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Illinois Environmental Protection Agency
BOW-Permits #15-CCR Coordinator
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

DATE
31 January 2025

SUBJECT
Eleventh Post-Closure
Groundwater Monitoring Report
Fourth Quarter 2024
Grand Tower Energy Center
Closed Coal Combustion Residuals
Impoundment
1820 Power Plant Rd
Grand Tower, IL 62942
BOW ID No. W0770400003

REFERENCE
ERM Project No. 0599247

To Whom it May Concern:

Environmental Resources Management Inc. (ERM) is submitting this report which provides the results and findings of the Grand Tower Energy Center (GTEC) quarterly post-closure groundwater sampling and closed coal combustion residuals (CCR) impoundment inspection event conducted during the fourth quarter 2024 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the “Site”). The fourth quarter groundwater sampling event took place between 15 October and 17 October 2024, and the closed impoundment inspection event was conducted on 16 October 2024. A Site location map is provided in Figure 1.

The fourth quarter 2024 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application (OPA) submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021, as modified in accordance with the Consolidated IEPA Comments dated 17 March 2022 and included in the updated Closure/Post-Closure Plan submitted to the IEPA with the 27 February 2024 response to the 23 January 2023 OPA comment letter from the IEPA. The purpose of the sampling event was to continue the initial five-year period of quarterly groundwater monitoring for the evaluation of the concentration and areal distribution of impacts related to the closed CCR impoundment in Site groundwater. The parameters detected in the groundwater are associated with the historical CCR impoundment, which was capped and closed in 2020. The quarterly results include a summary of field activities, laboratory analytical, and documentation of other associated Site activity, as necessary.

Fourth quarter 2024 site activities, performed in accordance with the proposed post-closure groundwater monitoring program, the results of which are summarized below, included:

- Inspection of the final cover system of the closed CCR impoundment.
- Inspection of the groundwater monitoring well array; and
- Groundwater monitoring activities.

QUARTERLY CLOSED CCR IMPOUNDMENT INSPECTION

During the fourth quarter of 2024, an inspection of the closed CCR impoundment cover system and associated features was completed, and the full quarterly inspection report can be found in Appendix A. Woody vegetation (up to 1” diameter) noted to be within the riprap on the CCR impoundment cap faces, is treated with herbicide. No herbicide treatment was necessary in 2024. However, a limited amount of live woody vegetation growth continues to be observed within the riprap. The largest of the erosional features, on the northern impoundment cap face, was repaired during the Q4 sampling event. Additional erosional channels on the west, south, and east faces, uncovered after clearing the vegetation on the impoundment cap, are all less than 6” deep in the deepest locations and will be monitored during subsequent inspection events and recommendations made to repair these features, if necessary. No significant degradation or issues were noted associated with the overall closed CCR impoundment cover system.

QUARTERLY MONITORING WELL INPSECTION AND GAUGING

During the fourth quarter of 2024, monitoring well inspections were conducted. The monitoring well protectors and casings were inspected for damage and/or signs of settling that might impact the integrity of the surface seals. The inspection tasks also included gauging total depths as well as static groundwater elevations. Both measurements were referenced from the top of casing (TOC) at each of the Site monitoring wells. Total depth and groundwater level measurements were obtained from the monitoring wells using a water level meter with an accuracy of 0.01 foot. The quarterly monitoring well inspection forms can be found in Appendix B. Based upon these measurements, a shallow groundwater contour map for the Site was developed for the fourth quarter of 2024. The groundwater gradient is primarily from east to west towards the Mississippi River except during times of flooding events that may cause a reverse flow from west to east for a short period of time (Natural Resource Technology, Phase 1 Hydrogeologic Assessment Report, March 2013). Figure 2 shows monitoring well locations with a groundwater contour and groundwater gradient direction arrow(s), groundwater elevations at each monitoring well, and the Mississippi River elevation at the time of groundwater level gauging.

QUARTERLY GROUNDWATER MONITORING

The Groundwater Protection Standards (GWPS) for the Site are those provided in 35 IAC §845.600(a). Assessment of corrective measures began on 16 June 2022 with the commencement of the initial post-closure groundwater sampling event. During the fourth quarter 2024 sampling event, 12 monitoring wells (APW-01R, APW-02, APW-03, APW-04, APW-05R, APW-06D, APW-06S, APW-07, APW-08, APW-09, APW-10D, and APW-10S) were sampled. The monitoring wells were purged prior to sampling using a submersible pump according to United States Environmental Protection Administration (USEPA) low flow purging and sampling procedures ("Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells" revised September 19, 2017). The pump intake was placed within the screened interval of each monitoring well sampled and stabilization measurements were collected using a calibrated YSI ProDSS meter during purging activities for the collection of pH, specific conductivity, temperature, dissolved oxygen, and oxidation reduction potential (ORP) readings. Turbidity readings were also collected from each monitoring well using a Hach 2100Q Turbidimeter. Well purging continued until stabilization of each field parameter was achieved according to USEPA guidelines for low-flow sampling. Once the field parameters stabilized, the YSI meter was disconnected, and groundwater samples were collected for analysis using the same dedicated polyethylene tubing that was used to purge the well. Field parameter measurements collected during this sampling event were recorded on field data forms. Copies of the field data forms are included in Appendix C.

The groundwater samples collected were placed in laboratory-provided sample containers for analysis by Pace Analytical located in Mt. Juliet, TN which is an IEPA-approved laboratory. Samples were transported via FedEx under chain-of-custody procedures to the laboratory for analytical testing within laboratory provided coolers containing ice. The laboratory analytical reports for the fourth quarter 2024 sampling event are included in Appendices D & E.

In accordance with the 3 March 2022 draft comments received from the IEPA Groundwater Section associated with the post-closure groundwater monitoring program contained in the Operating Permit Application submitted to the IEPA on 28 October 2021, the IEPA evaluates the efficacy of corrective actions for closed CCR impoundments through the comparison of the groundwater analytical results to the GWPS contained in 35 IAC §845.600. Under 35 IAC §845.600, the following groundwater parameters are to be monitored:

- Antimony
- Arsenic
- Barium
- Beryllium
- Boron
- Cadmium
- Chloride
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- pH
- Selenium
- Sulfate
- Thallium
- TDS
- Radium 226/228
- Calcium
- Turbidity

GROUNDWATER ANALYTICAL RESULTS

The analytical results for the post-closure groundwater sampling event conducted during the fourth quarter 2024 are presented in Table 1. During the fourth quarter 2024 sampling event, the following analytes were detected in the listed wells above the GWPS:

- Arsenic: APW-02, APW-06D, APW-10S
- Boron: APW-02, APW-03, APW-05R, APW-06D, APW-06S
- Calcium: APW-02, APW-03, APW-05R, APW-06D, APW-06S, APW-07, APW-10S, APW-10D
- Lead: APW-02
- Lithium: APW-02
- Molybdenum: APW-02, APW-05R, APW-06S
- Turbidity: APW-02, APW-04, APW-05R, APW-08, APW-10D, APW-10S

APW-10S, located approximately one-half mile south of the closed CCR impoundment, continues to exhibit elevated arsenic concentrations. However, the occurrence of arsenic in this well is not considered to be related to the closed CCR impoundment due to its distance and location hydraulically side gradient in relation to the Site. Additionally, the monitoring wells located between the closed CCR impoundment (APW-03, APW-07, APW-08, APW-09, and APW-10D) and APW-10S, do not exhibit arsenic concentration above the GWPS.

The GTEC closed CCR impoundment is currently in Corrective Action Monitoring (CAM). As reported in the *2023 Grand Tower Energy Center Annual Groundwater Monitoring Report* submitted by ERM and dated January 2024, statistical analysis conducted on the data collected from the first seven quarters of post-closure monitoring (2nd quarter 2022 through 4th quarter 2023) indicates that arsenic, boron, lithium, molybdenum, and sulfate exceed the calculated background concentrations and the IEPA GWPS established in 35 IAC Section 845.600 in monitoring wells at the Site. Statistical analysis of the groundwater sampling results will continue to be completed on an annual basis to evaluate if statistically significant increases or decreases have occurred after cap and closure occurred in 2020 in accordance with 35 IAC Section §845.640(f). In accordance with 35 IAC Section §845.550(a) an Annual Groundwater Monitoring and Corrective Action Report will be submitted for 2024 by or before 31 January 312025.

At the end of the current five-year monitoring and reporting post-closure time frame, a groundwater performance monitoring report will be submitted to IEPA to either demonstrate restoration of groundwater quality to Class I standards or present a continued groundwater monitoring plan for an additional five years. In addition, the

results will be compared to the modeled concentrations to evaluate if a decreasing trend, as defined through modeling, is occurring at the predicted rate. Significant changes from the model results will lead to additional calibration and assessment of future expected rates of decrease for the constituents of concern (COCs).

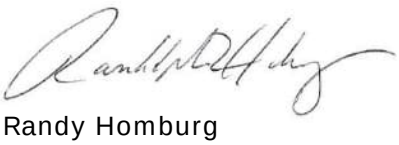
SUMMARY AND CONCLUSIONS

Based upon the results of the fourth quarter 2024 groundwater sampling event, well inspection, and closed CCR impoundment inspection, the following observations and conclusions have been made:

- Similar to the groundwater sampling results obtained during the eight pre-closure sampling events in 2017 to 2018, and 11 post-closure groundwater sampling events, concentrations of COCs above the GWPS continue to be detected at well locations downgradient of the closed CCR impoundment.
- Boron has historically been the key indicator for corrective action and continued monitoring of groundwater at the Site. Incorporating data from the eight rounds of pre-closure groundwater sampling conducted during 2017 and 2018, as well as the 11 post groundwater monitoring events, boron concentrations have shown a decreasing trend in Site monitoring wells.
- During this event, erosion on the northern face of the impoundment cap was repaired. No other significant degradation or issues were noted associated with the overall closed CCR impoundment cover system. ERM will continue monitoring of Site conditions and cap and impoundment maintenance items through quarterly visual inspections and monthly remote satellite image inspections when visual inspections are not conducted.
- During the Q4 event, minor woody vegetation was observed in the riprap, less than 1” thick. Continued monitoring of woody growth, and treatment recommendation, if necessary, will take place.

If you have any questions, please contact me at (314) 447-7237.

Sincerely,



Randy Homburg
Managing Consultant

Alan J. Cork, P.E.
Partner, Engineer

Attachments

cc: Mr. John Brodhead, Grand Tower Energy Center (electronic)

FIGURES

DRAWN BY: S. Vickery

FILE: \\usbdcfs02\data\Philadelphia\Team\DMM\GIS\Projects\Grand Tower Energy Center_MXD\FIGURE1-SITELOCATIONMAP_20221003.mxd | REVISED: 10/03/2022 | SCALE: 1:12,000 when printed at 11x17

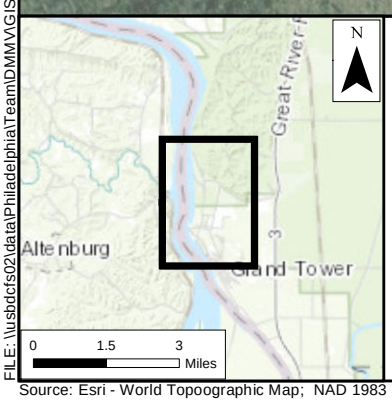
Grand Tower Energy Center (GTEC)

Closed Coal Combustion Residuals (CCR) Impoundment

Mississippi River

Grand Tower

0 840 1,680 Feet



Legend

- Closed Coal Combustion Residuals (CCR) Impoundment
- Approximate Parcel Boundary

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. World Imagery (3/24/2021)

Figure 1
Site Location Map
Grand Tower Energy Center, LLC
Grand Tower, Ilinois
Jackson County

Environmental Resources Management
www.erm.com

Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

DRAWN BY: ECLW

Power Plant Rd

N

APW-1R
331.13

APW-05R
329.30

APW-02
328.31

329

329.5

330

APW-04
331.23

330.5

APW-06S
329.95

APW-06D
330.27

331

APW-03
331.12

APW-09
331.71

APW-07
330.26

331.5

APW-08
331.58

Mississippi River

331

331.5

*Mississippi River
Elevation = 347.74 Ft

APW-10D
332.17

APW-10S
330.52

201

25th Ave

301

0 240 480 Feet

Legend

- Monitoring Well Location
- Groundwater Contour (0.5 Ft. Interval) - Dashed where inferred
- Groundwater Flow Direction
- 328.84 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging - October 15, 2024
3. Ft AMSL - Feet Above Mean Sea Level
4. (D) - Designated Wells not used in contouring
5. * River stage at Mississippi River Gauge at Grand Tower, IL (NGVD29) (https://rivergages.mvr.usace.army.mil/WaterControl/shefdata2.cfm?sid=CE358576&d=31&dt=E)
6. BING Imagery, 2022

Figure 2: Fourth Quarter 2024 Groundwater Contour Map
Grand Tower Energy Center, LLC
Grand Tower, Illinois
Jackson County

ERM

Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

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TABLES

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled prior to closure of CCR Impoundment										Post-Closure Sampling									
			Sample ID	APW-1R-20170907	APW-1R-20170927	APW-1R-20171018	APW-1R-20171108	APW-1R-20171127	APW-1R-20171228	APW-1R-20180117	APW-1R-20180207	APW-1R-20220615	APW-01R-WG-20220915	APW-01R-WG-20221130	APW-01R-WG-20230202	APW-01R-WG-20230627	APW-01R-WG-20230920	APW-01R-WG-20231129	APW-01R-WG-20240110	APW-01R-WG-20240501	APW-01R-WG-20240905	**APW-01R-WG-20241015**
			Location ID	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	APW-01R	**APW-01R**
			Sample Date	09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/07/2018	06/15/2022	09/15/2022	11/30/2022	02/02/2023	06/27/2023	09/20/2023	11/29/2023	01/10/2024	05/01/2024	09/05/2024	**10/15/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[4]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.16	0.21	0.15	0.18	0.17	0.14	0.17	0.17	0.183	0.326	0.201	0.15 U
Radium-226	NA	pCi/L	NS	0.25 ± .12 U	0.18 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	-0.07 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	-0.04 ± 0.08 U	0.0323 ± 0.141 U	0.24 ± 0.1 U	0.4 ± 0.12 U	0.16 ± 0.169 J	0.27 ± 0.11 U	0.32 ± 0.11 U	0.24 ± 0.08 U	0.738 ± 0.354	0.383 ± 0.294	0.167 ± 0.164 J	0.126 ± 0.144 J
Radium-228	NA	pCi/L	NS	2.29 ± .98	0.51 ± .39 U	0.12 ± .332	0.57 ± 0.33 U	0.47 ± 0.54 U	0.04 ± 0.34 U	0.98 ± 0.62 J	0.22 ± 0.34 U	0.661 ± 0.257	0.43 ± 0.49 UQM-	0.41 ± 0.56 U	0.531 ± 0.284	0.85 ± 0.61 J	0.32 ± 0.56 U	0.97 ± 0.67 J	1.44 ± 0.229	0.671 ± 0.262	-0.199 ± 0.295 U	0.183 ± 0.206 J
Sulfate	NA	mg/L	400	41	65	65	54	58	88	78	79	53	73 S	69	74	37	79	73	68.9	61.7	34	58.5
CALC																						
Radium-226/228	NA	pCi/L	7.002	2.54 ± 1.1	0.69 ± 0.48 U	0.427 ± 0.652	0.7 ± 0.76 U	0.47 ± 0.7 U	0.27 ± 0.44 U	1.01 ± 0.69 U	0.22 ± 0.42 U	0.693 ± 0.293	0.67 ± 0.59 U	0.81 ± 0.68 U	0.691 ± 0.330	1.12 ± 0.72 U	0.64 ± 0.67 U	1.21 ± 0.75 U	2.18 ± 0.422	1.05 ± 0.394	0.167 ± 0.338 U	0.309 ± 0.251 J
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.96[1]									33.9	31.7	31.7	89.5	83.2	133	95.6	25.6	71.3	19.2	16.8
General Chem																						
Chloride	NA	mg/L	200	5 U	5 U	5 U	5 U	5 U	9	11	10	2	7	7	7	4 U	5	7	9.07	7.19	1.97	6.15
Dissolved Solids, Total	NA	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328	355	300	385	439	372	384
pH, Lab	NA	pH units	6.22-9.0[2]	6.64	6.54	6.6	6.8	7.11	6.96	7.09	6.52	6.98	6.91	6.43	6.57	6.53 H	6.66 H	6.59 H	7.19 T8	7.04 T8	6.88 T8	6.85 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001	0.0011	0.0016	0.0015	0.002 U	0.002 U F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.0012	0.0012	0.001 U	0.0012	0.0011	0.001 U	0.0011	0.0011	0.0019	0.0019	0.0021	0.0018	0.0013	0.0029	0.0033	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.16	0.153	0.162 B	0.155	0.164	0.21	0.245	0.159	0.194 F1	0.154	0.162
Barium	T	mg/L	2	0.168	0.193	0.171	0.176	0.165	0.178	0.182	0.18	0.197	0.185	0.199	0.178	0.168	0.202	0.259	0.169	0.204	0.155	0.165
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.163	0.244	0.219	0.205	0.249	0.204	0.279		0.238 F1	0.205	0.228
Boron	T	mg/L	2	0.218	0.251	0.238	0.211	0.225	0.329	0.357	0.311	0.228	0.242	0.222	0.221	0.176	0.18	0.263		0.247	0.2 U	0.242
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									85.6	83.8 S	73.9	71.4	66.4	72.1	57.6	76.8	101 F1	94.1	91.1
Calcium	T	mg/L	103.2	84.3 S	93 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4	79.7	75.5 S	66.8 B	59.2 S	94.3	78.4	98	89 S	89 S
Chromium	D	mg/L	0.1									0.0009 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0023	0.0021	0.0033	0.001 U	0.001 U	0.0018	0.0015	0.0015	0.0031	0.0034	0.0041	0.0022	0.0015 U	0.0085	0.0049	0.00248	0.00322	0.002 U	0.00206
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.0013	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0017	0.0017	0.0031	0.0013	0.0014	0.0041	0.0027	0.002 U	0.00225	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									1.42							0.405			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0062	0.0014	0.001 U	0.001 U	0.0026	0.002	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135	0.015	0.0211	0.0193	0.014	0.0143 F1	0.013	0.0165
Lithium	T	mg/L	0.04	0.0155	0.018	0.0173	0.0175	0.018	0.0179	0.0164	0.0159	0.0171	0.0169	0.0155	0.0157	0.0142	0.0147	0.0189	0.0153	0.015	0.0133	0.0152
Manganese	D	mg/L	NS																0.2362			
Manganese	T	mg/L	NS									0.139							0.0791			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.00523	0.005 U F1	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0043		0.0061					0.00664			
Nickel	T	mg/L	NS	0.0044	0.0062	0.0054	0.004	0.0038	0.0046	0.005	0.0057	0.0083		0.012					0.00804			
Selenium	D	mg/L	0.05									0.0028	0.0032	0.0033	0.0032	0.0032	0.0037	0.0058	0.00435	0.00444 F1	0.00289	0.00341
Selenium	T	mg/L	0.05	0.0038	0.004	0.0034	0.0044	0.0041	0.004	0.004	0.0037	0.0028	0.0038	0.0035	0.0037	0.0033	0.0037	0.0054	0.00514	0.00437	0.00351	0.00327
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0014	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

