19:57
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:57
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	22.1		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	67.9		12	40	mg/L	40	11/12/2024 18:58
Fluoride	0.123		0.067	0.10	mg/L	1	11/8/2024 21:05
Sulfate	301		7.6	40	mg/L	40	11/12/2024 18:58
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	590		37	50	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-20
Sample ID:	SMMS-MW-13S-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 03:24 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA			Method: SW7470A		Prep: SW7470 / 10/29/24	Analyst: HTJ	
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:38
METALS BY ICP-MS			Method: SW6020B		Prep: SW3015A / 10/29/24	Analyst: STP	
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 19:59
Arsenic	0.048		0.00019	0.0050	mg/L	1	10/29/2024 19:59
Barium	0.15		0.00057	0.0050	mg/L	1	10/29/2024 19:59
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 19:59
Boron	0.13		0.015	0.020	mg/L	1	10/29/2024 19:59
Cadmium	0.0022		0.00014	0.0020	mg/L	1	10/29/2024 19:59
Calcium	130		0.22	0.50	mg/L	1	10/29/2024 19:59
Chromium	0.00090	J	0.00061	0.0050	mg/L	1	10/29/2024 19:59
Cobalt	0.0043	J	0.00027	0.0050	mg/L	1	10/29/2024 19:59
Iron	9.0		0.047	0.080	mg/L	1	10/29/2024 19:59
Lead	0.00061	J	0.00022	0.0050	mg/L	1	10/29/2024 19:59
Lithium	0.0088	J	0.0017	0.010	mg/L	1	10/29/2024 19:59
Magnesium	25		0.037	0.20	mg/L	1	10/29/2024 19:59
Molybdenum	0.0032	J	0.00033	0.0050	mg/L	1	10/29/2024 19:59
Potassium	2.3		0.034	0.20	mg/L	1	10/29/2024 19:59
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 19:59
Sodium	57		0.13	0.20	mg/L	1	10/29/2024 19:59
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 19:59
ALKALINITY			Method: A2320 B-11			Analyst: KG	
Alkalinity, Total (as CaCO3)	189		8.4	10	mg/L	1	11/2/2024
ANIONS BY ION CHROMATOGRAPHY			Method: SW9056A			Analyst: QTN	
Chloride	74.2		12	40	mg/L	40	11/12/2024 19:07
Fluoride	U		0.067	0.10	mg/L	1	11/8/2024 21:34
Sulfate	273		7.6	40	mg/L	40	11/12/2024 19:07
TOTAL DISSOLVED SOLIDS			Method: A2540 C-15		Prep: FILTER / 10/31/24	Analyst: LAD	
Total Dissolved Solids	720		37	50	mg/L	1	11/5/2024 13:30
SUBCONTRACTED ANALYSES			Method: SUBCONTRACT			Analyst: GEL	
Subcontracted Analyses	See attached		0		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



Client:	ETEM	Work Order:	24100629
Project:	Sammis 2024 2SA Sampling	Lab ID:	24100629-21
Sample ID:	SMMS-FB-102424	Matrix:	GROUNDWATER
Collection Date:	10/24/2024 03:28 PM		

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
<b>MERCURY BY CVAA</b>							
			Method: <b>SW7470A</b>		Prep: SW7470 / 10/29/24		Analyst: <b>HTJ</b>
Mercury	U		0.00016	0.00020	mg/L	1	10/29/2024 15:40
<b>METALS BY ICP-MS</b>							
			Method: <b>SW6020B</b>		Prep: SW3015A / 10/29/24		Analyst: <b>STP</b>
Antimony	U		0.00042	0.0050	mg/L	1	10/29/2024 20:01
Arsenic	U		0.00019	0.0050	mg/L	1	10/29/2024 20:01
<b>Barium</b>	<b>0.0022</b>	J	<b>0.00057</b>	<b>0.0050</b>	<b>mg/L</b>	1	10/29/2024 20:01
Beryllium	U		0.00013	0.0020	mg/L	1	10/29/2024 20:01
Boron	U		0.015	0.020	mg/L	1	10/29/2024 20:01
Cadmium	U		0.00014	0.0020	mg/L	1	10/29/2024 20:01
Calcium	U		0.22	0.50	mg/L	1	10/29/2024 20:01
Chromium	U		0.00061	0.0050	mg/L	1	10/29/2024 20:01
Cobalt	U		0.00027	0.0050	mg/L	1	10/29/2024 20:01
<b>Iron</b>	<b>0.052</b>	J	<b>0.047</b>	<b>0.080</b>	<b>mg/L</b>	1	10/29/2024 20:01
Lead	U		0.00022	0.0050	mg/L	1	10/29/2024 20:01
Lithium	U		0.0017	0.010	mg/L	1	10/29/2024 20:01
Magnesium	U		0.037	0.20	mg/L	1	10/29/2024 20:01
Molybdenum	U		0.00033	0.0050	mg/L	1	10/29/2024 20:01
Potassium	U		0.034	0.20	mg/L	1	10/29/2024 20:01
Selenium	U		0.00048	0.0050	mg/L	1	10/29/2024 20:01
<b>Sodium</b>	<b>0.18</b>	J	<b>0.13</b>	<b>0.20</b>	<b>mg/L</b>	1	10/30/2024 18:06
Thallium	U		0.00015	0.0050	mg/L	1	10/29/2024 20:01
<b>ALKALINITY</b>							
			Method: <b>A2320 B-11</b>				Analyst: <b>KLB</b>
Alkalinity, Total (as CaCO3)	<b>8.68</b>	J	<b>8.4</b>	<b>10</b>	<b>mg/L</b>	1	11/7/2024
<b>ANIONS BY ION CHROMATOGRAPHY</b>							
			Method: <b>SW9056A</b>				Analyst: <b>QTN</b>
Chloride	U		0.31	1.0	mg/L	1	11/8/2024 21:44
Fluoride	U		0.067	0.10	mg/L	1	11/8/2024 21:44
<b>Sulfate</b>	<b>0.404</b>	J	<b>0.19</b>	<b>1.0</b>	<b>mg/L</b>	1	11/8/2024 21:44
<b>TOTAL DISSOLVED SOLIDS</b>							
			Method: <b>A2540 C-15</b>		Prep: FILTER / 10/31/24		Analyst: <b>LAD</b>
Total Dissolved Solids	U		22	30	mg/L	1	11/5/2024 13:30
<b>SUBCONTRACTED ANALYSES</b>							
			Method: <b>SUBCONTRACT</b>				Analyst: <b>GEL</b>
Subcontracted Analyses	See attached		<b>0</b>		as noted	1	11/20/2024

Note: See Qualifiers page for a list of qualifiers and their definitions.



**Client:** ETEM  
**Project:** Sammis 2024 2SA Sampling  
**WorkOrder:** 24100629

**QUALIFIERS,  
ACRONYMS, UNITS**



<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Analyte accreditation is not offered
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
as noted	
mg/L	Milligrams per Liter



Batch ID: 248455

Instrument ID HG4

Method: SW7470A

MBLK		Sample ID: MBLK-248455-248455					Units: mg/L		Analysis Date: 10/24/2024 03:26 PM			
Client ID:		Run ID: HG4_241024A				SeqNo: 11216804		Prep Date: 10/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	U	0.00016	0.00020									

LCS		Sample ID: LCS-248455-248455					Units: mg/L		Analysis Date: 10/24/2024 03:27 PM			
Client ID:		Run ID: HG4_241024A				SeqNo: 11216805		Prep Date: 10/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.00216	0.00016	0.00020	0.002		0	108	80-120		0		

MS		Sample ID: 24100629-01CMS					Units: mg/L		Analysis Date: 10/24/2024 03:31 PM			
Client ID: SMMS-MW-3-102224		Run ID: HG4_241024A				SeqNo: 11216807		Prep Date: 10/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.002145	0.00016	0.00020	0.002	0.0000735	104	75-125			0		

MSD		Sample ID: 24100629-01CMSD					Units: mg/L		Analysis Date: 10/24/2024 03:38 PM			
Client ID: SMMS-MW-3-102224		Run ID: HG4_241024A				SeqNo: 11216811		Prep Date: 10/24/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Mercury	0.002055	0.00016	0.00020	0.002	0.0000735	99.1	75-125	0.002145	4.29	20		

The following samples were analyzed in this batch:

24100629-01C



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248568 Instrument ID HG4 Method: SW7470A

MBLK		Sample ID: MBLK-248568-248568				Units: mg/L		Analysis Date: 10/29/2024 09:31 A			
Client ID:		Run ID: HG4_241029A				SeqNo: 11224158		Prep Date: 10/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-248568-248568				Units: mg/L		Analysis Date: 10/29/2024 09:33 A			
Client ID:		Run ID: HG4_241029A				SeqNo: 11224159		Prep Date: 10/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.001965	0.00016	0.00020	0.002	0	98.2	80-120	0			

MS		Sample ID: 24100629-02CMS				Units: mg/L		Analysis Date: 10/29/2024 09:37 A			
Client ID: SMMS-MW-2-102324		Run ID: HG4_241029A				SeqNo: 11224161		Prep Date: 10/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002385	0.00016	0.00020	0.002	0.0000075	119	75-125	0			

MSD		Sample ID: 24100629-02CMSD				Units: mg/L		Analysis Date: 10/29/2024 09:38 A			
Client ID: SMMS-MW-2-102324		Run ID: HG4_241029A				SeqNo: 11224162		Prep Date: 10/28/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.0024	0.00016	0.00020	0.002	0.0000075	120	75-125	0.002385	0.627	20	

The following samples were analyzed in this batch:	24100629-02C	24100629-03C	24100629-04C
	24100629-05C	24100629-06C	24100629-07C
	24100629-08C	24100629-09C	24100629-10C
	24100629-11C		



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248602 Instrument ID HG4 Method: SW7470A

MBLK		Sample ID: MBLK-248602-248602				Units: mg/L		Analysis Date: 10/29/2024 03:12 PM			
Client ID:		Run ID: HG4_241029B				SeqNo: 11226008		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	U	0.00016	0.00020								

LCS		Sample ID: LCS-248602-248602				Units: mg/L		Analysis Date: 10/29/2024 03:13 PM			
Client ID:		Run ID: HG4_241029B				SeqNo: 11226009		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00198	0.00016	0.00020	0.002	0	99	80-120	0			

MS		Sample ID: 24100629-12CMS				Units: mg/L		Analysis Date: 10/29/2024 03:17 PM			
Client ID: SMMS-MW-16-102424		Run ID: HG4_241029B				SeqNo: 11226011		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002265	0.00016	0.00020	0.002	-0.0000495	116	75-125	0			

MSD		Sample ID: 24100629-12CMSD				Units: mg/L		Analysis Date: 10/29/2024 03:19 PM			
Client ID: SMMS-MW-16-102424		Run ID: HG4_241029B				SeqNo: 11226012		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.002205	0.00016	0.00020	0.002	-0.0000495	113	75-125	0.002265	2.68	20	

The following samples were analyzed in this batch:	24100629-12C	24100629-13C	24100629-14C
	24100629-15C	24100629-16C	24100629-17C
	24100629-18C	24100629-19C	24100629-20C
	24100629-21C		



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248519 Instrument ID ICPMS3 Method: SW6020B

MBLK		Sample ID: MBLK-248519-248519				Units: mg/L		Analysis Date: 10/27/2024 06:11 PM			
Client ID:		Run ID: ICPMS3_241027A				SeqNo: 11219227		Prep Date: 10/27/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	U	0.00048	0.0050								
Thallium	U	0.00015	0.0050								

MBLK		Sample ID: MBLK-248519-248519				Units: mg/L		Analysis Date: 10/28/2024 03:51 PM			
Client ID:		Run ID: ICPMS3_241028A				SeqNo: 11222319		Prep Date: 10/27/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	U	0.13	0.20								



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248519      Instrument ID ICPMS3      Method: SW6020B

LCS					Sample ID: LCS-248519-248519			Units: mg/L		Analysis Date: 10/27/2024 06:12 PM		
Client ID:			Run ID: ICPMS3_241027A			SeqNo: 11219228		Prep Date: 10/27/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1044	0.00042	0.0050	0.1	0	104	80-120	0				
Arsenic	0.1056	0.00019	0.0050	0.1	0	106	80-120	0				
Barium	0.104	0.00057	0.0050	0.1	0	104	80-120	0				
Beryllium	0.1089	0.00013	0.0020	0.1	0	109	80-120	0				
Boron	0.4757	0.015	0.020	0.5	0	95.1	80-120	0				
Cadmium	0.1053	0.00014	0.0020	0.1	0	105	80-120	0				
Calcium	10.49	0.22	0.50	10	0	105	80-120	0				
Chromium	0.1014	0.00061	0.0050	0.1	0	101	80-120	0				
Cobalt	0.09851	0.00027	0.0050	0.1	0	98.5	80-120	0				
Iron	10.3	0.047	0.080	10	0	103	80-120	0				
Lead	0.1114	0.00022	0.0050	0.1	0	111	80-120	0				
Lithium	0.112	0.0017	0.010	0.1	0	112	80-120	0				
Magnesium	10.62	0.037	0.20	10	0	106	80-120	0				
Molybdenum	0.1026	0.00033	0.0050	0.1	0	103	80-120	0				
Potassium	11.08	0.034	0.20	10	0	111	80-120	0				
Selenium	0.1146	0.00048	0.0050	0.1	0	115	80-120	0				
Sodium	10.31	0.13	0.20	10	0	103	80-120	0				
Thallium	0.1137	0.00015	0.0050	0.1	0	114	80-120	0				

MS					Sample ID: 24100629-11CMS			Units: mg/L		Analysis Date: 10/27/2024 06:45 PM		
Client ID: SMMS-P-2-102324			Run ID: ICPMS3_241027A			SeqNo: 11219247		Prep Date: 10/27/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.09983	0.00042	0.0050	0.1	-0.0001089	99.9	75-125	0				
Arsenic	0.1085	0.00019	0.0050	0.1	0.0001078	108	75-125	0				
Barium	0.1349	0.00057	0.0050	0.1	0.02929	106	75-125	0				
Beryllium	0.1102	0.00013	0.0020	0.1	-0.0000132	110	75-125	0				
Boron	0.5551	0.015	0.020	0.5	0.05767	99.5	75-125	0				
Cadmium	0.1077	0.00014	0.0020	0.1	0.0000187	108	75-125	0				
Calcium	58.58	0.22	0.50	10	47.5	111	75-125	0			O	
Chromium	0.1001	0.00061	0.0050	0.1	0.0002123	99.9	75-125	0				
Cobalt	0.09697	0.00027	0.0050	0.1	0.0006578	96.3	75-125	0				
Iron	10.74	0.047	0.080	10	0.5676	102	75-125	0				
Lead	0.1135	0.00022	0.0050	0.1	0.0000473	113	75-125	0				
Lithium	0.1144	0.0017	0.010	0.1	0.002677	112	75-125	0				
Magnesium	20.34	0.037	0.20	10	10.51	98.3	75-125	0				
Molybdenum	0.1062	0.00033	0.0050	0.1	0.0001595	106	75-125	0				
Potassium	13.37	0.034	0.20	10	2.676	107	75-125	0				
Selenium	0.1105	0.00048	0.0050	0.1	-0.0002046	111	75-125	0				
Sodium	38.5	0.13	0.20	10	30.41	81	75-125	0				
Thallium	0.1161	0.00015	0.0050	0.1	0.000022	116	75-125	0				



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248519      Instrument ID ICPMS3      Method: SW6020B

MSD					Sample ID: 24100629-11CMSD			Units: mg/L		Analysis Date: 10/27/2024 06:47 PM		
Client ID: SMMS-P-2-102324			Run ID: ICPMS3_241027A			SeqNo: 11219248		Prep Date: 10/27/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1019	0.00042	0.0050	0.1	-0.0001089	102	75-125	0.09983	2.05	20		
Arsenic	0.1047	0.00019	0.0050	0.1	0.0001078	105	75-125	0.1085	3.48	20		
Barium	0.1316	0.00057	0.0050	0.1	0.02929	102	75-125	0.1349	2.46	20		
Beryllium	0.1061	0.00013	0.0020	0.1	-0.0000132	106	75-125	0.1102	3.87	20		
Boron	0.5412	0.015	0.020	0.5	0.05767	96.7	75-125	0.5551	2.54	20		
Cadmium	0.1037	0.00014	0.0020	0.1	0.0000187	104	75-125	0.1077	3.73	20		
Calcium	54.74	0.22	0.50	10	47.5	72.4	75-125	58.58	6.78	20	SO	
Chromium	0.09903	0.00061	0.0050	0.1	0.0002123	98.8	75-125	0.1001	1.07	20		
Cobalt	0.0954	0.00027	0.0050	0.1	0.0006578	94.7	75-125	0.09697	1.63	20		
Iron	10.53	0.047	0.080	10	0.5676	99.6	75-125	10.74	1.98	20		
Lead	0.1039	0.00022	0.0050	0.1	0.0000473	104	75-125	0.1135	8.85	20		
Lithium	0.1095	0.0017	0.010	0.1	0.002677	107	75-125	0.1144	4.42	20		
Magnesium	19.81	0.037	0.20	10	10.51	93	75-125	20.34	2.64	20		
Molybdenum	0.1053	0.00033	0.0050	0.1	0.0001595	105	75-125	0.1062	0.879	20		
Potassium	13.1	0.034	0.20	10	2.676	104	75-125	13.37	2.1	20		
Selenium	0.1134	0.00048	0.0050	0.1	-0.0002046	114	75-125	0.1105	2.58	20		
Sodium	37.66	0.13	0.20	10	30.41	72.5	75-125	38.5	2.21	20	S	
Thallium	0.1055	0.00015	0.0050	0.1	0.000022	105	75-125	0.1161	9.55	20		

The following samples were analyzed in this batch:

24100629-01C	24100629-02C	24100629-03C
24100629-04C	24100629-05C	24100629-06C
24100629-07C	24100629-08C	24100629-09C
24100629-10C	24100629-11C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248587      Instrument ID ICPMS3      Method: SW6020B

MBLK		Sample ID: MBLK-248587-248587				Units: mg/L		Analysis Date: 10/29/2024 07:34 PM			
Client ID:		Run ID: ICPMS3_241029A				SeqNo: 11225167		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	U	0.00042	0.0050								
Arsenic	U	0.00019	0.0050								
Barium	U	0.00057	0.0050								
Beryllium	U	0.00013	0.0020								
Boron	U	0.015	0.020								
Cadmium	U	0.00014	0.0020								
Calcium	U	0.22	0.50								
Chromium	U	0.00061	0.0050								
Cobalt	U	0.00027	0.0050								
Iron	U	0.047	0.080								
Lead	U	0.00022	0.0050								
Lithium	U	0.0017	0.010								
Magnesium	U	0.037	0.20								
Molybdenum	U	0.00033	0.0050								
Potassium	U	0.034	0.20								
Selenium	U	0.00048	0.0050								
Sodium	U	0.13	0.20								
Thallium	U	0.00015	0.0050								