Sampled Prior to Closure of CCR Impoundment

Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]	APW-2-20170907	APW-2-20170927	APW-2-20171020	APW-2-20171109	APW-2-20171129	APW-2-20171227	APW-2-20180119	APW-2-20180207
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				09/06/2017	09/28/2017	10/20/2017	11/09/2017	11/29/2017	12/27/2017	01/19/2018	02/07/2018
Sample Type				N	N	N	N	N	N	N	N
UNSPECIFIED											
Fluoride	NA	mg/L	4	0.24	0.26	0.25	0.24	0.24	0.25	0.26	0.24
Radium-226	NA	pCi/L	NS	1.06 ± 0.21	0.03 ± 0.1 U	-0.132 ± 0.410	1.47 ± 0.26		0.33 ± 0.12 U	0.47 ± 0.15 U	0.97 ± 0.23 J
Radium-228	NA	pCi/L	NS	1.98 ± 0.95	-0.01 ± 0.6 U	0.504 ± 0.378	0.91 ± 0.36 J		0.95 ± 0.52 J	1.08 ± 0.59	0.99 ± 0.5 J
Sulfate	NA	mg/L	400	462	460	472 S	479	472	426	443	416
CALC											
Radium-226/228	NA	pCi/L	7.002	3.04 ± 1.16	0.03 ± 0.7 U	0.504 ± 0.788	2.38 ± 0.62		1.28 ± 0.64 U	1.55 ± 0.74 U	1.96 ± 0.73 U
FIELD PARAM											
Turbidity, Field	NA	NTU	17.96[1]								
GEN CHEM											
Chloride	NA	mg/L	200	13	12	11	11	12	12	12	12
Dissolved Solids, Total	NA	mg/L	1200	858	880	934	916	870	848	836	888
pH, Lab	NA	pH units	6.22-9.0[2]	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96
METALS											
Antimony	D	mg/L	0.006								
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0021
Arsenic	D	mg/L	0.01								
Arsenic	T	mg/L	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739
Beryllium	D	mg/L	0.004								
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011
Boron	D	mg/L	2								
Boron	T	mg/L	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24
Cadmium	D	mg/L	0.005								
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	148	145	171 S	157	158	135	134	175
Chromium	D	mg/L	0.1								
Chromium	T	mg/L	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112
Cobalt	D	mg/L	0.006								
Cobalt	T	mg/L	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0201	0.0096	0.0075	0.0031	0.0048	0.0239
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.05	0.0455	0.0647	0.0521	0.0542	0.0474	0.045	0.0604
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1								
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131
Nickel	D	mg/L	NS								
Nickel	T	mg/L	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725
Selenium	D	mg/L	0.05								
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002								
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U

Post-Closure Sampling

Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]	APW-02-WG-20220616	APW-02-WG-20220914	DUP-002-WG-20220914	APW-02-WG-20221129	DUP-02-WG-20221129	APW-02-WG-20230201	DUP-02-WG-20230201
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				06/16/2022	09/14/2022	09/14/2022	11/29/2022	11/29/2022	02/01/2023	02/01/2023
Sample Type				N	N	FD	N	FD	N	FD
UNSPECIFIED										
Fluoride	NA	mg/L	4	0.25	0.22	0.22	0.25	0.26	0.23	0.22
Radium-226	NA	pCi/L	NS	0.159 ± 0.181 J	0.27 ± 0.1 UODR	0.14 ± 0.07 U	0.5 ± 0.14 U	0.35 ± 0.12 U	0.0737 ± 0.256 U	0.175 ± 0.279 J
Radium-228	NA	pCi/L	NS	0.308 ± 0.236 J3U	0.4 ± 0.48 UODR	2.81 ± 1.03	0.24 ± 0.44 U	0.27 ± 0.55 U	1.07 ± 0.466	0.981 ± 0.290
Sulfate	NA	mg/L	400	496	491	490	418	438	459	455
CALC										
Radium-226/228	NA	pCi/L	7.002	0.467 ± 0.297 J	0.67 ± 0.58 U	2.95 ± 1.1	0.74 ± 0.58 U	0.62 ± 0.67 U	1.14 ± 0.532	1.16 ± 0.402
FIELD PARAM										
Turbidity, Field	NA	NTU	17.96[1]	38	19.2		132		93.6	
GEN CHEM										
Chloride	NA	mg/L	200	9	11	10	9	9	10	10
Dissolved Solids, Total	NA	mg/L	1200	930	890 H	905 H	885	855	852	866
pH, Lab	NA	pH units	6.22-9.0[2]	7.21	7.32	7.25	7.01	7.02	6.98	7.05
METALS										
Antimony	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01	0.0117	0.0048	0.0049	0.0012	0.0187	0.016	0.0138
Arsenic	T	mg/L	0.01	0.0158	0.026	0.0176	0.022	0.0173	0.0185	0.0175
Barium	D	mg/L	2	0.154	0.123	0.135	0.125 B	0.148 B	0.187	0.154
Barium	T	mg/L	2	0.237	0.408	0.238	0.254	0.218	0.214	0.159
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.002 U	0.001 U	0.001 U	0.001 SU	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2	8.17	7.49 S	7.9	0.656	6.63	8.21	7.39
Boron	T	mg/L	2	8.13	9.43	8.72	8.97 S	7.69	7.75	8.32 S
Cadmium	D	mg/L	0.005	0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2	175	136 S	165	96.1	129	108	144
Calcium	T	mg/L	103.2	189	198	178	145 S	149	144	149 S
Chromium	D	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0254	0.0148	0.0066	0.0064	0.0054	0.0052	0.0022
Cobalt	D	mg/L	0.006	0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0011 J	0.0044	0.0011	0.0015	0.0011	0.001 U	0.001 U
Iron	D	mg/L	NS							
Iron	T	mg/L	NS	11.7						
Lead	D	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0022	0.0119	0.0033	0.0033	0.0034	0.0027	0.0023
Lithium	D	mg/L	0.04	0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387
Lithium	T	mg/L	0.04	0.0507	0.0559	0.0456	0.0386	0.0411	0.0417	0.044
Manganese	D	mg/L	NS							
Manganese	T	mg/L	NS	0.752						
Mercury	D	mg/L	0.002		0.0002 U	0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.00043	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1	0.201	0.139	0.156	0.0337	0.145	0.151	0.155
Molybdenum	T	mg/L	0.1	0.24	0.174	0.174	0.128	0.119	0.165	0.16
Nickel	D	mg/L	NS	0.0039			0.0022	0.001 U		
Nickel	T	mg/L	NS	0.0142			0.0045	0.0047		
Selenium	D	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.0071	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]	APW-02-WG-20230627	DUP-02-WG-20230627	APW-02-WG-20230920	APW-02-WG-20231128	APW-02-WG-20240110	APW-02-WG-20240501	APW-02-WG-20240905	PW-02-WG-20241015
Location ID				APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02
Sample Date				06/27/2023	06/27/2023	09/20/2023	11/28/2023	01/10/2024	05/01/2024	09/05/2024	10/15/2024
Sample Type				N	FD	N	N	N	N	N	N
UNSPECIFIED											
Fluoride	NA	mg/L	4	0.22	0.22	0.24	0.26	0.23	0.25	0.197	1.5 U
Radium-226	NA	pCi/L	NS	0.21 ± 0.1 U	-0.05 ± 0.07 U	0.38 ± 0.12 U	0.12 ± 0.06 U	0.0909 ± 0.186 U	0.326 ± 0.259	0.402 ± 0.233	1.29 ± 0.447
Radium-228	NA	pCi/L	NS	-0.42 ± 0.6 U	0.13 ± 0.52 U	3.71 ± 0.93	0.56 ± 0.64 U	0.243 ± 0.202 J	0.966 ± 0.329	1.15 ± 0.464	0.218 ± 0.450 U
Sulfate	NA	mg/L	400	500	465	460	440	411	510	376	385
CALC											
Radium-226/228	NA	pCi/L	7.002	0.21 ± 0.7 U	0.13 ± 0.59 U	4.09 ± 1.05	0.68 ± 0.7 U	0.333 ± 0.275 J	1.29 ± 0.419	1.55 ± 0.519	1.51 ± 0.634
FIELD PARAM											
Turbidity, Field	NA	NTU	17.96[1]	104.3		97	169	104	66.1	174	663
GEN CHEM											
Chloride	NA	mg/L	200	7	8	7	8	7.78	5.38	7.55	10 U
Dissolved Solids, Total	NA	mg/L	1200	920	870	845	920	820	845	783	816
pH, Lab	NA	pH units	6.22-9.0[2]	6.9 H	7.03 H	7.15 H	7.11 H	7.52 T8	7.14 T8	7.18 T8	7.2 T8
METALS											
Antimony	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01	0.011	0.0107	0.0072	0.0168	0.00409	0.00255 F1	0.00426	0.0028
Arsenic	T	mg/L	0.01	0.0148	0.0146	0.0093	0.0237	0.0112	0.0101	0.0178	0.0267
Barium	D	mg/L	2	0.142	0.145	0.133	0.205	0.131	0.137 F1	0.124	0.141
Barium	T	mg/L	2	0.149	0.206	0.152	0.303	0.155	0.145	0.162	0.173
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2	8.97	9.24	8.91	9.57 S		9.91 F1	8.28	8.21
Boron	T	mg/L	2	9.14	9.51 S	8.24	9.62		10.2	8.24	8.09
Cadmium	D	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2	147	148	151	121 S	144	162 F1	156	155
Calcium	T	mg/L	103.2	161 B	167 S	132	132	146	161	156	170
Chromium	D	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0024	0.0079	0.008	0.0092	0.002 U	0.002 U	0.00658	0.0191
Cobalt	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.0016	0.001 U	0.0027	0.002 U	0.002 U	0.00232	0.0057
Iron	D	mg/L	NS					0.1 U			
Iron	T	mg/L	NS					7.63			
Lead	D	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.0025	0.0029	0.002	0.0057	0.00235	0.002 U	0.00662	0.0176
Lithium	D	mg/L	0.04	0.0442	0.0455	0.0583	0.0506	0.0396	0.0432 F1	0.038	0.0444
Lithium	T	mg/L	0.04	0.0459	0.048	0.0422	0.056	0.0416	0.045	0.0408	0.048
Manganese	D	mg/L	NS					0.616			
Manganese	T	mg/L	NS					0.669			
Mercury	D	mg/L	0.002					0.0002 U	0.0002 U F1	0.000214	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1	0.227	0.227	0.214	0.205	0.157	0.34 F1	0.172	0.163
Molybdenum	T	mg/L	0.1	0.229	0.252	0.198	0.147	0.158	0.332	0.162	0.129
Nickel	D	mg/L	NS					0.002 U			
Nickel	T	mg/L	NS					0.00237			
Selenium	D	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.0015	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling								
			Sample ID	APW-3-20170907	APW-3-20170929	APW-3-20171020	APW-3-20171110	APW-3-20171129	APW-3-20171228	APW-3-20180119	APW-3-20180208	APW-03-WG-20220616	APW-03-WG-20220915	APW-03-WG-20221130	APW-03-WG-20230130	APW-03-WG-20230626	APW-03-WG-20230919	APW-03-WG-20231127	APW-03-WG-20240111	APW-03-WG-20240430	APW-03-WG-20240904	APW-03-WG-20241016
			Location ID	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03
			Sample Date	09/06/2017	09/29/2017	10/20/2017	11/10/2017	11/29/2017	12/28/2017	01/19/2018	02/08/2018	06/16/2022	09/15/2022	11/30/2022	01/30/2023	06/26/2023	09/19/2023	11/27/2023	01/11/2024	04/30/2024	09/04/2024	10/16/2024
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter / Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34	0.26	0.2	0.26	0.23	0.23	0.25	0.24	0.202	0.37	0.285	0.15 U
Radium-226	NA	pCi/L	NS	0.53 ± .18 U	0.04 ± 0.09 U	0.409 ± 0.426	0.18 ± 0.11 U	0.33 ± 0.17 U	0.2 ± 0.1 U	0.1 ± 0.1 U	0.31 ± 0.15 U	0.201 ± 0.155	0.56 ± 0.13 U	0.19 ± 0.1 U	0.293 ± 0.212	0.23 ± 0.11 U	0.2 ± 0.09 U	0.11 ± 0.05 U	3.18 ± 0.675	0.594 ± 0.383	0.493 ± 0.251	0.0651 ± 0.146 U
Radium-228	NA	pCi/L	NS	2.05 ± .96	1.01 ± 0.57	0.492 ± 0.373	0.72 ± 0.37 J	0.31 ± 0.49 U	0.37 ± 0.44 U	1.32 ± 0.68	0.06 ± 0.36 U	1.89 ± 0.26 J3	0.4 ± 0.5 UQDR	0.67 ± 0.59 U	0.119 ± 0.430 U	0.61 ± 0.54 U	0.85 ± 0.52 J	0.66 ± 0.58 JQDR	-0.0217 ± 0.241 U	0.585 ± 0.256	1.4 ± 0.319	1.09 ± 0.261
Sulfate	NA	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322	292	280	133	80.1	285	259	271
CALC																						
Radium-226/228	NA	pCi/L	7.002	2.58 ± 1.14	1.05 ± 0.66 U	0.901 ± 0.799	0.9 ± 0.48 U	0.64 ± 0.66 U	0.57 ± 0.54 U	1.42 ± 0.78 U	0.37 ± 0.51 U	2.09 ± 0.303	0.96 ± 0.63 U	0.86 ± 0.69 U	0.412 ± 0.479 J	0.84 ± 0.65 U	1.05 ± 0.61 U	0.77 ± 0.63 U	3.18 ± 0.717	1.18 ± 0.461	1.9 ± 0.406	1.15 ± 0.299
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.98[3]									40.3	56.1	103	50.7	6.04	2.72	4	7.12	2.53	1.94	4.48
GEN CHEM																						
Chloride	NA	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21	17	16	11	8.04	15	11.6	10.5
Dissolved Solids, Total	NA	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524	614	636	556	489	627	567	587
pH, Lab	NA	pH units	6.22-9.0[2]	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78	7.85	7.46	7.21	7.45	7.77 H	7.84 H	7.24 H	7.4 T8	7.8 T8	7.88 T8	7.94 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0018	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0015	0.0014	0.0024	0.002	0.0016	0.0019	0.0013	0.002 U	0.00219 F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.0022	0.0029	0.0021	0.0018	0.0023	0.0024	0.0028	0.0018	0.002	0.0046	0.0059	0.003	0.004	0.0017	0.002	0.002 U	0.00254	0.002 U	0.002 U
Barium	D	mg/L	2									0.139	0.124	0.108 B	0.139	0.13	0.136	0.122	0.122	0.122 F1	0.114	0.103
Barium	T	mg/L	2	0.111	0.146	0.104	0.0814	0.121	0.1	0.15	0.0806	0.158	0.181	0.19	0.135	0.155	0.137	0.167	0.123	0.119	0.116	0.108
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									4.23	1.49	2.93	4.98	4.64	4.11	1.69		4.2 F1	4.07	4.38
Boron	T	mg/L	2	4.16	4.21 S	4.7	4.67	4.44 S	4.52	4.08	4.92	4.27	1.84	3.59	4.94	4.67	4.19 S	2.22		4.28	4.22	4.41
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									174	125	101	121	125	137	111	123	125 F1	122	121
Calcium	T	mg/L	103.2	86.3	104 S	88.1	74.9	116 S	95	101	77.1	153	143	115	111	139 B	124 S	115	122	121	125	123
Chromium	D	mg/L	0.1									0.0011 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0081	0.0053	0.0026	0.001 U	0.001 U	0.005	0.0025	0.001 U	0.0044	0.0083	0.0118	0.0019	0.0241	0.0015 U	0.0015 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.0014	0.0021	0.001 U	0.0014	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									1.66							0.367			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.0021	0.0042	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0023	0.0029	0.001 U	0.0044	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0238	0.0288	0.0286	0.0275	0.0262	0.0408	0.0256	0.0281	0.0289 F1	0.0314	0.0357
Lithium	T	mg/L	0.04	0.0258	0.0262	0.0259	0.0245	0.0308	0.027	0.035	0.0239	0.0361	0.0329	0.029	0.0276	0.0352	0.0312	0.0324	0.0316	0.0327	0.0315	0.0328
Manganese	D	mg/L	NS																0.438			
Manganese	T	mg/L	NS									0.321							0.435			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.057	0.0342	0.0648	0.0521	0.0656	0.0487	0.0303	0.0274	0.0642 F1	0.0656	0.0626
Molybdenum	T	mg/L	0.1	0.0778	0.0754	0.0761	0.0713	0.0684	0.0748	0.0824	0.0849	0.0601	0.0413	0.0621	0.0528	0.0553	0.0558	0.0319	0.0262	0.0608	0.0656	0.0608
Nickel	D	mg/L	NS									0.0016		0.0011					0.002 U			
Nickel	T	mg/L	NS	0.0055	0.0051	0.0019	0.001 U	0.001 U	0.0026	0.0025	0.001	0.0033		0.01					0.002 U			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0019	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling									
			Sample ID	APW-4-20170907	APW-4-20170929	APW-4-20171019	APW-4-20171108	APW-4-20171128	APW-4-20171228	APW-4-20180119	APW-4-20180208	APW-04-WG-20220615	APW-04-WG-20220915	APW-04-WG-20221128	APW-04-WG-20230202	APW-04-WG-20230627	APW-04-WG-20230920	APW-04-WG-20231129	APW-04-WG-20240110	APW-04-WG-20240501	APW-04-WG-20240904	**APW-04-WG-20241017**
			Location ID	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	**APW-04**
			Sample Date	09/08/2017	09/29/2017	10/19/2017	11/08/2017	11/28/2017	12/28/2017	01/19/2018	02/08/2018	06/15/2022	09/15/2022	11/28/2022	02/02/2023	06/27/2023	09/20/2023	11/30/2023	01/10/2024	05/01/2024	09/04/2024	**10/17/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter / Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																				
UNSPECIFIED																							
Fluoride	NA	mg/L	4	0.18	0.19	0.18	0.17	0.18	0.17	0.17	0.16	0.2	0.17	0.17	0.15	0.16	0.15	0.18	0.17	0.201	0.178	0.15 U
Radium-226	NA	pCi/L	NS	0.38 ± 0.16 U	0.02 ± 0.08 U	-0.272 ± 0.328	0.15 ± 0.09 U	0.09 ± 0.13 U	0.17 ± 0.09 U	-0.05 ± 0.08 U	0.13 ± 0.11 U	0.103 ± 0.164 J	0.5 ± 0.13 U	0.11 ± 0.08 U	0.352 ± 0.232	0.33 ± 0.12 U	0.09 ± 0.07 U	0.19 ± 0.07 U	0.223 ± 0.242 J	0.146 ± 0.275 U	0.302 ± 0.252	0.116 ± 0.132 J
Radium-228	NA	pCi/L	NS	0.95 ± 0.64 J	-0.45 ± 0.68 U	0.53 ± 0.382	0.64 ± 0.31 U	0.88 ± 0.64 J	0.73 ± 0.36 J	0.34 ± 0.51 U	0.64 ± 0.48 U	0.245 ± 0.235 J	2.15 ± 0.78	1.47 ± 0.67	0.961 ± 0.296	0.92 ± 0.68 J	1.18 ± 0.67	0.66 ± 0.64 J	0.629 ± 0.280	0.451 ± 0.288 J	0.51 ± 0.209	0.379 ± 0.275 J
Sulfate	NA	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62	65	66	54	50.9 J6	53.9	86.2	65.6
CALC																							
Radium-226/228	NA	pCi/L	7.002	1.33 ± 0.8 U	0.02 ± 0.76 U	0.53 ± 0.71	0.79 ± 0.4 U	0.97 ± 0.77 U	0.9 ± 0.45 U	0.34 ± 0.59 U	0.77 ± 0.59 U	0.348 ± 0.287 J	2.65 ± 0.91	1.58 ± 0.75 U	1.31 ± 0.376	1.25 ± 0.8 U	1.27 ± 0.74 U	0.85 ± 0.71 U	0.852 ± 0.370	0.597 ± 0.398 J	0.811 ± 0.327	0.494 ± 0.305 J
FIELD PARAM																						FIELD PARAM	
Turbidity, Field	NA	NTU	17.98[3]									19.1	18.3	26.5	37.3	38.7	21.6	22.8	29.8	91.7	36.2	91.4	
GEN CHEM																							
Chloride	NA	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12	9	11	9.21	11.6	9.98	10.1	
Dissolved Solids, Total	NA	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432	476	430	418	404	442	418	
pH, Lab	NA	pH units	6.22-9.0[2]	7.31	7.33	7.31	7.42	7.32	7.33	7.25	7.2	7.41	7.51	7.34	7.21	7.39 H	7.56 H	7.31 H	8.17 T8	7.5 T8	7.65 T8	7.46 T8	
METALS																							
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U	
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011	0.0014	0.0016	0.002	0.002 U	0.002 U F1	0.002 U	0.002 U	
Arsenic	T	mg/L	0.01	0.0025	0.0018	0.0016	0.0018	0.0016	0.0014	0.0016	0.0015	0.0015	0.0029	0.0016	0.0017	0.002	0.0019	0.0028	0.002 U	0.002 U	0.002 U	0.00219	
Barium	D	mg/L	2									0.116	0.132	0.13 B	0.116	0.122	0.138	0.165	0.13	0.128 F1	0.134	0.126	
Barium	T	mg/L	2	0.145	0.139	0.123	0.13	0.128	0.141	0.155	0.144	0.143	0.165	0.133	0.134	0.138	0.131	0.153	0.139	0.12	0.14	0.142	
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	
Boron	D	mg/L	2									1.41	0.875	7.33	0.619	0.908	0.591	0.645		0.556 F1	1.85	1.1	
Boron	T	mg/L	2	2.37	2.16	2.12	2.21	2.03	1.7	1.33	1.18	1.88	0.973	0.653	0.65	0.876	0.572	0.559		0.578	1.79	1.07	
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U	
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Calcium	D	mg/L	103.2									111	93.7	108	93.3 S	88.3	101 S	77.9	90.6	93.1 F1	110	102	
Calcium	T	mg/L	103.2	101 S	105	89.4	97.5	107	107	113	113	97.8	108 S	102	100	97.5 B	87.9	124	94.1	93.4	107	101	
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U	
Chromium	T	mg/L	0.1	0.0041	0.0025	0.0017	0.001 U	0.001 U	0.0027	0.0037	0.001 U	0.0015 U	0.0251	0.0043	0.0016	0.0015 U	0.0023	0.0033	0.00267	0.002 U	0.002 U	0.00762	
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	
Cobalt	T	mg/L	0.006	0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0008 J	0.0025	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.002 U	0.002 U	0.002 U	0.002 U	
Iron	D	mg/L	NS																0.1 U				
Iron	T	mg/L	NS									0.563							0.709				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U	
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0016	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311	0.0411	0.0333	0.0268	0.0264 F1	0.0277	0.0314	
Lithium	T	mg/L	0.04	0.0404	0.0403	0.0412	0.0406	0.0424	0.0416	0.0411	0.0397	0.036	0.0322	0.0293	0.0326	0.0314	0.0299	0.0298	0.029	0.0277	0.0284	0.0293	
Manganese	D	mg/L	NS																0.171				
Manganese	T	mg/L	NS									0.192							0.21				
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U	
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383	0.0503	0.0367	0.0461	0.037	0.0511 F1	0.0543	0.0502	
Molybdenum	T	mg/L	0.1	0.0891	0.084	0.0793	0.0812	0.0748	0.0714	0.0592	0.057	0.0788	0.0494	0.0406	0.0377	0.0449	0.0299	0.0347	0.0332	0.0494	0.0517	0.0458	
Nickel	D	mg/L	NS									0.0019		0.0017					0.00313				
Nickel	T	mg/L	NS	0.0065	0.0034	0.0029	0.002	0.002	0.0026	0.0039	0.003	0.0045		0.0051					0.00557				
Selenium	D	mg/L	0.05									0.0134	0.0101	0.001 U	0.009	0.0165	0.0096	0.0139	0.00962	0.0221 F1	0.0176	0.0172	
Selenium	T	mg/L	0.05	0.0158	0.015	0.0149	0.0161	0.014	0.013	0.0101	0.0102	0.0133	0.0111	0.0085	0.0099	0.0165	0.009	0.015	0.0105	0.0218	0.0188	0.0176	
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U	
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-II

				Sampled Prior to Closure of CCR Impoundment								Post-Closure Sampling	
			Sample ID	APW-5-2017090	APW-5-2017092	APW-5-2017101	APW-5-2017110	APW-5-2017112	APW-5-2017122	APW-5-2018011	APW-5-2018020	APW-05-WG-2022061	DUP-001-WG-2022061
			Location ID	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/29/2017	12/27/2017	01/18/2018	02/07/2018	06/16/2022	06/16/2022
			Sample Type	N	N	N	N	N	N	N	N	N	FD
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.34	0.34	0.32	0.32	0.32	0.33	0.36	0.32	0.35	0.33
Radium-226	NA	pCi/L	NS	0.37 ± 0.14 U	0.19 ± 0.1 U	0.133 ± 0.370	0.48 ± 0.15 U		0.35 ± 0.12 U	0.13 ± 0.1 U	0.26 ± 0.13 U	0.649 ± 0.316	0.259 ± 0.27 J
Radium-228	NA	pCi/L	NS	1.07 ± 0.8	0.89 ± 0.55 J	0.661 ± 0.418	1.17 ± 0.33		0.49 ± 0.42 U	1.04 ± 0.56	0.35 ± 0.4 U	1.1 ± 0.282	0.715 ± 0.31
Sulfate	NA	mg/L	400	407	460	399	413	381	394	439	378	224	239
CALC													
Radium-226/228	NA	pCi/L	7.002	1.44 ± 0.94 U	1.08 ± 0.65 U	0.794 ± 0.78	1.65 ± 0.48 U		0.84 ± 0.54 U	1.17 ± 0.66 U	0.61 ± 0.53 U	1.75 ± 0.424	0.973 ± 0.411
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]									51.8	
GEN CHEM													
Chloride	NA	mg/L	200	15	15	15	14	16	16	16	16	19	19
Dissolved Solids, Total	NA	mg/L	1200	842	832	804	826	790	792	552	804	650	690
pH, Lab	NA	pH units	6.22-9.0[2]	7.37	7.3	7.26	7.3	7.26	7.31	7.23	7.18	7.35	7.49
METALS													
Antimony	D	mg/L	0.006									0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.002	0.0021
Arsenic	T	mg/L	0.01	0.0031	0.0026	0.0015	0.0016	0.0016	0.0019	0.0021	0.0019	0.0048	0.0041
Barium	D	mg/L	2									0.133	0.132
Barium	T	mg/L	2	0.226	0.233	0.183	0.216	0.193	0.214	0.214	0.195	0.187	0.174
Beryllium	D	mg/L	0.004									0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
Boron	D	mg/L	2									7.63	7.7
Boron	T	mg/L	2	9.3	10.3	8.89	9.98	9.1	9.83	9.25	8.73	7.67	8.24 S
Cadmium	D	mg/L	0.005									0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									139	141
Calcium	T	mg/L	103.2	136	142	119	131	123	125	121	124	127	129 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0137	0.001 U	0.0041	0.001 U	0.001 U	0.0084	0.0033	0.001 U	0.0016 J	0.003 U
Cobalt	D	mg/L	0.006									0.0006 J	0.0005 J
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013 J	0.0011 J
Iron	D	mg/L	NS										
Iron	T	mg/L	NS									2.77	1.89
Lead	D	mg/L	0.0075									0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0282	0.029
Lithium	T	mg/L	0.04	0.0363	0.0443	0.0393	0.0405	0.0415	0.0433	0.0404	0.0397	0.0331	0.0363
Manganese	D	mg/L	NS										
Manganese	T	mg/L	NS									0.9	0.904
Mercury	D	mg/L	0.002										
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.172	0.17
Molybdenum	T	mg/L	0.1	0.172	0.195	0.201	0.168	0.193	0.246	0.244	0.249	0.203	0.195
Nickel	D	mg/L	NS									0.0036	0.0035
Nickel	T	mg/L	NS	0.0074	0.0012	0.0023	0.001 U	0.001 U	0.0043	0.0021	0.001 U	0.0037	0.0039
Selenium	D	mg/L	0.05									0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U

				Post-Closure Sampling									
			Sample ID	APW-05-WG-2022091	DUP-001-WG-2022091	APW-05-WG-2022112	DUP-01-WG-2022112	APW-05-WG-2023020	DUP-01-WG-2023020	APW-05R-WG-2023062	DUP-01-WG-2023062	APW-05R-WG-2023092	DUP-01-WG-2023092
			Location ID	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]
			Sample Date	09/14/2022	09/14/2022	11/28/2022	11/28/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023	09/20/2023	09/20/2023
			Sample Type	N	FD	N	FD	N	FD	N	FD	N	FD
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.33	0.31	0.37	0.38	0.33	0.33	0.3	0.32	0.35	0.34
Radium-226	NA	pCi/L	NS	0.17 ± 0.08 U	0.11 ± 0.07 U	0.11 ± 0.11 U	0.17 ± 0.08 U	0.209 ± 0.245 J	0.205 ± 0.241 J	0.23 ± 0.1 U	0.11 ± 0.08 U	0.49 ± 0.13 U	0.36 ± 0.13 U
Radium-228	NA	pCi/L	NS	0.82 ± 0.88 J	0.27 ± 0.55 U	0.49 ± 0.49 U	1.24 ± 0.71	0.399 ± 0.422 J	0.249 ± 0.228 J	0.31 ± 0.5 UODR	0.61 ± 0.67 U	5.85 ± 1.14 *	0.42 ± 0.71 U
Sulfate	NA	mg/L	400	379	403	324	338	325	305	335	326	343	333
CALC													
Radium-226/228	NA	pCi/L	7.002	0.99 ± 0.96 U	0.38 ± 0.62 U	0.6 ± 0.6 U	1.41 ± 0.79 U	0.608 ± 0.488 J	0.454 ± 0.332 J	0.54 ± 0.6 U	0.72 ± 0.75 U	6.34 ± 1.53	0.78 ± 0.84 U
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]	9.19		4.65		8.21		42.6		33.7	
GEN CHEM													
Chloride	NA	mg/L	200	15	15	19	19	18	18	17	18	14	14
Dissolved Solids, Total	NA	mg/L	1200	750 H	774 H	714	728 H	696	670	740	695	680	710
pH, Lab	NA	pH units	6.22-9.0[2]	7.55	7.57	7.24	7.27	7.31	7.33	7.27 H	7.3 H	7.36 H	7.36 H
METALS													
Antimony	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01	0.001	0.001	0.001 U	0.0019	0.0026	0.0018	0.0024	0.0025	0.0023	0.0024
Arsenic	T	mg/L	0.01	0.0025	0.0023	0.0022	0.0023	0.0024	0.0025	0.003	0.003	0.0028	0.0026
Barium	D	mg/L	2	0.13	0.128	0.172 B	0.13 B	0.175	0.135	0.168	0.167	0.167	0.172
Barium	T	mg/L	2	0.154	0.152	0.14	0.136	0.145	0.148	0.183	0.181	0.162	0.158
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2	7.42	7.09	6.12	7.03 S	8.68 S	6.76	8.64	8.37	7.91	8.05
Boron	T	mg/L	2	7.76	7.62	7.48	7.97	7.35	7.59	8.76	8.68	7.12	8.33 S
Cadmium	D	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2	119	131	87.4	110 S	106 S	111	120	120	118	119
Calcium	T	mg/L	103.2	127	137	117	118	112	114	136 B	133 B	105	126 S
Chromium	D	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0015 U	0.0015 U	0.0015 U	0.0016	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0021	0.0016
Cobalt	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	D	mg/L	NS										
Iron	T	mg/L	NS										
Lead	D	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001	0.0026	0.0021
Lithium	D	mg/L	0.04	0.0381	0.0373	0.0338	0.0365	0.045	0.0375	0.0384	0.0398	0.0624	0.0509
Lithium	T	mg/L	0.04	0.0408	0.0397	0.0373	0.0371	0.0399	0.0402	0.0423	0.0415	0.0367	0.0425
Manganese	D	mg/L	NS										
Manganese	T	mg/L	NS										
Mercury	D	mg/L	0.002	0.0002 U	0.0002 U								
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1	0.213	0.206	0.293	0.211 S	0.187	0.199	0.213	0.204	0.235	0.233
Molybdenum	T	mg/L	0.1	0.235	0.224	0.223	0.226	0.217	0.212	0.212	0.21	0.223	0.235
Nickel	D	mg/L	NS			0.0011	0.0024						
Nickel	T	mg/L	NS			0.002	0.0029						
Selenium	D	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