LCS		Sample ID: LCS-248587-248587				Units: mg/L		Analysis Date: 10/29/2024 07:36 PM			
Client ID:		Run ID: ICPMS3_241029A				SeqNo: 11225168		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Antimony	0.1013	0.00042	0.0050	0.1	0	101	80-120	0			
Arsenic	0.09676	0.00019	0.0050	0.1	0	96.8	80-120	0			
Barium	0.1008	0.00057	0.0050	0.1	0	101	80-120	0			
Beryllium	0.1011	0.00013	0.0020	0.1	0	101	80-120	0			
Boron	0.5317	0.015	0.020	0.5	0	106	80-120	0			
Cadmium	0.09999	0.00014	0.0020	0.1	0	100	80-120	0			
Calcium	10.18	0.22	0.50	10	0	102	80-120	0			
Chromium	0.1	0.00061	0.0050	0.1	0	100	80-120	0			
Cobalt	0.1014	0.00027	0.0050	0.1	0	101	80-120	0			
Iron	10.1	0.047	0.080	10	0	101	80-120	0			
Lead	0.1024	0.00022	0.0050	0.1	0	102	80-120	0			
Lithium	0.09986	0.0017	0.010	0.1	0	99.9	80-120	0			
Magnesium	10.38	0.037	0.20	10	0	104	80-120	0			
Molybdenum	0.1031	0.00033	0.0050	0.1	0	103	80-120	0			
Potassium	10.1	0.034	0.20	10	0	101	80-120	0			
Selenium	0.09524	0.00048	0.0050	0.1	0	95.2	80-120	0			
Sodium	10.36	0.13	0.20	10	0	104	80-120	0			
Thallium	0.1027	0.00015	0.0050	0.1	0	103	80-120	0			



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248587      Instrument ID ICPMS3      Method: SW6020B

MS					Sample ID: 24100520-01CMS			Units: mg/L		Analysis Date: 10/29/2024 07:39 PM		
Client ID:			Run ID: ICPMS3_241029A			SeqNo: 11225170		Prep Date: 10/29/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1045	0.00042	0.0050	0.1	0.0005434	104	75-125	0				
Arsenic	0.1034	0.00019	0.0050	0.1	0.0006413	103	75-125	0				
Barium	0.1277	0.00057	0.0050	0.1	0.02543	102	75-125	0				
Beryllium	0.1047	0.00013	0.0020	0.1	0.0000891	105	75-125	0				
Boron	0.5864	0.015	0.020	0.5	0.04663	108	75-125	0				
Cadmium	0.1015	0.00014	0.0020	0.1	0.0000242	101	75-125	0				
Calcium	45.54	0.22	0.50	10	36.92	86.3	75-125	0				
Chromium	0.1035	0.00061	0.0050	0.1	0.00182	102	75-125	0				
Cobalt	0.1043	0.00027	0.0050	0.1	0.0003113	104	75-125	0				
Iron	10.51	0.047	0.080	10	0.4939	100	75-125	0				
Lead	0.1044	0.00022	0.0050	0.1	0.0002376	104	75-125	0				
Lithium	0.1063	0.0017	0.010	0.1	0.005658	101	75-125	0				
Magnesium	16.52	0.037	0.20	10	6.452	101	75-125	0				
Molybdenum	0.1089	0.00033	0.0050	0.1	0.002443	106	75-125	0				
Potassium	12.62	0.034	0.20	10	2.703	99.1	75-125	0				
Selenium	0.09625	0.00048	0.0050	0.1	0.0006138	95.6	75-125	0				
Sodium	54.64	0.13	0.20	10	47.19	74.5	75-125	0			SO	
Thallium	0.1055	0.00015	0.0050	0.1	0.0001001	105	75-125	0				

MSD					Sample ID: 24100520-01CMSD			Units: mg/L		Analysis Date: 10/29/2024 07:41 PM		
Client ID:			Run ID: ICPMS3_241029A			SeqNo: 11225171		Prep Date: 10/29/2024		DF: 1		
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Antimony	0.1039	0.00042	0.0050	0.1	0.0005434	103	75-125	0.1045	0.583	20		
Arsenic	0.1015	0.00019	0.0050	0.1	0.0006413	101	75-125	0.1034	1.92	20		
Barium	0.1283	0.00057	0.0050	0.1	0.02543	103	75-125	0.1277	0.457	20		
Beryllium	0.1049	0.00013	0.0020	0.1	0.0000891	105	75-125	0.1047	0.2	20		
Boron	0.5915	0.015	0.020	0.5	0.04663	109	75-125	0.5864	0.862	20		
Cadmium	0.1026	0.00014	0.0020	0.1	0.0000242	103	75-125	0.1015	1.1	20		
Calcium	45.6	0.22	0.50	10	36.92	86.8	75-125	45.54	0.115	20		
Chromium	0.1029	0.00061	0.0050	0.1	0.00182	101	75-125	0.1035	0.558	20		
Cobalt	0.1033	0.00027	0.0050	0.1	0.0003113	103	75-125	0.1043	0.933	20		
Iron	10.49	0.047	0.080	10	0.4939	100	75-125	10.51	0.12	20		
Lead	0.1051	0.00022	0.0050	0.1	0.0002376	105	75-125	0.1044	0.605	20		
Lithium	0.1055	0.0017	0.010	0.1	0.005658	99.8	75-125	0.1063	0.791	20		
Magnesium	16.23	0.037	0.20	10	6.452	97.8	75-125	16.52	1.77	20		
Molybdenum	0.1087	0.00033	0.0050	0.1	0.002443	106	75-125	0.1089	0.225	20		
Potassium	12.55	0.034	0.20	10	2.703	98.5	75-125	12.62	0.532	20		
Selenium	0.09681	0.00048	0.0050	0.1	0.0006138	96.2	75-125	0.09625	0.579	20		
Sodium	54.48	0.13	0.20	10	47.19	72.9	75-125	54.64	0.306	20	SO	
Thallium	0.1057	0.00015	0.0050	0.1	0.0001001	106	75-125	0.1055	0.26	20		



**Client:** ETEM  
**Work Order:** 24100629  
**Project:** Sammis 2024 2SA Sampling

**QC BATCH REPORT**

Batch ID: **248587**      Instrument ID **ICPMS3**      Method: **SW6020B**

The following samples were analyzed in this batch:

24100629-12C	24100629-13C	24100629-14C
24100629-15C	24100629-16C	24100629-17C
24100629-18C	24100629-19C	24100629-20C
24100629-21C		

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248604 Instrument ID TDS Method: A2540 C-15

MBLK		Sample ID: MBLK-248604-248604				Units: mg/L		Analysis Date: 10/31/2024 03:13 PM			
Client ID:		Run ID: TDS_241031A				SeqNo: 11228995		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS		Sample ID: LCS-248604-248604				Units: mg/L		Analysis Date: 10/31/2024 03:13 PM			
Client ID:		Run ID: TDS_241031A				SeqNo: 11228994		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	520	22	30	495	0	105	85-109	0			

DUP		Sample ID: 24100402-02B DUP				Units: mg/L		Analysis Date: 10/31/2024 03:13 PM			
Client ID:		Run ID: TDS_241031A				SeqNo: 11228973		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	676.7	37	50	0	0	0	0-0	666.7	1.49	10	

DUP		Sample ID: 24100629-12A DUP				Units: mg/L		Analysis Date: 10/31/2024 03:13 PM			
Client ID: SMMS-MW-16-102424		Run ID: TDS_241031A				SeqNo: 11228992		Prep Date: 10/29/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	623.3	37	50	0	0	0	0-0	603.3	3.26	10	

The following samples were analyzed in this batch:

24100629-01A	24100629-02A	24100629-03A
24100629-04A	24100629-05A	24100629-06A
24100629-07A	24100629-08A	24100629-09A
24100629-10A	24100629-11A	24100629-12A
24100629-17A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: 248712 Instrument ID TDS Method: A2540 C-15

MBLK		Sample ID: MBLK-248712-248712				Units: mg/L		Analysis Date: 11/5/2024 01:30 PM			
Client ID:		Run ID: TDS_241105A				SeqNo: 11237422		Prep Date: 10/31/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	U	22	30								

LCS		Sample ID: LCS-248712-248712				Units: mg/L		Analysis Date: 11/5/2024 01:30 PM			
Client ID:		Run ID: TDS_241105A				SeqNo: 11237421		Prep Date: 10/31/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	504	22	30	495	0	102	85-109		0		

DUP		Sample ID: 24100629-20A DUP				Units: mg/L		Analysis Date: 11/5/2024 01:30 PM			
Client ID: SMMS-MW-13S-102424		Run ID: TDS_241105A				SeqNo: 11237419		Prep Date: 10/31/2024		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids	723.3	37	50	0	0	0	0-0	723.3	0	10	

The following samples were analyzed in this batch:	24100629-13A	24100629-14A	24100629-15A
	24100629-16A	24100629-18A	24100629-19A
	24100629-20A	24100629-21A	



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R413955B Instrument ID IC3 Method: E300.0

MBLK		Sample ID: MBLK-B-R413955B				Units: mg/L		Analysis Date: 10/29/2024 11:13 PM			
Client ID:		Run ID: IC3_241029A				SeqNo: 11226207		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R413955B				Units: mg/L		Analysis Date: 10/29/2024 11:03 PM			
Client ID:		Run ID: IC3_241029A				SeqNo: 11226206		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.578	0.31	1.0	10	0	95.8	90-110	0			
Fluoride	2.027	0.067	0.10	2	0	101	90-110	0			
Sulfate	9.872	0.19	1.0	10	0	98.7	90-110	0			

MS		Sample ID: 24100629-01A MS				Units: mg/L		Analysis Date: 10/29/2024 11:42 PM			
Client ID: SMMS-MW-3-102224		Run ID: IC3_241029A				SeqNo: 11226216		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	126.8	3.1	10	100	29.67	97.1	88-110	0			
Fluoride	23.55	0.67	1.0	20	0.892	113	86-121	0			
Sulfate	167.1	1.9	10	100	67.56	99.6	90-110	0			

MSD		Sample ID: 24100629-01A MSD				Units: mg/L		Analysis Date: 10/29/2024 11:52 PM			
Client ID: SMMS-MW-3-102224		Run ID: IC3_241029A				SeqNo: 11226217		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	126.4	3.1	10	100	29.67	96.7	88-110	126.8	0.325	15	
Fluoride	23.16	0.67	1.0	20	0.892	111	86-121	23.55	1.67	15	
Sulfate	166.2	1.9	10	100	67.56	98.7	90-110	167.1	0.527	15	