				Post-Closure Sampling									
			Sample ID	APW-05R-WG-2023112	DUP-01-WG-2023112	APW-05R-WG-2024011	DUP-01-WG-2024011	APW-05R-WG-20240501	DUP-01-WG-20240501	APW-05R-WG-2024090	DUP-01-WG-2024090	APW-05R-WG-2024101	DUP-01-WG-20241016
			Location ID	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R[4]	APW-05R	APW-05R
			Sample Date	11/28/2023	11/28/2023	01/10/2024	01/10/2024	05/01/2024	05/01/2024	09/05/2024	09/05/2024	10/16/2024	10/16/2024
			Sample Type	N	FD	N	FD	N	FD	N	FD	N	FD
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]										
UNSPECIFIED													
Fluoride	NA	mg/L	4	0.38	0.35	0.298	0.317	0.15 U	0.301	0.347	0.342	0.199	0.177
Radium-226	NA	pCi/L	NS	0.15 ± 0.06 U	0.05 ± 0.04 U	0.303 ± 0.271 J	0.297 ± 0.208	0.18 ± 0.189 J	0.427 ± 0.329	0.0135 ± 0.0835 U	1.33 ± 0.415	0.261 ± 0.188	0 ± 0.130 U
Radium-228	NA	pCi/L	NS	0.73 ± 0.57 J	0.75 ± 0.67 J	3.55 ± 0.372	0.885 ± 0.244	0.94 ± 0.271	1.08 ± 0.284	0.46 ± 0.343 J	1.1 ± 0.203	0.468 ± 0.329 J	0.498 ± 0.226
Sulfate	NA	mg/L	400	330	321	306	305	365	368	70.5	70.6	192	191
CALC													
Radium-226/228	NA	pCi/L	7.002	0.88 ± 0.63 U	0.8 ± 0.71 U	3.86 ± 0.460	1.18 ± 0.321	1.12 ± 0.330	1.5 ± 0.435	0.473 ± 0.353 J	2.43 ± 0.462	0.73 ± 0.379	0.498 ± 0.261
FIELD PARAM													
Turbidity, Field	NA	NTU	17.96[1]	76.1		38.9		8.02		64.1		23.4	
GEN CHEM													
Chloride	NA	mg/L	200	16	16	16.0	17	15.8	16.1	28.1	28.1	19.0	18.7
Dissolved Solids, Total	NA	mg/L	1200	705	690	677	691	764	740	354	359	560	543
pH, Lab	NA	pH units	6.22-9.0[2]	7.33 H	7.34 H	7.42 T8	7.82 T8	7.6 T8	7.62 T8	7.56 T8	7.56 T8	7.53 T8	7.54 T8
METALS													
Antimony	D	mg/L	0.006	0.001 U	0.001 SU	0.004 U	0.004 U	0.004 U F1	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01	0.0029	0.0018	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.00215	0.00201	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.0042	0.0031	0.0022	0.00228	0.00228	0.00235	0.00305	0.003	0.00236	0.00374
Barium	D	mg/L	2	0.186	0.127	0.113	0.114	0.161 F1	0.151 F1	0.0718	0.072	0.116	0.117
Barium	T	mg/L	2	0.225	0.158	0.151	0.153	0.195	0.19	0.102	0.0999	0.158	0.166
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2	8.71	6.44 S			8.86 F1	8.89 F1	2.23	2.22	6.29	6.28
Boron	T	mg/L	2	9.62	6.77			9.28	9.26	2.18	2.17	6.19	6.23
Cadmium	D	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U F1	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2	98.4	91.9 S	112	111	142 F1	142 F1	76.7	76.5	111	112
Calcium	T	mg/L	103.2	97.1	134	114	115	141	139	74	73.3	111	112
Chromium	D	mg/L	0.1	0.0015 U	0.0015 SU	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.002	0.0023	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00211
Cobalt	D	mg/L	0.006	0.001 U	0.001 SU	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS			0.1 U	0.1 U						
Iron	T	mg/L	NS			5.89	5.91						
Lead	D	mg/L	0.0075	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.002	0.0014	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00237	0.002 U
Lithium	D	mg/L	0.04	0.0455	0.0343	0.0377	0.039	0.0362 F1	0.0394 F1	0.0172	0.0175	0.0316	0.0303
Lithium	T	mg/L	0.04	0.0523	0.0371	0.0388	0.0404	0.0385	0.0377	0.0179	0.0176	0.0314	0.0304
Manganese	D	mg/L	NS			0.548	0.537						
Manganese	T	mg/L	NS			0.554 V	0.553						
Mercury	D	mg/L	0.002			0.0002 U	0.0002 U	0.0002 U F1	0.0002 U F1	0.0002 U	0.000207	0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1	0.282	0.192	0.235	0.235	0.213 F1	0.215 F1	0.11	0.111	0.168	0.165
Molybdenum	T	mg/L	0.1	0.203	0.215	0.227	0.231	0.221	0.214	0.109	0.107	0.164	0.165
Nickel	D	mg/L	NS			0.002 U	0.002 U						
Nickel	T	mg/L	NS			0.002 U	0.002 U						
Selenium	D	mg/L	0.05	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated
3 Eight episodes of groundwater sampling were conducted from September
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling							
			Sample ID	APW-6D-20170907	APW-6D-20170927	APW-6D-20171019	APW-6D-20171109	APW-6D-20171128	APW-6D-20171227	APW-6D-20180118	APW-6D-20180208	APW-06D-WG-20220913	APW-06D-WG-20221128	APW-06D-WG-20230201	APW-06D-WG-20230627	APW-06D-WG-20230920	APW-06D-WG-20231128	APW-06D-WG-20240110	APW-06D-WG-20240501	APW-06D-WG-20240905	APW-06D-WG-20241016
			Location ID	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023	01/10/2024	05/01/2024	09/05/2024	10/16/2024
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter / Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																		
UNSPECIFIED																					
Fluoride	NA	mg/L	4	0.22	0.23	0.21	0.22	0.21	0.22	0.23	0.21	0.2	0.24	0.21	0.2	0.22	0.24	0.212	0.15 U	0.205	0.15 U
Radium-226	NA	pCi/L	NS	0.62 ± 0.17 U	0.37 ± 0.11 U	1.22 ± 0.744	0.39 ± 0.15 U	0.38 ± 0.18 U	0.3 ± 0.12 U	0.03 ± 0.08 U	0.2 ± 0.13 U	0.31 ± 0.1 U	0.62 ± 0.15 U	0.355 ± 0.275	0.3 ± 0.12 U	0.18 ± 0.09 U	0.11 ± 0.05 U	0.582 ± 0.361	0.422 ± 0.235	0.447 ± 0.249	0.258 ± 0.255 J
Radium-228	NA	pCi/L	NS	1.07 ± 0.65	0.61 ± 0.33 U	0.549 ± 0.377	0.86 ± 0.37 J	1.4 ± 0.71	0.78 ± 0.48 J	0.74 ± 0.57 J	0.24 ± 0.34 U	1.46 ± 0.71	0.28 ± 0.43 U	1.02 ± 0.451	0.74 ± 0.54 J	2.62 ± 0.76	0.76 ± 0.6 J	1.24 ± 0.276	1.1 ± 0.285	1.83 ± 0.372	0.642 ± 0.345
Sulfate	NA	mg/L	400	215	228	206	222	230	236	211	189	272	254	269	270	218	184	180	184	242	214
CALC																					
Radium-226/228	NA	pCi/L	7.002	1.69 ± 0.82 U	0.98 ± 0.44 U	1.77 ± 1.12	1.12 ± 0.51 U	1.78 ± 0.89 U	1.08 ± 0.6 U	0.77 ± 0.65 U	0.44 ± 0.47 U	1.77 ± 0.81 U	0.9 ± 0.58 U	1.38 ± 0.528	1.04 ± 0.66 U	2.8 ± 0.85	0.87 ± 0.65 U	1.82 ± 0.454	1.52 ± 0.369	2.27 ± 0.448	0.9 ± 0.429
FIELD PARAM																					
Turbidity, Field	NA	NTU	17.98[3]									18.5	74.4	26.9	181	65.5	3.02	18.2	35.8	21.8	8.39
GEN CHEM																					
Chloride	NA	mg/L	200	17	17	16	16	16	16	17	17	14	17	16	15	16	22	21.2	21.5	15	14.7
Dissolved Solids, Total	NA	mg/L	1200	558	560	562	564	590	516 R	482	584	670 H	580	582	735	565	560	536	549	624	568
pH, Lab	NA	pH units	6.22-9.0[2]	7.23	7.25	7.23	7.19	7.2	7.22	7.21	7.2	7.42	7.21	7.29	7.39 H	7.3 H	7.36 H	7.73 T8	7.54 T8	7.46 T8	7.42 T8
METALS																					
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01			0.012						0.004	0.0116	0.012	0.0102	0.01	0.0161	0.00451	0.00585 F1	0.00479	0.00485
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	0.0104	0.0111	0.0107	0.0115	0.0109	0.0135	0.0102	0.0108	0.0103	0.0103
Barium	D	mg/L	2									0.129	0.118 B	0.152	0.13	0.121	0.185	0.106	0.115 F1	0.121	0.113
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	0.143	0.142	0.134	0.145	0.128	0.151	0.115	0.119	0.129	0.119
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									5.32	4.14	4.39	5.01	3.77	4.67		2.98 F1	4.36	4.03
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	5.51	4.29	3.95	4.99	3.81	3.8		3.13	4.31	3.99
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									118	105	109	118	114	80.3	106	114 F1	130	118
Calcium	T	mg/L	103.2	99.9	110	96.7	100	110	107	105 S	105	123	110	116	128 B	106	98.4	111	114	124	120
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.001 U	0.0013	0.001 U	0.001 U	0.001 U	0.0017	0.003	0.0014	0.0015 U	0.0063	0.0015 U	0.0057	0.0727	0.0015 U	0.00861	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.0013	0.0012	0.001	0.001 U	0.001 U	0.0012	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.0012	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0035	0.0013	0.0054	0.0035	0.0013	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS															0.1 U			
Iron	T	mg/L	NS															3.65			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.001 U	0.0016	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0179	0.0155	0.0194	0.016	0.0197	0.0241	0.0161	0.0159 F1	0.0156	0.0173
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0162	0.0185	0.0175	0.0172	0.0184	0.0169	0.0199	0.0173	0.0171	0.0163	0.0168
Manganese	D	mg/L	NS															0.611			
Manganese	T	mg/L	NS															0.622			
Mercury	D	mg/L	0.002									0.0002 U						0.0002 U	0.0002 U F1	0.000209	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0669	0.0796	0.0583	0.0643	0.0559	0.0949	0.0617	0.0748 F1	0.0647	0.0542
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0582	0.0589	0.06	0.0584	0.0465	0.0463	0.0719	0.0696	0.0683	0.0602	0.0672	0.0557	0.0605	0.072	0.0628	0.0527
Nickel	D	mg/L	NS										0.002					0.00219			
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025		0.0093					0.00825			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling								
			Sample ID	APW-6S-20170907	APW-6S-20170928	APW-6S-20171019	APW-6S-20171109	APW-6S-20171128	APW-6S-20171227	APW-6S-20180118	APW-6S-20180208	APW-6S-WG-20220616	APW-06S-WG-20220913	APW-06S-WG-20221128	APW-06S-WG-20230201	APW-06S-WG-20230627	APW-06S-WG-20230920	APW-06S-WG-20231128	APW-06S-WG-20240110	APW-06S-WG-20240501	APW-06S-WG-20240905	**APW-06S-WG-20241016**
			Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	**APW-06S**
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023	01/10/2024	05/01/2024	09/05/2024	**10/16/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[4]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.41	0.26	0.25	0.26	0.25	0.25	0.27	0.24	0.29	0.28	0.32	0.29	0.26	0.3	0.33	0.277	0.15 U	0.242	0.15 U
Radium-226	NA	pCi/L	NS	0.36 ± 0.14 U	0.09 ± 0.08 U	0.317 ± 0.331	0.22 ± 0.11 U	0.18 ± 0.13 U	0.11 ± 0.09 U	0.09 ± 0.09 U	0.15 ± 0.11 U	0.269 ± 0.182	0.2 ± 0.08 U	0.19 ± 0.09 U	0.0283 ± 0.232 U	0.11 ± 0.08 U	0.32 ± 0.11 U	0.09 ± 0.05 U	1.25 ± 0.411	0.707 ± 0.335	0.31 ± 0.217	0.0841 ± 0.233 U
Radium-228	NA	pCi/L	NS	0.56 ± 0.77 U	1.08 ± 0.53	0.481 ± 0.316	0.9 ± 0.4 J	0.92 ± 0.6 J	0.44 ± 0.44 U	0.71 ± 0.53 J	0.89 ± 0.38 J	0.228 ± 0.248 J	2.73 ± 0.9	0.41 ± 0.5 U	1.44 ± 0.518	-0.03 ± 0.59 U	0.41 ± 0.38 U	0.29 ± 0.51 U	0.688 ± 0.243	0.951 ± 0.345	0.667 ± 0.386 J	0.895 ± 0.221
Sulfate	NA	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247	208	223	237	240	211	133	148
CALC																						
Radium-226/228	NA	pCi/L	7.002	0.92 ± 0.93 U	1.15 ± 0.61 U	0.798 ± 0.647	1.25 ± 0.52 U	1.1 ± 0.73 U	0.55 ± 0.53 U	0.8 ± 0.62 U	1.04 ± 0.49 U	0.497 ± 0.308	2.93 ± 0.98	0.6 ± 0.59 U	1.47 ± 0.568	0.11 ± 0.67 U	0.73 ± 0.49 U	0.38 ± 0.56 U	1.93 ± 0.477	1.66 ± 0.481	0.977 ± 0.443	0.979 ± 0.321
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.96[1]									30.5	15.1	5.56	6.67	9.06	8.99	1.26	3.32	3.81	5.09	5.72
GEN CHEM																						
Chloride	NA	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24	23	20	22	21.2	21.6	21.1	19.4
Dissolved Solids, Total	NA	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638	615	565	635	644	678 Q	599	599
pH, Lab	NA	pH units	6.22-9.0[2]	7.16	7.06	7.18	7.23	7.09	7.13	7.09	7.02	7.24	7.38	7.04	7.12	7.05 H	7.21 H	7.12 H	7.87 T8	7.35 T8	7.2 T8	7.27 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U	0.001 U	0.0013	0.001	0.001 U	0.0019	0.002 U	0.002 U F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.0017	0.0016	0.0018	0.002	0.0013	0.0012	0.0011	0.0011	0.0009 J	0.0012	0.001	0.0011	0.001 U	0.0012	0.0016	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.233	0.146	0.19 B	0.219	0.21	0.216	0.269	0.155	0.199 F1	0.18	0.382
Barium	T	mg/L	2	0.222	0.237	0.205	0.226	0.214	0.213	0.224	0.205	0.25	0.221	0.19	0.202	0.224	0.206	0.305	0.204	0.23	0.232	0.233
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									4.92	5.95	6.88	7.12	6.83	6.65	8.41		5.36 F1	4.1	4.6
Boron	T	mg/L	2	4.65	5.93	5.83	5.64 S	5.8	6.93 S	7.42	6.66	4.77	6.61	6.31	8.84 S	5.84	5.79	9.19		5.54	4.05	4.58
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									124	93.7	98	94.1	100	107	88.8	100 V	120 F1	136	132
Calcium	T	mg/L	103.2	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4	115	105	103	97.1 S	109 R	92.7	90	101	120	131	126
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0027	0.0173	0.0028	0.001 U	0.001 U	0.0048	0.0012	0.001 U	0.0028	0.0015 U	0.0022	0.0015 U	0.0019	0.0067	0.0015 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									9.35							9.18			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0028	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0405	0.0411	0.0487	0.0498	0.0383	0.038 F1	0.0318	0.0393
Lithium	T	mg/L	0.04	0.0335	0.0413	0.04	0.0415	0.042	0.0458	0.0451	0.0417	0.0363	0.041	0.0393	0.0406	0.0412	0.0369	0.0564	0.0421	0.0408	0.032	0.037
Manganese	D	mg/L	NS																0.478			
Manganese	T	mg/L	NS									0.53							0.512			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.000221	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.229	0.235	0.24	0.244	0.232	0.234	0.309	0.26	0.24 F1	0.178	0.189
Molybdenum	T	mg/L	0.1	0.249	0.287	0.272	0.243	0.274	0.314	0.324	0.323	0.237	0.271	0.259	0.265	0.235	0.225	0.297	0.255	0.231	0.178	0.187
Nickel	D	mg/L	NS									0.0015		0.001 U					0.002 U			
Nickel	T	mg/L	NS	0.0021	0.009	0.0021	0.0012	0.001 U	0.0031	0.0016	0.0012	0.0027		0.0023					0.002 U			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling								
			Sample ID	APW-7-20170907	APW-7-20170928	APW-7-20171019	APW-7-20171109	APW-7-20171128	APW-7-20171227	APW-7-20180118	APW-7-20180208	APW-07-WG-20220616	APW-07-WG-20220914	APW-07-WG-20221130	APW-07-WG-20230130	APW-07-WG-20230626	APW-07-WG-20230919	APW-07-WG-20231128	APW-07-WG-20240111	APW-07-WG-20240430	APW-07-WG-20240904	**APW-07-WG-20241016**
			Location ID	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	**APW-07**
			Sample Date	09/07/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/14/2022	11/30/2022	01/30/2023	06/26/2023	09/19/2023	11/28/2023	01/11/2024	04/30/2024	09/04/2024	**10/16/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter / Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.35	0.21	0.19	0.2	0.2	0.19	0.2	0.18	0.18	0.17	0.18	0.19	0.17	0.18	0.2	0.172	0.15 U	0.199 P1	0.15 U
Radium-226	NA	pCi/L	NS	0.47 ± 0.15 U	0 ± 0.06 U	0.505 ± 0.396	0.11 ± 0.08 U	0.16 ± 0.14 U	0.25 ± 0.1 U	0.14 ± 0.09 U	0.24 ± 0.14 U	0.333 ± 0.208	0.18 ± 0.09 U	0.2 ± 0.11 U	0.337 ± 0.265	-0.01 ± 0.06 U	0.11 ± 0.07 U	0.16 ± 0.06 U	0.775 ± 0.378	0.617 ± 0.356	0.197 ± 0.174	0.232 ± 0.212 J
Radium-228	NA	pCi/L	NS	-0.42 ± 0.79 U	0.76 ± 0.61 J	0.785 ± 0.412	1.13 ± 0.39	0.61 ± 0.51 U	0.14 ± 0.35 U	1.19 ± 0.55	0.53 ± 0.4 U	0.766 ± 0.234	1.45 ± 0.72	1.13 ± 0.66	1.77 ± 0.352	1.11 ± 0.74	0.99 ± 0.62 JQDR	0.45 ± 0.57 U	1.93 ± 0.264	0.803 ± 0.291	0.736 ± 0.361	1.77 ± 0.347
Sulfate	NA	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48	54	44	40	68.8	56.3	34.7 J6	46.3
CALC																						
Radium-226/228	NA	pCi/L	7.002	0.47 ± 0.94 U	0.76 ± 0.67 U	1.29 ± 0.808	1.24 ± 0.47 U	0.77 ± 0.65 U	0.39 ± 0.45 U	1.33 ± 0.64 U	0.77 ± 0.54 U	1.1 ± 0.313	1.63 ± 0.81 U	1.33 ± 0.77 U	2.1 ± 0.441	1.11 ± 0.8 U	1.1 ± 0.69 U	0.61 ± 0.63 U	2.7 ± 0.461	1.42 ± 0.460	0.933 ± 0.401	2.01 ± 0.407
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.98[3]									66.2	34.8	10.5	79.2	14.8	42.9	21	4.36	3.34	5.27	6.88
GEN CHEM																						
Chloride	NA	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14	10	9	11	11.5	9.63	11.5	9.63
Dissolved Solids, Total	NA	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824	685	740	790	734	737	673	741
pH, Lab	NA	pH units	6.22-9.0[2]	6.84	6.84	6.86	6.87	6.83	6.96	6.97	6.88	6.88	7.02	6.78	7.23	6.79 H	6.94 H	6.86 H	7.31 T8	7.02 T8	7.03 T8	6.93 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.001 U	0.001 U	0.0012	0.0013	0.0016	0.002 U	0.002 U F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.0014	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0023	0.0016	0.0011	0.0014	0.0014	0.0018	0.0022	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.334	0.255	0.354 B	0.411	0.303	0.336	0.465	0.256	0.28 F1	0.252	0.265
Barium	T	mg/L	2	0.465	0.448	0.394	0.401	0.37	0.374	0.38	0.359	0.374	0.382	0.381	0.371	0.312	0.303	0.522	0.36	0.349	0.309	0.351
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.148	0.193	0.199	0.267	0.208	0.192	0.243		0.2 U F1	0.505	0.225
Boron	T	mg/L	2	0.235	0.308	0.302	0.3	0.278	0.342	0.298	0.318	0.168	0.208	0.217	0.246	0.237	0.181	0.274		0.2 U	0.526	0.228
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									222	199	204	199	180 S	196	162	203	216 F1	185	171
Calcium	T	mg/L	103.2	192	204	171	187	196	193	191	185	238	210	209	200	183 BS	161	177	209	213	192	210
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0017	0.0063	0.0026	0.001 U	0.001 U	0.0329	0.001 U	0.001 U	0.0041	0.0021	0.0015 U	0.0034	0.0015 U	0.0057	0.0024	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									17.3							18.9			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0074	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191	0.0138	0.0184	0.0212	0.0176	0.0167 F1	0.0151	0.0173
Lithium	T	mg/L	0.04	0.0147	0.0181	0.0172	0.0176	0.0185	0.0191	0.0181	0.0178	0.0143	0.0161	0.0166	0.0181	0.0153	0.0141	0.0231	0.019	0.0174	0.0152	0.0169
Manganese	D	mg/L	NS																1.16			
Manganese	T	mg/L	NS									1.11							1.19			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0026	0.0026	0.0021	0.0027	0.0027	0.0029	0.004	0.005 U	0.005 U F1	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.0046	0.0036	0.0033	0.0023	0.003	0.0044	0.0037	0.0036	0.0035	0.003	0.0029	0.0031	0.0028	0.0029	0.0042	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0008 J		0.001 U					0.002 U			
Nickel	T	mg/L	NS	0.0014	0.0033	0.0013	0.001 U	0.001 U	0.015	0.001 U	0.001 U	0.0042		0.001 U					0.002 U			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
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NA = not applicable
T = total
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mg/L = milligrams per liter
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S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment									Post-Closure Sampling									
			Sample ID	APW-8-20170907	APW-8-20170928	APW-8-20171018	APW-8-20171108	APW-8-20171127	APW-8-20171227	APW-8-20180117	APW-8-20180208	APW-08-WG-20220616	APW-08-WG-20220915	APW-08-WG-20221130	APW-08-WG-20230202	APW-08-WG-20230626	APW-08-WG-20230919	APW-08-WG-20231128	APW-08-WG-20240111	APW-08-WG-20240430	APW-08-WG-20240904	**APW-08-WG-20241016**
			Location ID	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	**APW-08**
			Sample Date	09/07/2017	09/28/2017	10/18/2017	11/08/2017	11/27/2017	12/27/2017	01/17/2018	02/08/2018	06/16/2022	09/15/2022	11/30/2022	02/02/2023	06/26/2023	09/19/2023	11/28/2023	01/11/2024	04/30/2024	09/04/2024	**10/16/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter / Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.3	0.3	0.29	0.29	0.28	0.28	0.3	0.28	0.29	0.26	0.28	0.26	0.26	0.26	0.29	0.232	0.336	0.254	0.15 U
Radium-226	NA	pCi/L	NS	0.22 ± 0.12 U	0.12 ± 0.08 U	0.2 ± 0.393	0.11 ± 0.1 U	0.35 ± 0.16 U	0.14 ± 0.08 U	0.21 ± 0.11 U	0.39 ± 0.15 U	0.208 ± 0.236 J	0.27 ± 0.1 U	0.4 ± 0.13 U	0.247 ± 0.244 J	0.34 ± 0.12 U	0.23 ± 0.09 U	0.1 ± 0.05 U	1.71 ± 0.459	0.341 ± 0.271	0.296 ± 0.200	0.171 ± 0.182 J
Radium-228	NA	pCi/L	NS	1.13 ± 0.63	0.88 ± 0.48 J	1.3 ± 0.545	0.37 ± 0.25 U	0.77 ± 0.55 J	1.31 ± 0.58	0.64 ± 0.49 U	0.49 ± 0.43 U	0.526 ± 0.224	0.86 ± 0.62 J	1.68 ± 0.77	-0.157 ± 0.282 U	0.11 ± 0.6 U	0.81 ± 0.49 JQDR	0.15 ± 0.54 U	0.687 ± 0.215	-0.254 ± 0.268 U	0.959 ± 0.240	0.874 ± 0.414
Sulfate	NA	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31	23	24	24.7	28.6	33.4 J6	29.4
CALC																						
Radium-226/228	NA	pCi/L	7.002	1.35 ± 0.75 U	1 ± 0.56 U	1.5 ± 1.61	0.48 ± 0.35 U	1.12 ± 0.71 U	1.45 ± 0.66 U	0.85 ± 0.6 U	0.88 ± 0.58 U	0.735 ± 0.325	1.13 ± 0.72 U	2.08 ± 0.9	0.247 ± 0.373 J	0.45 ± 0.72 U	1.04 ± 0.58 U	0.25 ± 0.59 U	2.39 ± 0.507	0.341 ± 0.381 J	1.26 ± 0.312	1.04 ± 0.452
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.98[3]									119	139	305	26.9	152	141	169	23.1	136	97.4	47.5
GEN CHEM																						
Chloride	NA	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10	10	11	10.6	10.2	8.97	8.61
Dissolved Solids, Total	NA	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378	420	440	395	370	371	393	403
pH, Lab	NA	pH units	6.22-9.0[2]	7.04	7.07	7	7.12	7.25	7.11	7.04	7.04	7.34	7.47	7.25	7.31	7.18 H	7.16 H	7.27 H	7.68 T8	7.53 T8	7.2 T8	7.33 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001	0.001	0.0014	0.0019	0.002 U	0.002 U F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.0022	0.0015	0.0017	0.0016	0.002	0.0018	0.0025	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.194	0.163	0.146 B	0.15	0.191	0.236	0.255	0.17	0.172 F1	0.194	0.188
Barium	T	mg/L	2	0.207	0.256	0.219	0.24	0.217	0.223	0.226	0.215	0.235	0.19	0.179	0.167	0.225	0.199	0.261	0.17	0.173	0.197	0.192
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895	0.124	0.117	0.154		0.2 U F1	0.2 U	0.2 U
Boron	T	mg/L	2	0.132	0.154	0.135	0.138	0.141	0.145	0.151	0.132	0.115	0.11	0.103	0.095	0.103	0.116	0.155		0.2 U	0.2 U	0.2 U
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									108	79.7	75.4	72.1	92.6	94.1 S	71.3	83.1	88.4 F1	94.9	99.9
Calcium	T	mg/L	103.2	97.4	105	92.6	101	102	98.6	95	97.8	93.3	85.1	82.8	79.4	99.4 B	86.4	81.2	82.8	87.8	98.3	102
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0018	0.0023	0.001 U	0.0059	0.001 U	0.0021	0.001 U	0.001 U	0.0054	0.0016	0.0036	0.0027	0.0082	0.0031	0.0049	0.002 U	0.002 U	0.002 U	0.00738
Cobalt	D	mg/L	0.006									0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.0017	0.0013	0.001	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.0013	0.0016	0.0012	0.0019	0.0014	0.0021	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									3.14							0.44			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0024	0.001 U	0.0012	0.001 U	0.0028	0.0015	0.0018	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131	0.0125	0.022	0.0204	0.0134	0.0137 F1	0.0168	0.0136
Lithium	T	mg/L	0.04	0.0196	0.0206	0.0207	0.0216	0.0223	0.0216	0.0192	0.0196	0.016	0.016	0.0147	0.0155	0.0157	0.0177	0.0211	0.0142	0.0147	0.0173	0.0187
Manganese	D	mg/L	NS																0.0443			
Manganese	T	mg/L	NS									0.202							0.0435			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0008 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U F1	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.0011	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0023		0.0012					0.00227			
Nickel	T	mg/L	NS	0.0039	0.0043	0.0029	0.0062	0.0026	0.0027	0.0026	0.0026	0.0054		0.0077					0.00354			
Selenium	D	mg/L	0.05									0.0027	0.0068	0.0126	0.0128	0.0113	0.0121	0.0231	0.0173	0.0185 F1	0.00425	0.0193
Selenium	T	mg/L	0.05	0.008	0.0141	0.0132	0.0149	0.0135	0.0141	0.0149	0.013	0.0036	0.0077	0.011	0.0148	0.0129	0.0122	0.0221	0.0169	0.0182	0.00529	0.0187
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]	APW-9-20170907	APW-9-20170927	APW-9-20171018	APW-9-20171108	APW-9-20171127	APW-9-20171228	APW-9-20180117	APW-9-20180208
				Sampled Prior to Closure of CCR Impoundment							
			Location ID	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09
			Sample Date	09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/08/2018
			Sample Type	N	N	N	N	N	N	N	N
UNSPECIFIED											
Fluoride	NA	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19
Radium-226	NA	pCi/L	NS	0.17 ± .12 U	0.03 ± 0.07 U	-0.229 ± 0.389	0.14 ± 0.09 U	-0.06 ± 0.1 U	0.14 ± 0.08 U	0.05 ± 0.08 U	0.13 ± 0.13 U
Radium-228	NA	pCi/L	NS	0.91 ± .69 J	0.67 ± 0.56 U	0.275 ± 0.316	0.49 ± 0.29 U	1.07 ± 0.48 U	1.06 ± 0.51	0.46 ± 0.46 U	0.23 ± 0.37 U
Sulfate	NA	mg/L	400	65	47	53	65	50	42	28	25
CALC											
Radium-226/228	NA	pCi/L	7.002	1.08 ± 0.81 U	0.7 ± 0.63 U	0.275 ± 0.705	0.63 ± 0.38 U	1.07 ± 0.58 U	1.2 ± 0.59 U	0.51 ± 0.54 U	0.36 ± 0.5 U
FIELD PARAM											
Turbidity, Field	NA	NTU	17.96[1]								
GEN CHEM											
Chloride	NA	mg/L	200	13	13	13	13	13	13	13	768
Dissolved Solids, Total	NA	mg/L	1200	364 R	372	324	366	392	278	348	3380
pH, Lab	NA	pH units	6.22-9.0[2]	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33
METALS											
Antimony	D	mg/L	0.006								
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01								
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125
Beryllium	D	mg/L	0.004								
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2								
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255
Cadmium	D	mg/L	0.005								
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2								
Calcium	T	mg/L	103.2	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92
Chromium	D	mg/L	0.1								
Chromium	T	mg/L	0.1	0.0148	0.0021	0.001 U	0.001 U	0.001 U	0.0011	0.0016	0.001 U
Cobalt	D	mg/L	0.006								
Cobalt	T	mg/L	0.006	0.0031	0.0014	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	D	mg/L	NS								
Iron	T	mg/L	NS								
Lead	D	mg/L	0.0075								
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04								
Lithium	T	mg/L	0.04	0.0176	0.0173	0.0174	0.018	0.0167	0.0173	0.0155	0.0148
Manganese	D	mg/L	NS								
Manganese	T	mg/L	NS								
Mercury	D	mg/L	0.002								
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1								
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224
Nickel	D	mg/L	NS								
Nickel	T	mg/L	NS	0.012	0.0032	0.001 U	0.001	0.001 U	0.001 U	0.0012	0.001 U
Selenium	D	mg/L	0.05								
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134
Thallium	D	mg/L	0.002								
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U

Parameter/Analyte	Total or Dissolved	APW-09-WG-20220615	APW-09-WG-20220913	APW-09-WG-20221130	APW-09-WG-20230201	APW-09-WG-20230627	APW-09-WG-20230920	DUP-02-WG-20230920	APW-09-WG-20231129	DUP-02-WG-20231129
		Post-Closure Sampling								
Location ID		APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09
Sample Date		06/15/2022	09/13/2022	11/30/2022	02/01/2023	06/27/2023	09/20/2023	09/20/2023	11/29/2023	11/29/2023
Sample Type		N	N	N	N	N	N	FD	N	FD
UNSPECIFIED										
Fluoride	NA	0.23	0.19	0.2	0.19	0.19	0.2	0.19	0.2	0.21
Radium-226	NA	0.267 ± 0.199	0.24 ± 0.09 U	0.06 ± 0.06 U	0.0975 ± 0.156 J	0.18 ± 0.09 U	0 ± 0.05 U	-0.02 ± 0.05 U	0 ± 0.02 U	0.03 ± 0.03 U
Radium-228	NA	-0.213 ± 0.244 U	0.22 ± 0.49 U	0.77 ± 0.55 J	0.023 ± 0.243 U	0.35 ± 0.65 U	1.17 ± 0.6	0.22 ± 0.41 U	0.8 ± 0.65 J	0.2 ± 0.66 U
Sulfate	NA	104	39	36	38	47	32	31	34	35
CALC										
Radium-226/228	NA	0.267 ± 0.315 J	0.46 ± 0.58 U	0.83 ± 0.61 U	0.12 ± 0.289 U	0.53 ± 0.74 U	1.17 ± 0.65 U	0.22 ± 0.46 U	0.8 ± 0.67 U	0.23 ± 0.69 U
FIELD PARAM										
Turbidity, Field	NA	34.2	7.3	7.28	23.6	24.7	5.64		3.82	
GEN CHEM										
Chloride	NA	13	12	12	13	12	11	11	12	12
Dissolved Solids, Total	NA	424	380 H	372	360	386	372	386	380	376
pH, Lab	NA	7.48	7.59	7.32	7.72	7.32 H	7.56 H	7.65 H	7.5 H	7.45 H
METALS										
Antimony	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U
Antimony	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	0.0019	0.0021	0.0019	0.0019	0.0021	0.0022	0.0021	0.002	0.002
Arsenic	T	0.0026	0.0025	0.0021	0.0024	0.0021	0.002	0.0023	0.0026	0.0028
Barium	D	0.129	0.111	0.109 B	0.107	0.116	0.114	0.117	0.109	0.108
Barium	T	0.186	0.134	0.124	0.122	0.123	0.12	0.125	0.131	0.143
Beryllium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	1.32	0.327	0.24	0.239	0.572	0.234	0.236	0.169	0.166
Boron	T	1.61	0.329	0.243	0.225	0.473	0.209	0.239	0.191	0.221
Cadmium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	107 S	76.5	78.3	76.3	82.8 S	81	81.1	73.5	73.6
Calcium	T	110	89.5	80.5	80.3	86.9 B	69.5	87.5	80.9	111
Chromium	D	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	0.0011 J	0.0015 U	0.0015	0.0015 U	0.0015 U	0.0018	0.0015 U	0.0015 U	0.0015 U
Cobalt	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Iron	D									
Iron	T	0.496								
Lead	D	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	0.001 U	0.0039	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	0.0184	0.0137	0.0131	0.0125	0.0163	0.0196	0.0184	0.0121	0.012
Lithium	T	0.0246	0.0143	0.0131	0.0137	0.0157	0.0134	0.015	0.0138	0.0163
Manganese	D									
Manganese	T	0.599								
Mercury	D		0.0002 U							
Mercury	T	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	0.0351	0.0182	0.0139	0.0165	0.0211	0.0167	0.0173	0.0154	0.0146
Molybdenum	T	0.0455	0.0194	0.015	0.0173	0.0189	0.0162	0.0173	0.0188	0.0171
Nickel	D	0.0017		0.001 U						
Nickel	T	0.004		0.0019						
Selenium	D	0.021	0.0142	0.0147	0.0179	0.0186	0.0155	0.0162	0.0163	0.0159
Selenium	T	0.0219	0.0151	0.0138	0.0196	0.0198	0.0153	0.0182	0.0214	0.0194
Thallium	D	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Parameter/Analyte	Total or Dissolved	APW-09-WG-20240111	DUP-02-WG-20240111	APW-09-WG-20240430	DUP-02-WG-20240430	APW-09-WG-20240906	DUP-02-WG-20240906	APW-09-WG-20241017	DUP-02-WG-20241017
Location ID		APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09
Sample Date		01/11/2024	01/11/2024	04/30/2024	04/30/2024	09/06/2024	09/06/2024	10/17/2024	10/17/2024
Sample Type		N	FD	N	FD	N	FD	N	FD
UNSPECIFIED									
Fluoride	NA	0.197	0.186	0.339	0.23	0.215	0.198	0.15 U	0.203
Radium-226	NA	0.203 ± 0.210 J	0.459 ± 0.287	0.252 ± 0.234 J	0.0618 ± 0.185 U	0.0956 ± 0.120 J	0.671 ± 0.288	0.0259 ± 0.0696 U	0.222 ± 0.187
Radium-228	NA	1.09 ± 0.251	0.723 ± 0.211	0.614 ± 0.214	0.51 ± 0.220	0.997 ± 0.496	0.552 ± 0.263	-0.422 ± 0.295 U	0.314 ± 0.253 J
Sulfate	NA	35.3	35.4	53.6	53.5 J6	56.1	55.7	40.8	41.5
CALC									
Radium-226/228	NA	1.29 ± 0.327	1.18 ± 0.356	0.866 ± 0.317	0.572 ± 0.287	1.09 ± 0.510	1.22 ± 0.390	0.0259 ± 0.303 U	0.536 ± 0.315
FIELD PARAM									
Turbidity, Field	NA	13.4		5.69		13.8		13.9	
GEN CHEM									
Chloride	NA	12.1	12.1	14.3	14	11	11	10.7	11.1
Dissolved Solids, Total	NA	354	361	367	365	389	387	370	371
pH, Lab	NA	8.03 T8	8.1 T8	7.7 T8	7.81 T8	7.45 T8	7.6 T8	7.51 T8	7.56 T8
METALS									
Antimony	D	0.004 U	0.004 U	0.004 U F1	0.004 U F1	0.004 U	0.004 U	0.004 U	0.004 U
Antimony	T	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	0.00216	0.00206	0.00222 F1	0.00223 F1	0.00211	0.00215	0.0021	0.00213
Arsenic	T	0.00235	0.00214	0.00227	0.00216	0.0023	0.00204	0.00219	0.0021
Barium	D	0.118	0.12	0.114 F1	0.117 F1	0.112	0.109	0.111	0.114
Barium	T	0.138	0.136	0.113	0.109	0.117	0.119	0.116	0.121
Beryllium	D	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Beryllium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D			0.481 F1	0.466 F1	0.833	0.834	0.466	0.469
Boron	T			0.501	0.493	0.829	0.833	0.471	0.466
Cadmium	D	0.001 U	0.001 U	0.001 U F1	0.001 U F1	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	80.2	78.4	88.5 F1	88.3 F1	94.7	95.2	89.4	89.7
Calcium	T	80.4	80.9	88.3	87.9	90.4	91.7	88.4	87.5
Chromium	D	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Chromium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.00338	0.0035
Cobalt	D	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	0.1 U	0.1 U						
Iron	T	0.179	0.21						
Lead	D	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Lead	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	0.0129	0.0142	0.0159 F1	0.017 F1	0.0159	0.0159	0.0162	0.0151
Lithium	T	0.0139	0.0143	0.0163	0.0191	0.0163	0.0163	0.016	0.0149
Manganese	D	0.005 U	0.005 U						
Manganese	T	0.124	0.119						
Mercury	D	0.0002 U	0.0002 U	0.0002 U F1	0.0002 U F1	0.000236	0.0002 U	0.0002 U	0.0002 U
Mercury	T	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	0.0186	0.0188	0.0311 F1	0.0309 F1	0.0255	0.0256	0.0194	0.019
Molybdenum	T	0.0163	0.0157	0.031	0.0295	0.0259	0.0251	0.0196	0.0191
Nickel	D	0.002 U	0.002 U						
Nickel	T	0.002 U	0.002 U						
Selenium	D	0.022	0.0216	0.0319 F1	0.0354 F1	0.0186	0.0182	0.0191	0.0175
Selenium	T	0.0225	0.0222	0.0334	0.0328	0.0178	0.0186	0.0182	0.019
Thallium	D	0.002 U	0.002 U	0.002 U F1	0.002 U F1	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-05R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment										Post-Closure Sampling								
			Sample ID	APW-10D-20170907	APW-10D-20170927	APW-10D-20171019	APW-10D-20171109	APW-10D-20171128	APW-10D-20171228	APW-10D-20180118	APW-10D-20180209	APW-10D-WG-20220615	APW-10D-WG-20220916	APW-10D-WG-20221129	APW-10D-WG-20230202	APW-10D-WG-20230626	APW-10D-WG-20230919	APW-10D-WG-20231127	APW-10D-WG-20240111	APW-10D-WG-20240430	APW-10D-WG-20240905	APW-10D-WG-20241015
			Location ID	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/16/2022	11/29/2022	02/02/2023	06/26/2023	09/19/2023	11/27/2023	01/11/2024	04/30/2024	09/05/2024	10/15/2024
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[1]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.1	0.12	0.1	0.1 U	0.11	0.1	0.11	0.1 U	0.12	0.1	0.12	0.12	0.11	0.11	0.14	0.15 U	0.15 U	0.15 U	0.15 U
Radium-226	NA	pCi/L	NS	0.34 ± 0.12 U	-0.11 ± 0.1 U	0.121 ± 0.337	0.19 ± 0.12 U	0.16 ± 0.13 U	0.23 ± 0.1 U	0.09 ± 0.1 U	0 ± 0.07 U	0.249 ± 0.297	0.22 ± 0.09 U	0.31 ± 0.11 U	0.199 ± 0.157	0.31 ± 0.12 U	0.21 ± 0.09 U	0.14 ± 0.08 U	0.04 ± 0.170 U	0.134 ± 0.199 J	0.163 ± 0.151	0.108 ± 0.274 U
Radium-228	NA	pCi/L	NS	1.16 ± 0.52	1.72 ± 0.64	0.633 ± 0.398	0.98 ± 0.33 J	0.67 ± 0.55 U	0.34 ± 0.37 U	0.98 ± 0.6 J		1.19 ± 0.311	0.56 ± 0.58 U	0.28 ± 0.43 U	0.847 ± 0.370	1.39 ± 0.76	0.61 ± 0.49 U	1.36 ± 0.77	1.49 ± 0.351	0.886 ± 0.294	-0.266 ± 0.253 U	0.282 ± 0.302 J
Sulfate	NA	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39	44	31	26	35.5	35.3	37.1	32.9
CALC																						
Radium-226/228	NA	pCi/L	7.002	1.5 ± 0.64 U	1.72 ± 0.74 U	0.754 ± 0.703	1.17 ± 0.45 U	0.83 ± 0.68 U	0.57 ± 0.47 U	1.08 ± 0.7 U	0.59 ± 0.5 U	1.44 ± 0.374	0.78 ± 0.67 U	0.59 ± 0.54 U	1.03 ± 0.402	1.7 ± 0.88 U	0.82 ± 0.58 U	1.5 ± 0.83 U	1.53 ± 0.390	1.02 ± 0.355	0.163 ± 0.295 U	0.39 ± 0.468 J
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.96[3]									46.9	21.9	36.4	45.3	176	169	196	4.76	198	5.56	45.3
GEN CHEM																						
Chloride	NA	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13	14	10	10	15.4	10.9	25.5	15
Dissolved Solids, Total	NA	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454	485	468	445	436	459	351	447
pH, Lab	NA	pH units	6.22-9.0[2]	7.12	7.11	7.05	7.11	7.12	7.15	7.03	7.03	7.21	7.29	7.04	7.57	6.98 H	7.22 H	7.08 H	7.66 T8	7.38 T8	7.28 T8	7.31 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U	0.0012	0.0011	0.0011	0.0011	0.0018	0.002 U	0.002 U F1	0.002 U	0.002 U
Arsenic	T	mg/L	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.0017	0.0057	0.0014	0.0017	0.0019	0.0016	0.0021	0.002 U	0.002 U	0.002 U	0.002 U
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.364	0.348	0.355	0.446	0.336	0.369 F1	0.217	0.334
Barium	T	mg/L	2	0.437	0.304	0.363	0.325	0.284	0.295	0.391	0.357	0.407	0.418	0.276	0.343	0.485	0.339	0.398	0.341	0.351	0.22	0.342
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.0786	0.0711	0.0841	0.0579	0.0704	0.0639	0.0823		0.2 U F1	0.2 U	0.2 U
Boron	T	mg/L	2	0.0999	0.101	0.0843	0.0713	0.0885	0.0922	0.0923	0.0906	0.118	0.0731	0.0522	0.073	0.0874	0.066	0.0754		0.2 U	0.2 U	0.2 U
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									143	124	113	114	114	116	83.4	119	121 T1	101	113
Calcium	T	mg/L	103.2	118	136	129	123	125	123	148 S	124 S	135	374	115	122	82 B	116	120	125	143	98.5	136
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0036	0.0078	0.0022	0.0011	0.001 U	0.001 U	0.0042	0.001 U	0.0015 U	0.0148	0.0024	0.0015 U	0.0015	0.0042	0.0021	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.0025	0.0021	0.0032	0.003	0.0026	0.0026	0.0038	0.00228	0.00238 F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.0039	0.0024	0.0025	0.0032	0.0017	0.0013	0.0026	0.0026	0.0034	0.0049	0.003	0.0033	0.007	0.0031	0.0039	0.00261	0.00271	0.002 U	0.00242
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									0.758							0.175			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0135	0.0135	0.0133	0.012	0.0148	0.02	0.0176	0.0135	0.014 F1	0.0116	0.0156
Lithium	T	mg/L	0.04	0.0147	0.0155	0.0146	0.0146	0.0153	0.0155	0.0142	0.014	0.018	0.0156	0.0126	0.0146	0.0158	0.0148	0.0154	0.0152	0.0142	0.0113	0.0147
Manganese	D	mg/L	NS																0.857			
Manganese	T	mg/L	NS									1.16							0.88			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.000229	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0025	0.005 U	0.005 U F1	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.0024	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.0054		0.0054					0.00474			
Nickel	T	mg/L	NS	0.0095	0.0077	0.0065	0.0057	0.0035	0.0025	0.0072	0.0053	0.007		0.0063					0.00513			
Selenium	D	mg/L	0.05									0.001 U	0.0016	0.0015	0.0024	0.0013	0.0016	0.0043	0.00274	0.00238 F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.0011	0.0012	0.0013	0.001 U	0.0014	0.0016	0.0016	0.001 U	0.0021	0.0013	0.0027	0.0016	0.0013	0.0033	0.00269	0.00264	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-09R
Highlighted values exceed action level
NS = No standard