The following samples were analyzed in this batch:	24100629-01A	24100629-02A	24100629-03A
	24100629-04A	24100629-05A	24100629-06A
	24100629-07A	24100629-08A	24100629-09A
	24100629-10A		



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414036 Instrument ID Titrator 1 Method: A2320 B-11

MBLK		Sample ID: MB-R414036-R414036				Units: mg/L		Analysis Date: 10/31/2024 04:00 PM			
Client ID:		Run ID: TITRATOR 1_241031A				SeqNo: 11229575		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	U	8.4	10								

DUP		Sample ID: 24100545-01C DUP				Units: mg/L		Analysis Date: 10/31/2024 04:00 PM			
Client ID:		Run ID: TITRATOR 1_241031A				SeqNo: 11229588		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	96.31	8.4	10	0	0	0	0-0	104.1	7.8	10	

DUP		Sample ID: 24100629-01B DUP				Units: mg/L		Analysis Date: 10/31/2024 04:00 PM			
Client ID: SMMS-MW-3-102224		Run ID: TITRATOR 1_241031A				SeqNo: 11229593		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	115.8	8.4	10	0	0	0	0-0	125.5	8.1	10	

The following samples were analyzed in this batch: 24100629-01B



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414083 Instrument ID Titrator 1 Method: A2320 B-11

MBLK		Sample ID: MB-R414083-R414083				Units: mg/L		Analysis Date: 11/2/2024			
Client ID:		Run ID: TITRATOR 1_241102A				SeqNo: 11231850		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	U	8.4	10								
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	U	8.4	10								
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	U	8.4	10								
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	U	8.4	10								
Alkalinity, Total (as CaCO <sub>3</sub> )	U	8.4	10								

LCS		Sample ID: LCS-R414083-R414083				Units: mg/L		Analysis Date: 11/2/2024			
Client ID:		Run ID: TITRATOR 1_241102A				SeqNo: 11231851		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	849.9	8.4	10	925	0	91.9	90-110	0			
Alkalinity, Total (as CaCO <sub>3</sub> )	916.3	8.4	10	1000	0	91.6	90-110	0			

DUP		Sample ID: 24100446-15B DUP				Units: mg/L		Analysis Date: 11/2/2024			
Client ID:		Run ID: TITRATOR 1_241102A				SeqNo: 11231853		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	2329	8.4	10	0	0	0	0-0	2328	0.0511	10	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Total (as CaCO <sub>3</sub> )	2329	8.4	10	0	0	0	0-0	2329	0	10	

DUP		Sample ID: 24110018-01D DUP				Units: mg/L		Analysis Date: 11/2/2024			
Client ID:		Run ID: TITRATOR 1_241102A				SeqNo: 11231872		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (as CaCO <sub>3</sub> )	335.4	8.4	10	0	0	0	0-0	342.6	2.14	10	
Alkalinity, Carbonate (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Hydroxide (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Phenolphthalein (as CaCO <sub>3</sub> )	U	8.4	10	0	0	0	0-0	0	0	10	
Alkalinity, Total (as CaCO <sub>3</sub> )	335.4	8.4	10	0	0	0	0-0	342.6	2.14	10	

The following samples were analyzed in this batch:	24100629-02B	24100629-03B	24100629-04B
	24100629-05B	24100629-06B	24100629-07B
	24100629-08B	24100629-09B	24100629-10B
	24100629-11B	24100629-12B	24100629-13B
	24100629-14B	24100629-17B	24100629-18B
	24100629-19B	24100629-20B	



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414138B Instrument ID IC3 Method: SW9056A

MBLK		Sample ID: MBLK-A-R414138B				Units: mg/L		Analysis Date: 11/2/2024 04:41 PM			
Client ID:		Run ID: IC3_241102A				SeqNo: 11234913		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-A-R414138B				Units: mg/L		Analysis Date: 11/2/2024 04:32 PM			
Client ID:		Run ID: IC3_241102A				SeqNo: 11234912		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.741	0.31	1.0	10	0	97.4	88-110	0			
Fluoride	1.977	0.067	0.10	2	0	98.8	86-121	0			
Sulfate	10.07	0.19	1.0	10	0	101	90-110	0			

MS		Sample ID: 24100629-02A MS				Units: mg/L		Analysis Date: 11/2/2024 05:20 PM			
Client ID: SMMS-MW-2-102324		Run ID: IC3_241102A				SeqNo: 11234917		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	127.4	3.1	10	100	29.31	98.1	88-110	0			
Fluoride	23.95	0.67	1.0	20	0	120	86-121	0			
Sulfate	171.8	1.9	10	100	70.62	101	90-110	0			

MSD		Sample ID: 24100629-02A MSD				Units: mg/L		Analysis Date: 11/2/2024 05:30 PM			
Client ID: SMMS-MW-2-102324		Run ID: IC3_241102A				SeqNo: 11234918		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	127.5	3.1	10	100	29.31	98.2	88-110	127.4	0.073	15	
Fluoride	24.02	0.67	1.0	20	0	120	86-121	23.95	0.292	15	
Sulfate	171.6	1.9	10	100	70.62	101	90-110	171.8	0.0734	15	

The following samples were analyzed in this batch:	24100629-02A	24100629-03A	24100629-04A
	24100629-05A	24100629-06A	24100629-08A
	24100629-09A	24100629-10A	24100629-11A
	24100629-12A	24100629-13A	24100629-14A
	24100629-15A	24100629-16A	24100629-17A
	24100629-18A		



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414308A Instrument ID IC3 Method: SW9056A

MBLK		Sample ID: MBLK-A-R414308A				Units: mg/L		Analysis Date: 11/5/2024 11:28 AM			
Client ID:		Run ID: IC3_241105A				SeqNo: 11240400		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-A-R414308A				Units: mg/L		Analysis Date: 11/5/2024 11:19 AM			
Client ID:		Run ID: IC3_241105A				SeqNo: 11240399		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.761	0.31	1.0	10	0	97.6	88-110	0			
Sulfate	10.17	0.19	1.0	10	0	102	90-110	0			

MS		Sample ID: 24100629-11A MS				Units: mg/L		Analysis Date: 11/5/2024 07:31 PM			
Client ID: SMMS-P-2-102324		Run ID: IC3_241105A				SeqNo: 11240404		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	133.8	3.1	10	100	35.9	97.9	88-110	0			
Sulfate	179	1.9	10	100	80.1	98.8	90-110	0			

MSD		Sample ID: 24100629-11A MSD				Units: mg/L		Analysis Date: 11/5/2024 07:41 PM			
Client ID: SMMS-P-2-102324		Run ID: IC3_241105A				SeqNo: 11240405		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	134.1	3.1	10	100	35.9	98.2	88-110	133.8	0.271	15	
Sulfate	180.5	1.9	10	100	80.1	100	90-110	179	0.835	15	

The following samples were analyzed in this batch:	24100629-11A	24100629-12A	24100629-13A
	24100629-14A	24100629-15A	24100629-16A
	24100629-17A	24100629-18A	24100629-19A
	24100629-20A	24100629-21A	



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414377 Instrument ID Titrator 1 Method: A2320 B-11

MBLK		Sample ID: MB-R414377-R414377				Units: mg/L			Analysis Date: 11/7/2024		
Client ID:		Run ID: TITRATOR 1_241107A				SeqNo: 11243489			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	U	8.4	10								

LCS		Sample ID: LCS-R414377-R414377				Units: mg/L			Analysis Date: 11/7/2024		
Client ID:		Run ID: TITRATOR 1_241107A				SeqNo: 11243490			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	974.5	8.4	10	1000	0	97.4	90-110	0			

DUP		Sample ID: 24100629-15B DUP				Units: mg/L			Analysis Date: 11/7/2024		
Client ID: SMMS-MW-10D-102424		Run ID: TITRATOR 1_241107A				SeqNo: 11243492			Prep Date:		DF: 1
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (as CaCO3)	161.6	8.4	10	0	0	0	0-0	157.6	2.54	10	

The following samples were analyzed in this batch:

24100629-15B	24100629-16B	24100629-18B
24100629-21B		



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414484B      Instrument ID IC3      Method: E300.0

MBLK		Sample ID: MBLK-B-R414484B				Units: mg/L		Analysis Date: 11/8/2024 07:28 PM			
Client ID:		Run ID: IC3_241108A				SeqNo: 11247883		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Fluoride	U	0.067	0.10								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-B-R414484B				Units: mg/L		Analysis Date: 11/8/2024 07:18 PM			
Client ID:		Run ID: IC3_241108A				SeqNo: 11247882		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.851	0.31	1.0	10	0	98.5	90-110	0			
Fluoride	1.974	0.067	0.10	2	0	98.7	90-110	0			
Sulfate	10.49	0.19	1.0	10	0	105	90-110	0			

MS		Sample ID: 24100629-17A MS				Units: mg/L		Analysis Date: 11/8/2024 08:26 PM			
Client ID: SMMS-MW-14S-102424		Run ID: IC3_241108A				SeqNo: 11247889		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	148.6	3.1	10	100	48.66	99.9	88-110	0			
Fluoride	21.75	0.67	1.0	20	0	109	86-121	0			
Sulfate	204.3	1.9	10	100	101.8	103	90-110	0			E

MSD		Sample ID: 24100629-17A MSD				Units: mg/L		Analysis Date: 11/8/2024 08:36 PM			
Client ID: SMMS-MW-14S-102424		Run ID: IC3_241108A				SeqNo: 11247890		Prep Date:		DF: 10	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	148.5	3.1	10	100	48.66	99.9	88-110	148.6	0.0155	15	
Fluoride	21.73	0.67	1.0	20	0	109	86-121	21.75	0.0874	15	
Sulfate	203	1.9	10	100	101.8	101	90-110	204.3	0.65	15	E

The following samples were analyzed in this batch:	24100629-13A	24100629-17A	24100629-18A
	24100629-19A	24100629-20A	24100629-21A