Table 1
Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

				Sampled Prior to Closure of CCR Impoundment									Post-Closure Sampling									
			Sample ID	APW-10S-20170907	APW-10S-20170927	APW-10S-20171019	APW-10S-20171116	APW-10S-20171128	APW-10S-20171228	APW-10S-20180118	APW-10S-20180209	APW-10S-WG-20220815	APW-10S-WG-20220915	APW-10S-WG-20221129	APW-10S-WG-20230202	APW-10S-WG-20230626	APW-10S-WG-20230919	APW-10S-WG-20231127	APW-10S-WG-20240111	APW-10S-WG-20240430	APW-10S-WG-20240905	**APW-10S-WG-20241015**
			Location ID	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	APW-10S	**APW-10S**
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/15/2022	11/29/2022	02/02/2023	06/26/2023	09/19/2023	11/27/2023	01/11/2024	04/30/2024	09/05/2024	**10/15/2024**
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**N**
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]																			
UNSPECIFIED																						
Fluoride	NA	mg/L	4	0.19	0.21	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.15	0.17	0.15	0.15	0.16	0.18	0.15 U	0.15 U	0.251	0.15 U
Radium-226	NA	pCi/L	NS	0.4 ± 0.14 U	0.19 ± 0.11 U	0.774 ± 0.430	0.16 ± 0.11 U	0.18 ± 0.16 U	0.23 ± 0.1 U	0.29 ± 0.12 U	0.24 ± 0.13 U	0.778 ± 0.324	0.3 ± 0.1 U	0.31 ± 0.11 U	1.08 ± 0.395	0.37 ± 0.13 U	0.59 ± 0.14 U	0.32 ± 0.09 U	0.313 ± 0.206	0.347 ± 0.299 J	0.498 ± 0.257	0.236 ± 0.267 J
Radium-228	NA	pCi/L	NS	0.38 ± 0.47 U	0.88 ± 0.7 J	0.858 ± 0.391	0.71 ± 0.33 J	0.86 ± 0.57 U	0.56 ± 0.43 U	2.71 ± 0.78	0.33 ± 0.52 J	0.475 ± 0.298 J	2.52 ± 0.91	1.64 ± 0.88	0.182 ± 0.371 U	0.18 ± 0.47 U	4.24 ± 0.91	0.95 ± 0.66 J	2.1 ± 0.728	0.234 ± 0.289 U	-0.0143 ± 0.345 U	0.534 ± 0.351
Sulfate	NA	mg/L	400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	21 S	10 U	10 U	10 U	10 SU	10 U	5 U	5 U	5 U	5 U
CALC																						
Radium-226/228	NA	pCi/L	7.002	0.78 ± 0.61	1.17 ± 0.81 U	1.63 ± 0.821	0.87 ± 0.44 U	0.84 ± 0.73 U	0.79 ± 0.54 U	3 ± 0.9	1.17 ± 0.65 U	1.25 ± 0.42	2.82 ± 1.01	1.95 ± 0.79 U	1.24 ± 0.542	0.37 ± 0.6 U	4.83 ± 1.05	1.27 ± 0.75 U	2.42 ± 0.307	0.582 ± 0.416 J	0.498 ± 0.430 J	1.17 ± 0.441
FIELD PARAM																						
Turbidity, Field	NA	NTU	17.96[1]									61.5	34.3	52.6	37.3	57.2	63.6	13.1	3.78	17.1	9.12	20.4
GEN CHEM																						
Chloride	NA	mg/L	200	10	7	8	6	6	6	6	6	12	15	18	21	14	15	20	17.2	11.4	10.3	13.2
Dissolved Solids, Total	NA	mg/L	1200	708	726	678	708	734	770	680 R	762	735	770 H	750	780	725	775	900	692	744	751	758
pH, Lab	NA	pH units	6.22-9.0[2]	6.99	6.96	6.95	6.98	6.97	6.98	7.06	6.91	7.09	7.2	6.95	7.2	7.01 H	7.17 H	7.01 H	7.58 T8	7.18 T8	6.96 T8	7.16 T8
METALS																						
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0016	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1	0.004 U	0.004 U
Antimony	T	mg/L	0.006	0.001 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.152	0.0612	0.0138	0.171	0.166	0.176	0.251	0.0628	0.0639 F1	0.062	0.0557
Arsenic	T	mg/L	0.01	0.186	0.189	0.18	0.209	0.183	0.193	0.23	0.198	0.185	0.187	0.182	0.191	0.194	0.174	0.275	0.196	0.198	0.19	0.19
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506	0.505	0.567	0.711	0.288	0.339 F1	0.299	0.305
Barium	T	mg/L	2	0.613	0.634	0.543	0.668	0.565	0.598	0.703	0.585	0.575	0.612	0.536	0.575	0.589	0.591	0.804	0.597	0.559	0.567	0.474
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									0.57	0.541	7.48	0.497	0.578	0.571	0.682		0.544 F1	0.535	0.562
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582	0.663	0.565	0.569	0.592	0.582	0.553	0.595		0.571	0.554	0.567
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2									169	156	142	145	142	151	137	152	160 F1	154	152
Calcium	T	mg/L	103.2	136	144	135	152	150	145	140	140	161	171 S	154	145	153 R	134	129 S	162	163	161	162
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Chromium	T	mg/L	0.1	0.0091	0.0019	0.001	0.0016	0.001 U	0.0016	0.0019	0.001 U	0.0015 J	0.015	0.0032	0.0023	0.0025	0.0087	0.0018	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	mg/L	0.006									0.0001 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0021	0.0013	0.001 U	0.001 U	0.0021	0.0013	0.002 U	0.002 U	0.002 U	0.002 U
Iron	D	mg/L	NS																0.1 U			
Iron	T	mg/L	NS									19.6							17.2			
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0007 J	0.0043	0.0014	0.001 U	0.0018	0.0031	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	mg/L	0.04									0.0266	0.0286	0.0387 R	0.0268	0.0278	0.0349	0.0359	0.0302	0.0284 F1	0.0268	0.0296
Lithium	T	mg/L	0.04	0.0263	0.0278	0.0272	0.0289	0.0293	0.0308	0.0316	0.0297	0.0353	0.033	0.0307	0.0323	0.0291	0.0301	0.0401	0.0328	0.0283	0.0272	0.0297
Manganese	D	mg/L	NS																0.155			
Manganese	T	mg/L	NS									0.243							0.174			
Mercury	D	mg/L	0.002										0.0002 U						0.0002 U	0.0002 U F1	0.0002 U	0.0002 U
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.005 U	0.005 U F1	0.005 U	0.005 U
Molybdenum	T	mg/L	0.1	0.0017	0.0016	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0021	0.005 U	0.005 U	0.005 U	0.005 U
Nickel	D	mg/L	NS									0.001 U		0.001 U					0.002 U			
Nickel	T	mg/L	NS	0.0051	0.0012	0.001 U	0.0015	0.001 U	0.001 U	0.0014	0.001 U	0.0014		0.0031					0.002 U			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U F1	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
F1 = Sample filtration was performed in the laboratory
J3 = The associated batch QC was outside the established quality control range for precision
J6 = The sample matrix interfered with the ability to make any accurate determination; spike value is low
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit
T8 = Sample received past/too close to holding time expiration

1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from
3 Eight episodes of groundwater sampling were conducted from September 2017
4 Well was redrilled in February with Location ID of APW-09R
Highlighted values exceed action level
NS = No standard

APPENDIX A FOURTH QUARTER 2024 CCR IMPOUNDMENT INSPECTION REPORT

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date: 10/16/2024

Time: 13:10 – 13:40

Name: Marshall Arendell
(Inspector)

Weather:

Temperature:

60 deg. F

☒ Sunny
☐ Cloudy
☐ Raining
☐ Other

Observations:

☒ Erosion / Gullies
☐ Cracking / Sloughing
☒ Ponding / Damp Areas
☐ No Problems Identified
☒ Woody Vegetation Growth
☐ Other

Conditions Limiting Visibility:

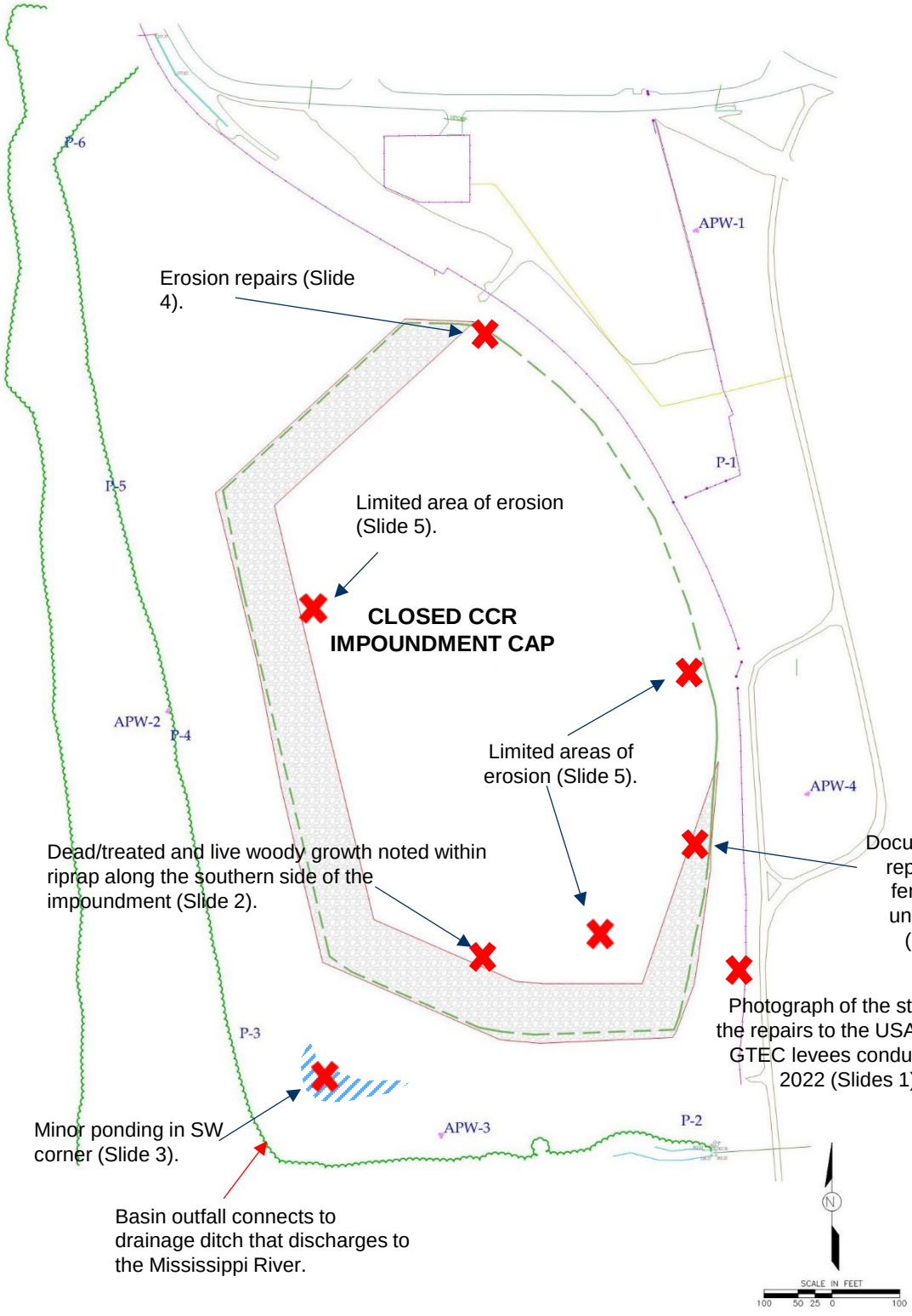
☐ Snow Cover
☒ Vegetation
☐ None
☐ Other

Observations in Detail Below:

- ERM onsite for the Q4 2024 inspection of the closed CCR impoundment and groundwater sampling event.
- Repairs made to the United States Army Corps of Engineers (USACE) and GTEC levees in 2022 continue to hold, and revegetation of levee face was successful.
- The impoundment cap was mowed during Q4 2024 and found to be in generally good condition.
- Post clearing of the CCR Impoundment in Q4 2024, additional erosion channels were noted across the west, east, and southern closed CCR impoundment cap faces up to 6” deep. ERM will continue to monitor and will recommend controls if erosion worsens.
- Ponding continues to be noted in the SW corner of the basin near the outfall. No adverse effects to the impoundment cap are associated with the ponding.
- The inspector will continue to assess woody vegetation growth and will recommend additional treatment in the spring of 2025.

Attach additional pages if necessary.

Observation Locations Map



Grand Tower Energy Center Q4 2024 Closed CCR Impoundment Cap Inspection

Fenceline and Levee on the SE Side of Closed CCR Impoundment Cap

View facing northwest along the fence-line, riprap, and levee area.

View facing north along the fence-line, riprap, and levee area.

Levee has successfully revegetated since repairs were made in 2022.

Woody Growth Observations

Dead/herbicide treated woody vegetation noted within riprap up to 1” diameter. Limited amount of live woody growth remains.

Sparse woody vegetation on southern riprap

Picture facing north towards impoundment cap.

Woody vegetation on south facing riprap. Picture facing south from atop impoundment cap.

Ponding in the SW Corner of Site Basin Near the Outfall

Ponded area in southwest corner of site as viewed from mowed impoundment cap. Potential woody vegetation removal in spillway will be assessed in Q1 2025.

Ponded area in southwest corner of site as viewed from southwest corner.

Note: Mississippi River backwater enters the GTEC CCR Impoundment Basin when the river level gage operated by the U.S. Army Corps of Engineers at Grand Tower, IL reaches a stage of approximately 27 ft.

Erosion Repairs

Repairs to impoundment cap conducted during Q4 2024 event near the northeastern section of the impoundment cap.

Erosion repairs made near the northeastern section of the impoundment cap.
Photo taken from northeastern section of impoundment cap, facing south.

Photo taken from northeastern section of impoundment cap, facing west.

Minor Erosional Channels

Erosion on the south side, roughly 6” deep, of impoundment cap. Photo taken facing north towards the impoundment cap.

Erosion on the west side, roughly 6” deep, of impoundment cap. Photo taken facing west from the top of the impoundment cap.

Erosion on the east side, roughly 4” deep, of impoundment cap. Photo taken facing west from the bottom of the impoundment cap.

APPENDIX B FOURTH QUARTER 2024 GROUDNWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-01R		Date:	10/15/2024
Total Depth (Actual):	58.30	(BTOC)	Time:	11:30 AM
Total Depth (Measured):	59.03	(BTOC)	Collection Order:	8
Depth to Water (Measured):	35.69	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	Yes
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-02		Date:	10/15/2024
Total Depth (Actual):	58.75	(BTOC)	Time:	12:00 PM
Total Depth (Measured):	59.10	(BTOC)	Collection Order:	11
Depth to Water (Measured):	36.30	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	Yes
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches	
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-03		Date:	10/15/2024
Total Depth (Actual):	54.65	(BTOC)	Time:	11:00 AM
Total Depth (Measured):	60.27	(BTOC)	Collection Order:	5
Depth to Water (Measured):	34.67	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	Yes
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	No
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-04		Date:	10/15/2024
Total Depth (Actual):	60.40	(BTOC)	Time:	11:10 AM
Total Depth (Measured):	60.77	(BTOC)	Collection Order:	6
Depth to Water (Measured):	36.21	(BTOC)		

Is well screen occluded more than 10%? No

If Yes, list steps for redevelopment:

LNAPL Present: No

If Yes, measured thickness =

DNAPL Present: No

If Yes, measured thickness =

Well Completion Type:

Condition of protector: INTACT Yes

Well ID present and readable: Yes

Locks intact: Yes

Weep hole present: No

Water present in protector: No

Are well "markers" (i.e.bumper posts) needed at this location: No

If yes, are current well "markers" adequate around well:

Comments: 2 ballards are very lose.

Well Surface Seal: INTACT

Is surrounding area sloped away from well: Yes

Any observed ponding: No

Is surface run-off flow evident around well: No

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present: No

Well cap in place: Yes

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-05R		Date:	10/15/2024
Total Depth (Actual):	56.90	(BTOC)	Time:	12:05 PM
Total Depth (Measured):	63.50	(BTOC)	Collection Order:	12
Depth to Water (Measured):	34.50	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	No ballards present.

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D		Date:	10/15/2024
Total Depth (Actual):	152.57	(BTOC)	Time:	11:48 AM
Total Depth (Measured):	157.56	(BTOC)	Collection Order:	9
Depth to Water (Measured):	33.29	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06S		Date:	10/15/2024
Total Depth (Actual):	63.98	(BTOC)	Time:	11:52 AM
Total Depth (Measured):	64.80	(BTOC)	Collection Order:	10
Depth to Water (Measured):	33.36	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	No
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07		Date:	10/15/2024
Total Depth (Actual):	63.35	(BTOC)	Time:	10:40 AM
Total Depth (Measured):	64.28	(BTOC)	Collection Order:	3
Depth to Water (Measured):	30.35	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well was pressurized.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-08		Date:	10/15/2024
Total Depth (Actual):	61.89	(BTOC)	Time:	10:50 AM
Total Depth (Measured):	62.70	(BTOC)	Collection Order:	4
Depth to Water (Measured):	31.13	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-09		Date:	10/15/2024
Total Depth (Actual):	63.40	(BTOC)	Time:	11:20 AM
Total Depth (Measured):	64.05	(BTOC)	Collection Order:	7
Depth to Water (Measured):	35.13	(BTOC)		

Is well screen occluded more than 10%?	No
If Yes, list steps for redevelopment:	
LNAPL Present:	No
If Yes, measured thickness =	
DNAPL Present:	No
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	Yes
Well ID present and readable:	Yes
Locks intact:	Yes
Weep hole present:	No
Water present in protector:	No
Are well "markers" (i.e.bumper posts) needed at this location:	No
If yes, are current well "markers" adequate around well:	
Comments:	

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	Yes
Any observed ponding:	No
Is surface run-off flow evident around well:	No

Well Casing Condition: INTACT

Size of well (diameter) =	2 inches
Marking point present:	Yes
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10D		Date:	10/15/2024
Total Depth (Actual):	98.19	(BTOC)	Time:	10:20 AM
Total Depth (Measured):	99.26	(BTOC)	Collection Order:	1
Depth to Water (Measured):	27.24	(BTOC)		

Is well screen occluded more than 10%? No

If Yes, list steps for redevelopment:

LNAPL Present: No

If Yes, measured thickness =

DNAPL Present: No

If Yes, measured thickness =

Well Completion Type:

Condition of protector: INTACT Yes

Well ID present and readable: Yes

Locks intact: Yes

Weep hole present: No

Water present in protector: No

Are well "markers" (i.e.bumper posts) needed at this location: No

If yes, are current well "markers" adequate around well:

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well: Yes

Any observed ponding: No

Is surface run-off flow evident around well: No

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present: Yes

Well cap in place: Yes

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10S		Date:	10/14/2024
Total Depth (Actual):	62.84	(BTOC)	Time:	10:30 AM
Total Depth (Measured):	62.73	(BTOC)	Collection Order:	2
Depth to Water (Measured):	28.95	(BTOC)		

Is well screen occluded more than 10%? No

If Yes, list steps for redevelopment:

LNAPL Present: No

If Yes, measured thickness =

DNAPL Present: No

If Yes, measured thickness =

Well Completion Type:

Condition of protector: INTACT Yes

Well ID present and readable: Yes

Locks intact: Yes

Weep hole present: No

Water present in protector: No

Are well "markers" (i.e.bumper posts) needed at this location: No

If yes, are current well "markers" adequate around well:

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well: No

Any observed ponding: No

Is surface run-off flow evident around well: No

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present: Yes

Well cap in place: Yes

Comments:

General Comments:

APPENDIX C FOURTH QUARTER 2024 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2024/10/15

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.03 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.75 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 59.03 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.3 - 58.3 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 3.8 (gal) / 3 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
17:45	35.75	500	0	15	6.4	366	NM	2.36	22.3	309	NM	TRANSLUCENT, NO ODOR
17:50	35.7	500	0.25	15.7	6.43	480	NM	2.61	30.8	200	NM	TRANSLUCENT, NO ODOR
17:55	35.7	500	0.5	15.8	6.49	521	NM	3.5	30.1	95.3	NM	TRANSLUCENT, NO ODOR
18:00	35.7	500	1	15.9	6.5	539	NM	4.45	29.5	34.7	NM	TRANSLUCENT, NO ODOR
18:05	35.7	500	1.5	16	6.52	543	NM	5.87	29.8	23.5	NM	TRANSLUCENT, NO ODOR
18:10	35.7	500	2	16.1	6.52	542	NM	5.87	29.6	17.5	NM	TRANSLUCENT, NO ODOR
18:15	35.7	500	2.5	16.1	6.52	545	NM	5.84	29.7	16.9	NM	TRANSLUCENT, NO ODOR
18:20	35.7	500	3	16.2	6.52	547	NM	5.81	29.8	16.8	NM	TRANSLUCENT, NO ODOR

Sample ID(s): APW-01R-WG-20241015	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 15:38

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-02 Well Permit No:	Date: 2024/10/15

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.03 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.4 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 59.03 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 200 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.2 - 57.2 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 4.02 (gal) / 1.1 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:53	39	200	0	15.5	7.23	1025	NM	4.23	53.8	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
12:58	40.1	200	0.25	16.5	7.19	1034	NM	2.07	-11	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
13:03	40.25	200	0.5	16.8	7.16	1029	NM	2.32	-27.1	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
13:08	40.65	200	0.6	17.6	7.15	1026	NM	2.14	-37	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
13:13	42.4	200	0.7	17.2	7.14	1023	NM	2.23	-51.8	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
13:18	45.4	200	0.8	17.7	7.14	1011	NM	2.27	-50.4	545	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
13:23	47.8	200	0.9	18.5	7.13	1015	NM	2.16	-51.6	665	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
13:28	48.65	200	1	17.6	7.16	1019	NM	2.05	-52.7	673	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
13:33	50.1	200	1.1	18.8	7.18	1024	NM	2.01	-61.6	663	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-02-WG-20241015		Marshall Arendell 	10/22/2024 15:39
Analysis:			

Low Flow Groundwater Sampling Field Data Form

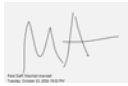
Well ID: APW-03
Well Permit No:

Date: 2024/10/16

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.27 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.8 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.27 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 4.16 (gal) / 4 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:10	34.75	500	0	15.3	7.77	730	NM	1.14	23.4	43.1	NM	TRANSLUCENT, GREY, NO ODOR
14:15	34.75	500	0.25	16.2	7.96	753	NM	0.23	-7.5	23.9	NM	CLEAR, NO ODOR
14:20	34.75	500	0.5	17.1	7.99	757	NM	0.16	-49	17.9	NM	CLEAR, NO ODOR
14:25	34.75	500	1	16.8	7.99	754	NM	0.16	-67.8	13.9	NM	CLEAR, NO ODOR
14:30	34.75	500	1.5	16.8	7.98	756	NM	0.16	-89.4	11.8	NM	CLEAR, NO ODOR
14:35	34.75	500	2	16.8	7.99	753	NM	0.14	-105.9	8.67	NM	CLEAR, NO ODOR
14:40	34.75	500	2.5	17	7.98	756	NM	0.11	-117.1	6.37	NM	CLEAR, NO ODOR
14:45	34.75	500	3	17.1	7.99	754	NM	0.13	-125.1	4.98	NM	CLEAR, NO ODOR
14:50	34.75	500	3.5	17	7.98	755	NM	0.14	-130.9	4.84	NM	CLEAR, NO ODOR
14:55	34.75	500	4	17	8	753	NM	0.15	-134	4.48	NM	CLEAR, NO ODOR

Sample ID(s): APW-03-WG-20241016	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 21:32

Low Flow Groundwater Sampling Field Data Form

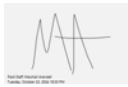
Well ID: APW-04
Well Permit No:

Date: 2024/10/17

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.77 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.35 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.77 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 460 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 3.99 (gal) / 1.5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:20	36.4	300	0	14.7	7.29	559	NM	1.02	-37.5	1000	NM	OPAQUE, BROWN, NO ODOR
08:25	36.4	500	0.25	16	7.18	578	NM	0.41	-27.6	235	NM	TRANSLUCENT, BROWN, NO ODOR
08:30	36.4	500	0.5	15.8	7.16	597	NM	0.39	-20.3	96.3	NM	CLEAR, NO ODOR
08:35	36.4	500	1	15.8	7.14	604	NM	0.49	-17.7	98.9	NM	CLEAR, NO ODOR
08:40	36.4	500	1.5	15.8	7.15	606	NM	0.43	-15.7	91.4	NM	CLEAR, NO ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-04-WG-20241017		Marshall Arendell 	10/22/2024 21:33
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05R
Well Permit No:

Date: 2024/10/16

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.5 (ft)	**Reference Elevation** ()
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.65 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.5 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 4.71 (gal) / 5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:25	34.65	500	0	16.3	7.33	474	NM	0.67	41.3	156	NM	TRANSLUCENT, ROTTEN EGG-LIKE ODOR
11:30	34.65	500	0.25	16.7	7.36	469	NM	0.32	34.9	310	NM	TRANSLUCENT, ROTTEN EGG-LIKE ODOR
11:35	34.7	500	0.5	17	7.34	452	NM	0.21	40.3	109	NM	TRANSLUCENT, NO ODOR
11:40	34.7	500	1	16.7	7.33	455	NM	0.21	43.8	76.5	NM	TRANSLUCENT, NO ODOR
11:45	34.7	500	1.5	17	7.32	395	NM	0.23	46.8	60.9	NM	CLEAR, NO ODOR
11:50	34.7	500	2	17.1	7.33	321	NM	0.29	47.4	54.2	NM	CLEAR, NO ODOR
11:55	34.7	500	2.5	17.2	7.32	346	NM	0.27	44.3	42.9	NM	CLEAR, NO ODOR
12:00	34.7	500	3	17.6	7.32	847	NM	0.2	10.1	61.5	NM	CLEAR, NO ODOR
12:05	34.7	500	3.5	17.5	7.33	845	NM	0.15	-34.3	37	NM	CLEAR, NO ODOR
12:10	34.7	500	4	17.2	7.32	841	NM	0.13	-96.9	26.2	NM	CLEAR, NO ODOR
12:15	34.7	500	4.5	17.3	7.33	840	NM	0.13	-101.2	24.3	NM	CLEAR, NO ODOR
12:20	34.7	500	5	17.3	7.34	828	NM	0.11	-101.6	23.4	NM	CLEAR, NO ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-05R-WG-20241016,DUP-01-WG-20241016		Marshall Arendell 	10/22/2024 21:37
Analysis:			