Client: ETEM  
Work Order: 24100629  
Project: Sammis 2024 2SA Sampling

QC BATCH REPORT

Batch ID: R414632A Instrument ID IC3 Method: E300.0

MBLK		Sample ID: MBLK-A-R414632A				Units: mg/L		Analysis Date: 11/12/2024 11:34 A			
Client ID:		Run ID: IC3_241112A				SeqNo: 11253713		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	0.31	1.0								
Sulfate	U	0.19	1.0								

LCS		Sample ID: LCS-A-R414632A				Units: mg/L		Analysis Date: 11/12/2024 11:24 A			
Client ID:		Run ID: IC3_241112A				SeqNo: 11253712		Prep Date:		DF: 1	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	9.615	0.31	1.0	10	0	96.2	90-110	0			
Sulfate	9.997	0.19	1.0	10	0	100	90-110	0			

MS		Sample ID: 24110114-03C MS				Units: mg/L		Analysis Date: 11/12/2024 04:31 PM			
Client ID:		Run ID: IC3_241112A				SeqNo: 11253717		Prep Date:		DF: 400	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	4124	120	400	4000	333.6	94.8	90-110	0			
Sulfate	7796	76	400	4000	3676	103	90-110	0			

MS		Sample ID: 24100629-20A MS				Units: mg/L		Analysis Date: 11/12/2024 07:17 PM			
Client ID: SMMS-MW-13S-102424		Run ID: IC3_241112A				SeqNo: 11253738		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	458.5	12	40	400	74.2	96.1	88-110	0			
Sulfate	675.5	7.6	40	400	272.6	101	90-110	0			

MSD		Sample ID: 24110114-03C MSD				Units: mg/L		Analysis Date: 11/12/2024 04:40 PM			
Client ID:		Run ID: IC3_241112A				SeqNo: 11253718		Prep Date:		DF: 400	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	4119	120	400	4000	333.6	94.6	90-110	4124	0.129	10	
Sulfate	7732	76	400	4000	3676	101	90-110	7796	0.827	10	

MSD		Sample ID: 24100629-20A MSD				Units: mg/L		Analysis Date: 11/12/2024 07:27 PM			
Client ID: SMMS-MW-13S-102424		Run ID: IC3_241112A				SeqNo: 11253739		Prep Date:		DF: 40	
Analyte	Result	MDL	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	461.6	12	40	400	74.2	96.8	88-110	458.5	0.671	15	
Sulfate	681.1	7.6	40	400	272.6	102	90-110	675.5	0.829	15	

The following samples were analyzed in this batch: 24100629-19A 24100629-20A



December 18, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 692557

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 29, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,



Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24100629  
Chain of Custody: 27218  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 692557 GEL Work Order: 692557

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: December 18, 2024

Client Sample ID: SMMS-MW-3-102224  
Sample ID: 692557001  
Matrix: Ground Water  
Collect Date: 22-OCT-24  
Receive Date: 29-OCT-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.825	+/-1.58	2.80	+/-1.60	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.851	+/-0.402	0.343	+/-0.433	1.00	pCi/L			MJ2	11/08/24	0956	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	81.8	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-2-102324

Sample ID: 692557002

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		3.39	+/-1.82	2.70	+/-2.02	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.614	+/-0.344	0.336	+/-0.368	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	72.3	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-1-102324

Project: ALSE00923

Sample ID: 692557003

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.449	+/-1.46	2.62	+/-1.46	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.676	+/-0.492	0.728	+/-0.508	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	83.4	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-15-102324

Project: ALSE00923

Sample ID: 692557004

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	3.50	+/-2.32	3.59	+/-2.49	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.154	+/-0.224	0.392	+/-0.226	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	78.8	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-9-102324

Project: ALSE00923

Sample ID: 692557005

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	2.79	+/-2.24	3.57	+/-2.35	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.790	+/-0.385	0.336	+/-0.422	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	76	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-99A-102324

Sample ID: 692557006

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		4.49	+/-1.51	1.85	+/-1.89	3.00	pCi/L			KP1	11/08/24	1052	2699326	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		1.48	+/-1.03	1.36	+/-1.05	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2699326	76.6	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-FB-01-102324

Sample ID: 692557007

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.60	+/-1.23	1.89	+/-1.30	3.00	pCi/L			KP1	11/08/24	1052	2699326	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.244	+/-0.356	0.622	+/-0.361	1.00	pCi/L			MJ2	11/14/24	1041	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2699326	59.7	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-4-102324

Project: ALSE00923

Sample ID: 692557008

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.436	+/-1.53	2.79	+/-1.53	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		1.24	+/-0.470	0.461	+/-0.556	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	83.9	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-5-102324

Sample ID: 692557009

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.67	+/-1.76	2.93	+/-1.81	3.00	pCi/L			KP1	11/18/24	1149	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.970	+/-0.395	0.297	+/-0.437	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	87.6	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-6-102324

Sample ID: 692557010

Matrix: Ground Water

Collect Date: 23-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	2.35	+/-1.83	2.88	+/-1.93	3.00	pCi/L			KP1	11/18/24	1150	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.0792	+/-0.219	0.438	+/-0.220	1.00	pCi/L			MJ2	11/08/24	1030	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	82	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: December 18, 2024

Client Sample ID: SMMS-P-2-102324  
Sample ID: 692557011  
Matrix: Ground Water  
Collect Date: 23-OCT-24  
Receive Date: 29-OCT-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.431	+/-1.61	2.98	+/-1.62	3.00	pCi/L			KP1	11/18/24	1150	2705224	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.447	+/-0.382	0.585	+/-0.389	1.00	pCi/L			MJ2	11/08/24	1104	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2705224	77.2	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: December 18, 2024

Page 1 of 3

Client : ALS Group USA, Corp  
3352 128th Ave

Holland, Michigan

Contact: Jodi Blouw

Workorder: 692557

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	2699326										
QC1205907565	692557007	DUP									
Radium-228		U	1.60	U	0.914	pCi/L	0		N/A	KP1	11/08/2410:52
		Uncert:	+/-1.23		+/-1.29						
		TPU:	+/-1.30		+/-1.31						
QC1205907566	LCS										
Radium-228		81.1			92.9	pCi/L		115	(75%-125%)	KP1	11/08/2410:52
		Uncert:			+/-5.17						
		TPU:			+/-24.4						
QC1205907564	MB										
Radium-228			U		1.76	pCi/L				KP1	11/08/2410:52
		Uncert:			+/-1.22						
		TPU:			+/-1.30						
Batch	2705224										
QC1205918665	692557002	DUP									
Radium-228			3.39	U	2.23	pCi/L	41.2		(0% - 100%)	KP1	11/18/2411:49
		Uncert:	+/-1.82		+/-1.72						
		TPU:	+/-2.02		+/-1.81						
QC1205918666	LCS										
Radium-228		81.7			80.9	pCi/L		99	(75%-125%)	KP1	11/18/2411:49
		Uncert:			+/-5.51						
		TPU:			+/-21.6						
QC1205918664	MB										
Radium-228			U		1.23	pCi/L				KP1	11/18/2411:49
		Uncert:			+/-1.51						
		TPU:			+/-1.54						
<b>Rad Ra-226</b>											
Batch	2697722										
QC1205904705	692557001	DUP									
Radium-226			0.851		0.930	pCi/L	8.81		(0% - 100%)	MJ2	11/08/2411:42
		Uncert:	+/-0.402		+/-0.469						
		TPU:	+/-0.433		+/-0.517						
QC1205904707	LCS										
Radium-226		27.2			25.4	pCi/L		93.4	(75%-125%)	MJ2	11/08/2411:42
		Uncert:			+/-1.93						
		TPU:			+/-6.00						
QC1205904704	MB										
Radium-226			U		0.299	pCi/L				MJ2	11/08/2411:42
		Uncert:			+/-0.365						
		TPU:			+/-0.369						
QC1205904706	692557001	MS									
Radium-226		136	0.851		128	pCi/L		93.6	(75%-125%)	MJ2	11/08/2411:42



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 692557

Page 2 of 3

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Ra-226											
Batch	2697722										
		Uncert:	+/-0.402	+/-11.6							
		TPU:	+/-0.433	+/-23.3							
Batch	2697726										
QC1205904717	692079001	DUP									
Radium-226		U	0.161	0.530	pCi/L	107*		(0% - 100%)	MJ2	11/14/24	11:13
		Uncert:	+/-0.409	+/-0.348							
		TPU:	+/-0.409	+/-0.361							
QC1205904719	LCS										
Radium-226		27.1		27.3	pCi/L		101	(75%-125%)	MJ2	11/14/24	11:44
		Uncert:		+/-2.74							
		TPU:		+/-5.00							
QC1205904716	MB										
Radium-226			U	0.000	pCi/L				MJ2	11/14/24	11:13
		Uncert:		+/-0.276							
		TPU:		+/-0.276							
QC1205904718	692079001	MS									
Radium-226		138	U	0.161	122	pCi/L		88.7	(75%-125%)	MJ2	11/14/24
		Uncert:		+/-0.409	+/-13.8						
		TPU:		+/-0.409	+/-23.2						

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported
- UI Gamma Spectroscopy--Uncertain identification
- BD Results are either below the MDC or tracer recovery is low
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit
- M M if above MDC and less than LLD
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- FA Failed analysis.
- UJ Gamma Spectroscopy--Uncertain identification
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- UL Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.



# GEL LABORATORIES LLC

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## QC Summary

Workorder: 692557

Page 3 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
x	Subaliquot was taken. See Case Narrative for details.									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



**Subcontractor:**

GEL Laboratories, LLC

2040 Savage Rd

Charleston, SC 29407

TEL: (843) 556-8171

FAX: (843) 766-1178

Acct #:

Salesperson

ALSHN Account

# 092557

## CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: **28-Oct-24**COC ID: **27218**Due Date: **21-Nov-24**

Customer Information		Project Information		Parameter/Method Request for Analysis												
Purchase Order	24100629	Project Name	24100629	A	Radium 226 and 228											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D												
Address	3352 128th Ave	Address	3352 128th Ave	E												
				F												
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J												

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24100629-01D	SMMS-MW-3-102224	Groundwater	22/Oct/2024 13:00	(2) 1LPHNO3	X									
24100629-02D	SMMS-MW-2-102324	Groundwater	23/Oct/2024 11:45	(2) 1LPHNO3	X									
24100629-03D	SMMS-MW-1-102324	Groundwater	23/Oct/2024 12:50	(2) 1LPHNO3	X									
24100629-04D	SMMS-MW-15-102324	Groundwater	23/Oct/2024 14:00	(2) 1LPHNO3	X									
24100629-05D	SMMS-MW-9-102324	Groundwater	23/Oct/2024 15:30	(2) 1LPHNO3	X									
24100629-06D	SMMS-MW-99A-102324	Groundwater	23/Oct/2024 12:00	(2) 1LPHNO3	X									
24100629-07D	SMMS-MW-FB-01-102324	Groundwater	23/Oct/2024 15:30	(2) 1LPHNO3	X									
24100629-08D	SMMS-MW-4-102324	Groundwater	23/Oct/2024 10:41	(2) 1LPHNO3	X									
24100629-09D	SMMS-MW-5-102324	Groundwater	23/Oct/2024 12:11	(2) 1LPHNO3	X									
24100629-10D	SMMS-MW-6-102324	Groundwater	23/Oct/2024 13:37	(2) 1LPHNO3	X									
24100629-11D	SMMS-P-2-102324	Groundwater	23/Oct/2024 15:18	(2) 1LPHNO3	X									

**Comments:**

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs:

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>092557</b>	
Received By: <b>EG</b>		Date Received: <b>10/29/24</b>	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		<b>6536 1075 2151</b> <b>6536 1075 2173</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> <u>6</u> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria		Yes <input type="checkbox"/> NA <input type="checkbox"/> No <input type="checkbox"/>	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	Preservation Method: Wet Ice Ice Packs Dry ice <u>6</u> None Other: _____ *all temperatures are recorded in Celsius <span style="float:right">TEMP: <u>19</u></span>
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	Temperature Device Serial #: <u>IR4-24</u> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container <u>Leaking container</u> Other (describe) <b>99A-102324 1 container received empty</b>
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: _____ If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8	Samples received within holding time?	<input checked="" type="checkbox"/>	ID's and tests affected: _____
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	ID's and containers affected: _____
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) <b>FB-102424 container hrs 1528</b>
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed): <b>6536 1075 2162</b> <b>6536 1075 2140</b>			

PM (or PMA) review: Initials AM Date 11/5/24 Page 1 of 1



**List of current GEL Certifications as of 18 December 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	NV-C24-00175
New Hampshire NELAP	205424
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-44
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 692557**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2699326

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692557006	SMMS-MW-99A-102324
692557007	SMMS-FB-01-102324
1205907564	Method Blank (MB)
1205907565	692557007(SMMS-FB-01-102324) Sample Duplicate (DUP)
1205907566	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2705224

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692557001	SMMS-MW-3-102224
692557002	SMMS-MW-2-102324
692557003	SMMS-MW-1-102324
692557004	SMMS-MW-15-102324
692557005	SMMS-MW-9-102324
692557008	SMMS-MW-4-102324
692557009	SMMS-MW-5-102324
692557010	SMMS-MW-6-102324
692557011	SMMS-P-2-102324
1205918664	Method Blank (MB)
1205918665	692557002(SMMS-MW-2-102324) Sample Duplicate (DUP)
1205918666	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.



**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Preparation Information****Aliquot Reduced**

692557001 (SMMS-MW-3-102224), 692557004 (SMMS-MW-15-102324), 692557005 (SMMS-MW-9-102324), 692557008 (SMMS-MW-4-102324), 692557009 (SMMS-MW-5-102324), 692557010 (SMMS-MW-6-102324) and 692557011 (SMMS-P-2-102324) Aliquots were reduced due to limited sample volume.

**Homogenous Matrix**

Samples were tinted and hazy 1205918665 (SMMS-MW-2-102324DUP) and 692557002 (SMMS-MW-2-102324).

**Quality Control (QC) Information****RDL Met**

Samples did not meet the detection limits due to the small sample aliquots used. The aliquots were reduced due to the matrix of the samples.

Sample	Analyte	Value
692557004 (SMMS-MW-15-102324)	Radium-228	Result 3.5 < MDA 3.59 > RDL 3 pCi/L
692557005 (SMMS-MW-9-102324)	Radium-228	Result 2.79 < MDA 3.57 > RDL 3 pCi/L

**Technical Information****Sample Re-prep/Re-analysis**

Samples were re-prepped due to low recovery. The re-analysis is being reported.

**Product: Lucas Cell, Ra226, Liquid**

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2697722

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692557001	SMMS-MW-3-102224
692557002	SMMS-MW-2-102324
692557003	SMMS-MW-1-102324
692557004	SMMS-MW-15-102324
692557005	SMMS-MW-9-102324
692557006	SMMS-MW-99A-102324
692557008	SMMS-MW-4-102324
692557009	SMMS-MW-5-102324
692557010	SMMS-MW-6-102324
692557011	SMMS-P-2-102324
1205904704	Method Blank (MB)
1205904705	692557001(SMMS-MW-3-102224) Sample Duplicate (DUP)



1205904706 692557001(SMMS-MW-3-102224) Matrix Spike (MS)  
1205904707 Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information**

**Additional Comments**

The matrix spike, 1205904706 (SMMS-MW-3-102224MS), aliquot was reduced to conserve sample volume.

**Product: Lucas Cell, Ra226, Liquid**

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2697726

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692557007	SMMS-FB-01-102324
1205904716	Method Blank (MB)
1205904717	692079001(NonSDG) Sample Duplicate (DUP)
1205904718	692079001(NonSDG) Matrix Spike (MS)
1205904719	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**Duplication Criteria between QC Sample and Duplicate Sample**

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1205904717 (Non SDG 692079001DUP)	Radium-226	RPD 107* (0.0%-100.0%) RER 1.32 (0-3)

**Miscellaneous Information**

**Additional Comments**

The matrix spike, 1205904718 (Non SDG 692079001MS), aliquot was reduced to conserve sample volume.



**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.



December 18, 2024

Jodi Blouw  
ALS Group USA, Corp  
3352 128th Ave  
Holland, Michigan 49424

Re: Holland - Blouw L2  
Work Order: 692599

Dear Jodi Blouw:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 29, 2024. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at [www.gel.com](http://www.gel.com).

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4422.

Sincerely,



Adrian Melendrez for  
Jacob Crook  
Project Manager

Purchase Order: 20-24100629  
Chain of Custody: 27223  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

### Certificate of Analysis Report for

ALSE001 ALS Environmental

Client SDG: 692599 GEL Work Order: 692599

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by





# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Report Date: December 18, 2024

Client Sample ID: SMMS-MW-16-102424  
Sample ID: 692599001  
Matrix: Ground Water  
Collect Date: 24-OCT-24  
Receive Date: 29-OCT-24  
Collector: Client

Project: ALSE00923  
Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		1.44	+/-0.969	1.44	+/-1.04	3.00	pCi/L			KP1	11/06/24	0903	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		2.21	+/-0.600	0.461	+/-0.784	1.00	pCi/L			MJ2	11/08/24	1104	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	77	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

*Column headers are defined as follows:*

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-13BR-102424

Sample ID: 692599002

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		3.16	+/-1.69	2.57	+/-1.87	3.00	pCi/L			KP1	11/06/24	0905	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		0.606	+/-0.363	0.447	+/-0.375	1.00	pCi/L			MJ2	11/08/24	1104	2697722	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	79.3	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-11S-102424

Project: ALSE00923

Sample ID: 692599003

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		2.86	+/-1.38	1.87	+/-1.56	3.00	pCi/L			KP1	11/06/24	1109	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.159	+/-0.246	0.439	+/-0.247	1.00	pCi/L			MJ2	11/14/24	1041	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	82.2	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-10D-102424

Project: ALSE00923

Sample ID: 692599004

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		3.30	+/-1.68	2.51	+/-1.88	3.00	pCi/L			KP1	11/06/24	0905	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.184	+/-0.338	0.617	+/-0.339	1.00	pCi/L			MJ2	11/14/24	1041	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	77.8	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-99B-102424

Sample ID: 692599005

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.21	+/-1.48	2.50	+/-1.51	3.00	pCi/L			KP1	11/06/24	0905	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.164	+/-0.228	0.394	+/-0.230	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	81.3	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-14S-102424

Project: ALSE00923

Sample ID: 692599006

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		3.29	+/-1.81	2.78	+/-2.00	3.00	pCi/L			KP1	11/06/24	0903	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.400	+/-0.418	0.681	+/-0.425	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	77.4	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-P-1-102424

Sample ID: 692599007

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		3.00	+/-1.51	2.20	+/-1.69	3.00	pCi/L			KP1	11/06/24	0903	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	-0.0494	+/-0.216	0.546	+/-0.217	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	72.9	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-11D-102424

Sample ID: 692599008

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		2.53	+/-1.34	1.91	+/-1.49	3.00	pCi/L			KP1	11/06/24	0904	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.300	+/-0.275	0.414	+/-0.283	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	68.1	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Report Date: December 18, 2024

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-MW-13S-102424

Project: ALSE00923

Sample ID: 692599009

Client ID: ALSE001

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		2.90	+/-1.31	1.79	+/-1.50	3.00	pCi/L			KP1	11/06/24	0904	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.172	+/-0.291	0.528	+/-0.293	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	76.2	(15%-125%)

### Notes:

The MDC is a sample specific MDC.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty



# GEL LABORATORIES LLC

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## Certificate of Analysis

Company : ALS Group USA, Corp  
Address : 3352 128th Ave

Holland, Michigan 49424

Contact: Jodi Blouw

Project: Holland - Blouw L2

Client Sample ID: SMMS-FB-102424

Sample ID: 692599010

Matrix: Ground Water

Collect Date: 24-OCT-24

Receive Date: 29-OCT-24

Collector: Client

Report Date: December 18, 2024

Project: ALSE00923

Client ID: ALSE001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		2.73	+/-1.54	2.34	+/-1.69	3.00	pCi/L			KP1	11/06/24	0904	2697769	1
<b>Rad Radium-226</b>														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.0762	+/-0.149	0.291	+/-0.150	1.00	pCi/L			MJ2	11/14/24	1113	2697726	2

### The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2697769	77	(15%-125%)

**Notes:**  
The MDC is a sample specific MDC.  
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: December 18, 2024

Page 1 of 3

Client : ALS Group USA, Corp  
3352 128th Ave

Holland, Michigan

Contact: Jodi Blouw

Workorder: 692599

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	2697769										
QC1205904839	692599001	DUP									
Radium-228		1.44	U	1.51	pCi/L	5.03			N/A	KP1	11/06/2409:03
		Uncert:		+/-1.11							
		TPU:		+/-1.17							
QC1205904840	LCS										
Radium-228	80.9			73.1	pCi/L		90.3	(75%-125%)	KP1		11/06/2409:02
		Uncert:		+/-4.59							
		TPU:		+/-19.2							
QC1205904838	MB										
Radium-228			U	1.32	pCi/L				KP1		11/06/2411:10
		Uncert:		+/-1.06							
		TPU:		+/-1.11							
<b>Rad Ra-226</b>											
Batch	2697722										
QC1205904705	692557001	DUP									
Radium-226		0.851		0.930	pCi/L	8.81		(0% - 100%)	MJ2		11/08/2411:42
		Uncert:		+/-0.469							
		TPU:		+/-0.517							
QC1205904707	LCS										
Radium-226	27.2			25.4	pCi/L		93.4	(75%-125%)	MJ2		11/08/2411:42
		Uncert:		+/-1.93							
		TPU:		+/-6.00							
QC1205904704	MB										
Radium-226			U	0.299	pCi/L				MJ2		11/08/2411:42
		Uncert:		+/-0.365							
		TPU:		+/-0.369							
QC1205904706	692557001	MS									
Radium-226	136	0.851		128	pCi/L		93.6	(75%-125%)	MJ2		11/08/2411:42
		Uncert:		+/-11.6							
		TPU:		+/-23.3							
Batch	2697726										
QC1205904717	692079001	DUP									
Radium-226			U	0.161	pCi/L	107*		(0% - 100%)	MJ2		11/14/2411:13
		Uncert:		+/-0.348							
		TPU:		+/-0.361							
QC1205904719	LCS										
Radium-226	27.1			27.3	pCi/L		101	(75%-125%)	MJ2		11/14/2411:44
		Uncert:		+/-2.74							
		TPU:		+/-5.00							
QC1205904716	MB										
Radium-226			U	0.000	pCi/L				MJ2		11/14/2411:13



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 692599

Page 2 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Ra-226										
Batch	2697726									
		Uncert:	+/-0.276							
		TPU:	+/-0.276							
QC1205904718 692079001 MS										
Radium-226	138 U	0.161	122	pCi/L		88.7	(75%-125%)	MJ2	11/14/24	11:44
		Uncert:	+/-0.409							
		TPU:	+/-0.409							

### Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
J	Value is estimated
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
H	Analytical holding time was exceeded
<	Result is less than value reported
>	Result is greater than value reported
UI	Gamma Spectroscopy--Uncertain identification
BD	Results are either below the MDC or tracer recovery is low
h	Preparation or preservation holding time was exceeded
R	Sample results are rejected
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
N/A	RPD or %Recovery limits do not apply.
ND	Analyte concentration is not detected above the detection limit
M	M if above MDC and less than LLD
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
FA	Failed analysis.
UJ	Gamma Spectroscopy--Uncertain identification
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N1	See case narrative
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.
**	Analyte is a Tracer compound
M	REMP Result > MDC/CL and < RDL
x	Subaliquot was taken. See Case Narrative for details.



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 692599

Page 3 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
----------	-----	-------------	----	-------	------	------	-------	-------	------	------

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

\*\* Indicates analyte is a surrogate/tracer compound.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.





**Subcontractor:**  
 GEL Laboratories, LLC  
 2040 Savage Rd  
 Charleston, SC 29407

TEL: (843) 556-8171  
 FAX: (843) 766-1178  
 Acct #:

Salesperson: **ALSHN Account**

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: **28-Oct-24**  
 COC ID: **27223**  
 Due Date: **21-Nov-24**

Customer Information		Project Information		Parameter/Method Request for Analysis											
Purchase Order	24100629	Project Name	24100629	A Radium 226 and 228											
Work Order		Project Number		B											
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C											
Send Report To	Jodi Blouw	Inv Attn	Accounts Payable	D											
Address	3352 128th Ave	Address	3352 128th Ave	E											
				F											
City/State/Zip	Holland, Michigan 49424	City/State/Zip	Holland, Michigan 49424	G											
Phone	(616) 399-6070	Phone	(616) 399-6070	H											
Fax	(616) 399-6185	Fax	(616) 399-6185	I											
eMail Address	jodi.blouw@alsglobal.com	eMail CC		J											

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
24100629-12D	SMMS-MW-16-102424	Groundwater	24/Oct/2024 10:27	(2) 1LPHNO3	X									
24100629-13D	SMMS-MW-13BR-102424	Groundwater	24/Oct/2024 12:31	(2) 1LPHNO3	X									
24100629-14D	SMMS-MW-11S-102424	Groundwater	24/Oct/2024 15:00	(2) 1LPHNO3	X									
24100629-15D	SMMS-MW-10D-102424	Groundwater	24/Oct/2024 16:35	(2) 1LPHNO3	X									
24100629-16D	SMMS-MW-998-102424	Groundwater	24/Oct/2024 16:57	(2) 1LPHNO3	X									
24100629-17D	SMMS-MW-14S-102424	Groundwater	24/Oct/2024 10:15	(2) 1LPHNO3	X									
24100629-18D	SMMS-P-1-102424	Groundwater	24/Oct/2024 11:21	(2) 1LPHNO3	X									
24100629-19D	SMMS-MW-11D-102424	Groundwater	24/Oct/2024 12:38	(2) 1LPHNO3	X									
24100629-20D	SMMS-MW-13S-102424	Groundwater	24/Oct/2024 15:24	(2) 1LPHNO3	X									
24100629-21D	SMMS-FB-102424	Groundwater	24/Oct/2024 15:24	(2) 1LPHNO3	X									

## Comments:

Please analyze enclosed samples for Radium 226 and Radium 228. Thank you.

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Std

Relinquished by:

Date/Time

Received by:

Date/Time



**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>ALSE</b>		SDG/AR/COC/Work Order: <b>692599</b>	
Received By: <b>EG</b>		Date Received: <b>10/29/24</b>	
Carrier and Tracking Number		Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other	
		<b>6536 1075 2151</b> <b>6536 1075 2173</b>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
A) Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ___ No ___	
B) Did the client designate the samples are to be received as radioactive?	<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.	
C) Did the RSO classify the samples as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>0</b> <b>6</b> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
D) Did the client designate samples are hazardous?	<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.	
E) Did the RSO identify possible hazards?	<input checked="" type="checkbox"/>	If D or E is yes, select Hazards below. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria		Yes <input type="checkbox"/> NA <input type="checkbox"/> No <input type="checkbox"/>	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ deg. C)?*	<input checked="" type="checkbox"/>	Preservation Method: Wet Ice Ice Packs Dry ice <b>6</b> None Other: _____ *all temperatures are recorded in Celsius TEMP: <b>19</b>
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	Temperature Device Serial #: <b>IR4-24</b> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	Circle Applicable: Seals broken Damaged container <b>Leaking container</b> Other (describe) <b>99A-102324 1 container received empty</b>
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	Sample ID's and Containers Affected: _____ If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes ___ No ___ NA ___ (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ___ No ___ NA ___ (If unknown, select No) Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8	Samples received within holding time?	<input checked="" type="checkbox"/>	ID's and tests affected: _____
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	ID's and containers affected: _____
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	Circle Applicable: No dates on containers No times on containers COC missing info Other (describe) <b>FB-102424 container has 1528</b>
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)
Comments (Use Continuation Form if needed):  <b>6536 1075 2162</b> <b>6536 1075 2140</b>			

PM (or PMA) review: Initials **AM** Date **11/5/24** Page **1** of **1**



**List of current GEL Certifications as of 18 December 2024**

<b>State</b>	<b>Certification</b>
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	NV-C24-00175
New Hampshire NELAP	205424
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	2023-152
Pennsylvania NELAP	68-00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235
Utah NELAP	SC000122024-44
Vermont	VT87156
Virginia NELAP	460202
Washington	C780



**Radiochemistry  
Technical Case Narrative  
ALS Environmental  
SDG #: 692599**

**Product:** GFPC Ra228, Liquid

**Analytical Method:** EPA 904.0/SW846 9320 Modified

**Analytical Procedure:** GL-RAD-A-063 REV# 5

**Analytical Batch:** 2697769

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692599001	SMMS-MW-16-102424
692599002	SMMS-MW-13BR-102424
692599003	SMMS-MW-11S-102424
692599004	SMMS-MW-10D-102424
692599005	SMMS-MW-99B-102424
692599006	SMMS-MW-14S-102424
692599007	SMMS-P-1-102424
692599008	SMMS-MW-11D-102424
692599009	SMMS-MW-13S-102424
692599010	SMMS-FB-102424
1205904838	Method Blank (MB)
1205904839	692599001(SMMS-MW-16-102424) Sample Duplicate (DUP)
1205904840	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information**

**RDL Met**

The blank (See Below) did not meet the detection limit due to keeping the blank volume consistent with the other sample aliquots.

Sample	Analyte	Value
1205904838 (MB)	Radium-228	Result 1.32 < MDA 1.72 > RDL 1 pCi/L

**Technical Information**

**Recounts**

Sample 1205904838 (MB) was recounted due to a suspected blank false positive. The recount is reported. Sample 692599003 (SMMS-MW-11S-102424) was recounted due to a suspected false positive. The recount is reported.



**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2697722

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692599001	SMMS-MW-16-102424
692599002	SMMS-MW-13BR-102424
1205904704	Method Blank (MB)
1205904705	692557001(SMMS-MW-3-102224) Sample Duplicate (DUP)
1205904706	692557001(SMMS-MW-3-102224) Matrix Spike (MS)
1205904707	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Miscellaneous Information**

**Additional Comments**

The matrix spike, 1205904706 (SMMS-MW-3-102224MS), aliquot was reduced to conserve sample volume.

**Product:** Lucas Cell, Ra226, Liquid

**Analytical Method:** EPA 903.1 Modified

**Analytical Procedure:** GL-RAD-A-008 REV# 15

**Analytical Batch:** 2697726

The following samples were analyzed using the above methods and analytical procedure(s).

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
692599003	SMMS-MW-11S-102424
692599004	SMMS-MW-10D-102424
692599005	SMMS-MW-99B-102424
692599006	SMMS-MW-14S-102424
692599007	SMMS-P-1-102424
692599008	SMMS-MW-11D-102424
692599009	SMMS-MW-13S-102424
692599010	SMMS-FB-102424
1205904716	Method Blank (MB)
1205904717	692079001(NonSDG) Sample Duplicate (DUP)
1205904718	692079001(NonSDG) Matrix Spike (MS)
1205904719	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.



**Data Summary:**

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

**Quality Control (QC) Information****Duplication Criteria between QC Sample and Duplicate Sample**

The Sample and the Duplicate, (See Below), did not meet the relative percent difference requirement; however, they do meet the relative error ratio requirement with the value listed below.

Sample	Analyte	Value
1205904717 (Non SDG 692079001DUP)	Radium-226	RPD 107* (0.0%-100.0%) RER 1.32 (0-3)

**Miscellaneous Information****Additional Comments**

The matrix spike, 1205904718 (Non SDG 692079001MS), aliquot was reduced to conserve sample volume.

**Certification Statement**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.





# CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS REQUEST FORM

REF.# 502000

**\*502000\***

Project Name: Sammis 2024 Sampling

Project Number: SMMS-1004-24

Laboratory: ALS

Shipment Method FEDEX

Program: Sammis 2024 2SA Sampling

Company: Field & Technical Services

Address: 200 Third Avenue

Carnegie, PA 15106

(412) 279-3363

Client: ETEM

Sampled By: Abigail Slaubaugh

Contact: aslaubaugh.2006@f-ts.com

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	2320B Alkalinity	6020B_7470A- Total Metals	9056A_2540C												
				Preservative	None	None	HNO3	None												
				Total Bottle Count																
10/22/2024	1300	GW	SMMS-MW-3-102224	5	2	1	1	1												

Notes:

**24100629**

ETEM: ETEM  
Project: Sammis 2024 2SA Sampling



DF2  
2.2'c  
PH39

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
Signature:	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush
Printed Name: Abigail Slaubaugh	Printed Name: Jacklyn Garrett	Printed Name: Jacklyn Garrett	Printed Name: Diane F. Shaw	<input checked="" type="checkbox"/> Standard
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 10/22/2024 1354	Date/Time: 10-22-24 15:02	Date/Time: 10-22-24 17:00	Date/Time: 10/23/24 0900	





CHAIN OF CUSTODY RECORD/LABORATORY ANALYSIS  
REQUEST FORM

REF.# 502001

\*502001\*

Project Name: Sammis 2024 Sampling

Project Number: SMMS-1004-24

Laboratory: ALS

Shipment Method: FEDEX

Program: Sammis 2024 2SA Sampling

Company: Field & Technical Services

Address: 200 Third Avenue

Carnegie, PA 15106

(412) 279-3363

Client: ETEM

Sampled By: Abigail Slaubaugh

Contact: aslaubaugh.2006@f-ts.com

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	2320B Alkalinity	9056A_2540C	6020B_7470A-Total Metals												
				Preservative	None	None	None	HNO3												
				Total Bottle Count																Notes:
10/23/2024	1145	GW	SMMS-MW-2-102324	5	2	1	1	1												
10/23/2024	1250	GW	SMMS-MW-1-102324	5	2	1	1	1												
10/23/2024	1400	GW	SMMS-MW-15-102324	5	2	1	1	1												
10/23/2024	1530	GW	SMMS-MW-9-102324	5	2	1	1	1												
10/23/24	1200	GW	SMMS-MW-994-102324	5	2	1	1	1												
10/23/24	1530	GW	SMMS-FB-01-102324	5	2	1	1	1												

24100629

ETEM: ETEM  
Project: Sammis 2024 2SA Sampling



Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
Signature:	Signature:	Signature:	Signature:	<div><input type="checkbox"/> Rush</div> <div><input checked="" type="checkbox"/> Standard</div>
Printed Name: Abigail Slaubaugh	Printed Name: Jacklyn Garrett	Printed Name: Jacklyn Garrett	Printed Name: Kevin Wokosin	
Firm: FTS	Firm: ALS	Firm: ALS	Firm: ALS	
Date/Time: 10/23/2024 1720	Date/Time: 10-24-24 11:40	Date/Time: 10-24-24 17:00	Date/Time: 10/25/24	

1.9°L DF2  
2.7°L PH39  
2.4°L









CHAMBERS

24100629

ANALYSIS

REF.# 502002

\*502002\*

Project Name: Sammis 2024 Sampling

Project Number: SMMS-1004-24

Laboratory: ALS

Shipment Method: Courier

Program: Sammis 2024 2SA Sampling

ETEM: ETEM  
Project: Sammis 2024 2SA Sampling

Carnegie, PA 15106

(412) 279-3363

Client: ETEM

Sampled By: Daryl Klingensmith

Contact: Dklingensmith@f-ts.com

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	2320B Alkalinity	903_904-Radium 226&228	9056A_2540C	6020B_7470A-Total Metals													
				Preservative	None	None	None	HNO3													
				Total Bottle Count																	
10/24/2024	1015	GW	SMMS-MW-14S-102424	5	1	2	1	1													
10/24/2024	1121	GW	SMMS-P-1-102424	5	1	2	1	1													
10/24/2024	1238	GW	SMMS-MW-11D-102424	5	1	2	1	1													
10/24/2024	1524	GW	SMMS-MW-13S-102424	5	1	2	1	1													

10/24/2024 1528 GW SMMS-FB-102424 5 1 2 1 1

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
Signature:	Signature:	Signature:	Signature:	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Daryl Klingensmith	Printed Name: Daryl Klingensmith	Printed Name: Daryl Klingensmith	Printed Name: Daryl Klingensmith	
Firm: FTS	Firm: FTS	Firm: FTS	Firm: FTS	
Date/Time: 10/24/2024 1834	Date/Time: 10-25-24 12:05	Date/Time: 10-25-24 17:00	Date/Time: 10-26-24 8:00	





CHAI

24100629

LYSIS

REF.#

502002

\*502002\*

Project Name: Sammis 2024 Sampling

Project Number: SMMS-1004-24

Laboratory: ALS

Shipment Method: Courier

Program: Sammis 2024 2SA Sampling

Address: 200 Pine  
Carnegie, PA 15106  
(412) 279-3363

Client: ETEM

Sampled By: Sydney Calhoun

Contact: scalhoun@f-ts.com

Sample Date	Sample Time	Matrix	Sample Identification	Analysis	903_904-Radium 226&228	9056A_2540C	6020B_7470A-Total Metals	2320B Alkalinity												
				Preservative	None	None	HNO3	None												
				Total Bottle Count																Notes:
10/24/2024	1027	GW	SMMS-MW-16-102424	5	2	1	1	1												
10/24/2024	1231	GW	SMMS-MW-13BR-102424	5	2	1	1	1												
10/24/2024	1500	GW	SMMS-MW-11S-102424	5	2	1	1	1												
10/24/2024	1635	GW	SMMS-MW-10D-102424	5	2	1	1	1												

10/24/24 1657 GW SMMS-MW-99B-102424 5 2 1 1 1

Relinquished by:	Received by:	Relinquished by:	Received by:	Turnaround Requirements
Signature: <i>Sydney Calhoun</i>	Signature: <i>Jaclyn Garrett</i>	Signature: <i>Jaclyn Garrett</i>	Signature: <i>Calhoun</i>	<input type="checkbox"/> Rush  <input checked="" type="checkbox"/> Standard
Printed Name: Sydney Calhoun	Printed Name: Jaclyn Garrett	Printed Name: Jaclyn Garrett	Printed Name:	
Firm: FTS	Firm: ALS	Firm: ALS	Firm:	
Date/Time: 10/24/2024 1819	Date/Time: 10-25-24 12:05	Date/Time: 10-25-24 17:00	Date/Time: 10-26-24 8:00	

4.50 DFL



Sample Receipt Checklist

Client Name: **ETEM**

Date/Time Received: **23-Oct-24 09:00**

Work Order: **24100629**

Received by: **DS**

Checklist completed by **Diane Shaw**

24-Oct-24

Reviewed by: **Jodi Blouw**

25-Oct-24

eSignature

Date

eSignature

Date

Matrices: **Groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☐

No ☐

Not Present ☒

Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

Sample(s) received on ice?

Yes ☒

No ☐

Temperature(s)/Thermometer(s):

2.2/2.2 c

DF2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage:

10/24/2024 10:13:54 AM

Water - VOA vials have zero headspace?

Yes ☐

No ☐

No VOA vials submitted ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

N/A ☐

pH adjusted?

Yes ☐

No ☒

N/A ☐

pH adjusted by:

-

Login Notes: **pH check <2.**

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

Revision: 1