Low Flow Groundwater Sampling Field Data Form

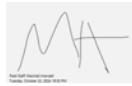
Well ID: APW-06D
Well Permit No:

Date: 2024/10/16

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 152.56 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.4 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 157.56 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 455 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 20.26 (gal) / 4 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:25	33.4	500	0	13.2	7.3	756	NM	4.27	-19.2	15.1	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:30	33.4	450	0.25	13.9	7.26	779	NM	1.31	-29.9	85.7	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:35	33.4	450	0.5	14.3	7.24	785	NM	0.7	-37.4	76.4	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:40	33.4	450	1	14.7	7.24	787	NM	0.66	-46.6	44.9	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:45	33.4	450	1.5	14.6	7.24	787	NM	0.69	-50.4	28.5	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:50	33.4	450	2	14.4	7.25	784	NM	0.5	-53.8	18.7	NM	CLEAR, ROTTEN EGG-LIKE ODOR
08:55	33.4	450	2.5	14.6	7.24	789	NM	0.39	-55.2	20.3	NM	CLEAR, ROTTEN EGG-LIKE ODOR
09:00	33.4	450	3	15.1	7.24	789	NM	0.32	-61.7	9.91	NM	CLEAR, SLIGHT ROTTEN EGG-LIKE ODOR
09:05	33.4	450	3.5	15	7.24	788	NM	0.27	-65.8	8.83	NM	CLEAR, SLIGHT ROTTEN EGG-LIKE ODOR
09:10	33.4	450	4	15.2	7.24	788	NM	0.24	-70.6	8.39	NM	CLEAR, SLIGHT ROTTEN EGG-LIKE ODOR

Sample ID(s): APW-06D-WG-20241016	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 21:35

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2024/10/15

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.8 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.53 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 64.8 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 414.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 5.1 (gal) / 2 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:00	33.65	300	0	15.1	7.12	857	NM	1.37	-43.9	211	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
10:05	33.8	300	0.25	14.8	7.1	888	NM	1.06	-62.1	79.5	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
10:10	33.85	300	0.5	15.3	7.09	882	NM	0.93	-70.7	27.8	NM	CLEAR, ROTTEN EGG-LIKE ODOR
10:15	33.85	500	0.75	15.4	7.09	883	NM	0.48	-85.2	13.8	NM	CLEAR, ROTTEN EGG-LIKE ODOR
10:20	33.85	500	1	15.3	7.1	885	NM	0.18	-95.9	5.19	NM	CLEAR, ROTTEN EGG-LIKE ODOR
10:25	33.85	500	1.5	15.5	7.1	883	NM	0.17	-102.3	4.08	NM	CLEAR, NO ODOR
10:30	33.85	500	2	15.5	7.1	883	NM	0.15	-105.4	5.72	NM	CLEAR, NO ODOR

Sample ID(s): APW-06S-WG-20241016	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 21:36

Low Flow Groundwater Sampling Field Data Form

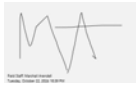
Well ID: APW-07
Well Permit No:

Date: 2024/10/16

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.28 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 30.58 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 64.28 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 5.5 (gal) / 3.5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
17:05	30.58	500	0	15.1	6.7	1218	NM	0.3	-8.3	39.1	NM	CLEAR, NO ODOR
17:10	30.58	500	0.5	16.2	6.72	1211	NM	0.49	-31.4	38.6	NM	CLEAR, NO ODOR
17:15	30.58	500	1	16.2	6.74	1209	NM	0.26	-43.7	27.7	NM	CLEAR, NO ODOR
17:20	30.58	500	1.5	16.1	6.72	1209	NM	0.2	-51.5	17.9	NM	CLEAR, NO ODOR
17:25	30.58	500	2	16.3	6.73	1208	NM	0.19	-55.8	14.2	NM	CLEAR, NO ODOR
17:30	30.58	500	2.5	16.5	6.71	1209	NM	0.18	-59.9	9.51	NM	CLEAR, NO ODOR
17:35	30.58	500	3	16.5	6.73	1205	NM	0.17	-63.1	6.54	NM	CLEAR, NO ODOR
17:40	30.58	500	3.5	16.5	6.73	1205	NM	0.15	-64.4	6.88	NM	CLEAR, NO ODOR

Sample ID(s): APW-07-WG-20241016	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 21:39

Low Flow Groundwater Sampling Field Data Form

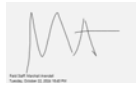
Well ID: APW-08
Well Permit No:

Date: 2024/10/16

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.7 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31.25 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.7 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 5.13 (gal) / 5.5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:30	31.25	500	0	16.4	7.03	643	NM	1.79	1.9	1000	NM	OPAQUE, TAN, NO ODOR
15:35	31.25	500	1	17	6.99	657	NM	0.83	-10.6	521	NM	OPAQUE, TAN, NO ODOR
15:40	31.25	500	1.5	16.9	6.98	657	NM	0.39	-11.8	338	NM	OPAQUE, TAN, NO ODOR
15:45	31.25	500	2	17	6.98	658	NM	0.64	-14.9	243	NM	OPAQUE, TAN, NO ODOR
15:50	31.25	500	2.5	17	6.97	656	NM	0.35	-15.9	155	NM	TRANSLUCENT, TAN, NO ODOR
15:55	31.25	500	3	17.1	6.98	655	NM	0.25	-14.1	126	NM	TRANSLUCENT, TAN, NO ODOR
16:00	31.25	500	3.5	17	6.96	654	NM	0.24	-16	77	NM	TRANSLUCENT, TAN, NO ODOR
16:05	31.25	500	4	17.1	6.99	654	NM	0.21	-16.3	64.6	NM	TRANSLUCENT, TAN, NO ODOR
16:10	31.25	500	4.5	16.9	6.97	651	NM	0.19	-16	51.1	NM	TRANSLUCENT, TAN, NO ODOR
16:15	31.25	500	5	16.8	6.97	648	NM	0.25	-15.9	48.4	NM	CLEAR, NO ODOR
16:20	31.25	500	5.5	16.9	6.97	645	NM	0.22	-16	47.5	NM	CLEAR, NO ODOR

Sample ID(s): APW-08-WG-20241016	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	10/22/2024 21:40

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2024/10/17

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.05 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.26 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 64.05 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell, bre houska, emma portell	**Volume of Water in Well / Total Volume Purged** 4.7 (gal) / 3.5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:10	35.26	400	0	12.1	7.48	535	NM	5.67	6.4	222	NM	CLOUDY, NO ODOR
09:15	35.26	400	0.5	14.9	7.3	551	NM	2.15	-5.1	103	NM	CLOUDY, NO ODOR
09:20	35.26	400	1	15	7.28	553.9	NM	0.83	-5.3	39.9	NM	CLEAR, NO ODOR
09:25	35.26	400	1.5	15	7.27	554	NM	0.5	-5.8	20.9	NM	CLEAR, NO ODOR
09:30	35.26	400	2	15.1	7.27	553.9	NM	0.4	-6.4	17.9	NM	CLEAR, NO ODOR
09:35	35.26	400	2.5	15.2	7.27	554	NM	0.29	-7.7	16.5	NM	CLEAR, NO ODOR
09:40	35.26	400	3	15.3	7.27	553.5	NM	0.38	-8.4	15.3	NM	CLEAR, NO ODOR
09:45	35.26	400	3.5	15.9	7.27	554.2	NM	0.35	-9.4	13.9	NM	CLEAR, NO ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-09-WG-20241017,DUP-02-WG-20241017		Marshall Arendell 	10/22/2024 21:41
Analysis:			

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-10D Well Permit No:	Date: 2024/10/15

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 94.26 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.25 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 99.26 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 318.2 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 11.75 (gal) / 2.5 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:40	27.28	500	0	15	7.09	676	NM	1.9	34.6	154	NM	TRANSLUCENT, NO ODOR
14:45	27.25	250	0.25	15.2	7.09	679	NM	0.7	16.5	418	NM	OPAQUE, GREY, , NO ODOR
14:50	27.25	250	0.5	15.3	7.07	684	NM	0.52	12.8	213	NM	TRANSLUCENT, GREY, NO ODOR
14:55	27.25	250	0.75	15.4	7.05	687	NM	0.51	9.5	172	NM	TRANSLUCENT, GREY, NO ODOR
15:00	27.25	250	1	15.4	7.05	691	NM	1.07	7.3	152	NM	TRANSLUCENT, GREY, NO ODOR
15:05	27.25	250	1.25	15.4	7.04	694	NM	0.78	5.8	107	NM	TRANSLUCENT, GREY, NO ODOR
15:10	27.25	350	1.5	15.4	7.04	695	NM	0.67	4.8	92.5	NM	TRANSLUCENT, GREY, NO ODOR
15:15	27.25	350	1.75	15.4	7.03	698	NM	0.5	3.7	75.5	NM	TRANSLUCENT, GREY, NO ODOR
15:20	27.25	350	2	15.4	7.03	700	NM	0.49	2.9	49.1	NM	TRANSLUCENT, GREY, NO ODOR
15:25	27.25	350	2.25	15.4	7.03	699	NM	0.47	2.2	43.5	NM	CLEAR, NO ODOR
15:30	27.25	350	2.5	15.4	7.02	700	NM	0.49	2.1	45.3	NM	CLEAR, NO ODOR

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-10D-WG-20241015		Marshall Arendell 	10/22/2024 21:42
Analysis:			

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-10S Well Permit No:	Date: 2024/10/15

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.73 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 28.95 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.73 (ft)
Project Name 20241015-GWMonitor	**Average Purge Rate** 475 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell	**Volume of Water in Well / Total Volume Purged** 5.51 (gal) / 2.25 (gal)	**Well Construction**

Well Head Vapor Measurements
PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
16:10	29.1	250	0	16	6.96	1274	NM	1.2	-62	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
16:15	29.3	500	0.25	16.9	6.94	1276	NM	1.05	-73.5	1000	NM	OPAQUE, GREY, ROTTEN EGG-LIKE ODOR
16:20	29.3	500	0.5	16.7	6.95	1268	NM	0.59	-106.7	154	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
16:25	29.5	500	0.75	16.5	6.95	1258	NM	0.53	-111.9	142	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
16:30	29.5	500	1	16.1	6.95	1253	NM	0.46	-115	219	NM	TRANSLUCENT, GREY, ROTTEN EGG-LIKE ODOR
16:35	29.45	500	1.25	16.4	6.94	1261	NM	0.42	-119.2	64.3	NM	CLEAR, ROTTEN EGG-LIKE ODOR
16:40	29.45	500	1.5	16.3	6.95	1264	NM	0.34	-122.7	38.8	NM	CLEAR, ROTTEN EGG-LIKE ODOR
16:45	29.55	500	1.75	16.1	6.95	1272	NM	0.3	-125.7	21.2	NM	CLEAR, ROTTEN EGG-LIKE ODOR
16:50	29.55	500	2	16.1	6.95	1260	NM	0.25	-128.3	20.8	NM	CLEAR, ROTTEN EGG-LIKE ODOR
16:55	29.55	500	2.25	16.1	6.94	1275	NM	0.23	-128.8	20.4	NM	CLEAR, ROTTEN EGG-LIKE ODOR

Sample ID(s): APW-10S-WG-20241015	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Marshall Arendell 	10/22/2024 21:45

APPENDIX D FOURTH QUARTER 2024 LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

November 05, 2024

ERM - St. Louis, MO

Sample Delivery Group:	L1790474
Samples Received:	10/18/2024
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 4Q24 Sampling
Report To:	Randy Homburg
	1968 Craig Road, Suite 100
	Saint Louis, MO 63146

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

APW-03-WG-20241016 L1790474-01 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 15:00 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/21/24 22:37	10/21/24 22:37	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	10	10/22/24 03:05	10/22/24 03:05	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 18:04	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:35	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:07	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:11	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:36	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 14:52	JPD	Mt. Juliet, TN

APW-08-WG-20241016 L1790474-02 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 16:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/21/24 22:50	10/21/24 22:50	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 18:37	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:37	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:12	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:13	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:39	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 15:42	JPD	Mt. Juliet, TN

APW-07-WG-20241016 L1790474-03 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 17:45 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/21/24 23:03	10/21/24 23:03	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 18:39	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:40	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:13	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:18	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:42	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 15:45	JPD	Mt. Juliet, TN

APW-10S-WG-20241015 L1790474-04 GW

Collected by: Marshall Arendell | Collected date/time: 10/15/24 17:00 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/21/24 23:16	10/21/24 23:16	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 18:41	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:42	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:15	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:19	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:09	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 15:48	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	5	10/31/24 23:24	11/01/24 16:26	JPD	Mt. Juliet, TN

APW-10D-WG-20241015 L1790474-05 GW

Collected by: Marshall Arendell | Collected date/time: 10/15/24 15:35 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/21/24 23:54	10/21/24 23:54	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:04	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:49	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:17	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:21	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:48	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 15:51	JPD	Mt. Juliet, TN

APW-06S-WG-20241016 L1790474-06 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 10:35 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 00:06	10/22/24 00:06	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:07	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:52	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 13:55	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:22	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:51	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 15:54	JPD	Mt. Juliet, TN

APW-06D-WG-20241016 L1790474-07 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 09:15 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 00:19	10/22/24 00:19	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	10	10/22/24 03:55	10/22/24 03:55	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:09	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:54	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:18	JTM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2393512	1	11/02/24 18:40	11/03/24 15:24	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 17:54	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:08	JPD	Mt. Juliet, TN

APW-05R-WG-20241016 L1790474-08 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 12:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 00:32	10/22/24 00:32	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:12	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:57	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:35	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:20	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:12	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:11	JPD	Mt. Juliet, TN

APW-09-WG-20241017 L1790474-09 GW

Collected by: Marshall Arendell | Collected date/time: 10/17/24 09:50 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 00:45	10/22/24 00:45	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:14	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385490	1	10/21/24 16:21	10/22/24 18:59	AKB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:37	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:22	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:15	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:14	JPD	Mt. Juliet, TN

APW-02-WG-20241015 L1790474-10 GW

Collected by: Marshall Arendell | Collected date/time: 10/15/24 13:38 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	10	10/22/24 00:57	10/22/24 00:57	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:16	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385970	1	10/23/24 12:47	10/24/24 15:59	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:38	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:23	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:19	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:17	JPD	Mt. Juliet, TN

APW-01R-WG-20241015 L1790474-11 GW

Collected by: Marshall Arendell | Collected date/time: 10/15/24 18:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 01:10	10/22/24 01:10	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:19	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385970	1	10/23/24 12:47	10/24/24 16:07	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:40	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:25	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:22	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:20	JPD	Mt. Juliet, TN

APW-04-WG-20241017 L1790474-12 GW

Collected by: Marshall Arendell | Collected date/time: 10/17/24 08:45 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 01:23	10/22/24 01:23	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:21	LAS	Mt. Juliet, TN
Mercury by Method 7470A	WG2385970	1	10/23/24 12:47	10/24/24 16:10	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:45	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 14:27	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387793	1	10/31/24 21:52	11/01/24 18:25	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387926	1	10/31/24 23:24	11/01/24 16:23	JPD	Mt. Juliet, TN

EB-01-WG-20241015 L1790474-13 GW

Collected by: Marshall Arendell | Collected date/time: 10/15/24 10:15 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 01:36	10/22/24 01:36	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385483	1	10/24/24 14:08	10/25/24 19:24	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 13:37	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387929	1	10/31/24 22:32	11/01/24 15:14	JPD	Mt. Juliet, TN

DUP-01-WG-20241016 L1790474-14 GW

Collected by: Marshall Arendell | Collected date/time: 10/16/24 00:01 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385378	1	10/22/24 01:48	10/22/24 01:48	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385487	1	10/23/24 12:51	10/24/24 18:48	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2385970	1	10/23/24 12:47	10/24/24 16:12	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:47	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 13:38	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387797	1	11/01/24 07:51	11/04/24 16:37	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387929	1	10/31/24 22:32	11/01/24 15:27	JPD	Mt. Juliet, TN

DUP-02-WG-20241017 L1790474-15 GW

Collected by: Marshall Arendell | Collected date/time: 10/17/24 00:02 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2385254	1	10/18/24 22:17	10/19/24 17:11	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2385382	1	10/22/24 01:59	10/22/24 01:59	ZSA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2385247	1	10/18/24 22:40	10/18/24 22:40	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2385487	1	10/23/24 12:51	10/24/24 18:59	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2385970	1	10/23/24 12:47	10/24/24 16:15	LAS	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387787	1	10/31/24 12:38	10/31/24 19:49	MAP	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2387810	1	10/31/24 22:56	11/01/24 13:40	JTM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387797	1	11/01/24 07:51	11/04/24 16:40	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2387929	1	10/31/24 22:32	11/01/24 15:31	JPD	Mt. Juliet, TN

CASE NARRATIVE

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

Jeff Carr
Project Manager

Sample Delivery Group (SDG) Narrative

Analysis was filtered in the laboratory.

Lab Sample ID	Project Sample ID	Method
L1790474-01	APW-03-WG-20241016	7470A, 6020B, 6010D
L1790474-02	APW-08-WG-20241016	7470A, 6020B, 6010D
L1790474-03	APW-07-WG-20241016	7470A, 6020B, 6010D
L1790474-04	APW-10S-WG-20241015	7470A, 6020B, 6010D
L1790474-05	APW-10D-WG-20241015	7470A, 6020B, 6010D
L1790474-06	APW-06S-WG-20241016	7470A, 6020B, 6010D
L1790474-07	APW-06D-WG-20241016	7470A, 6020B, 6010D
L1790474-08	APW-05R-WG-20241016	7470A, 6010D, 6020B
L1790474-09	APW-09-WG-20241017	7470A, 6010D, 6020B
L1790474-10	APW-02-WG-20241015	7470A, 6010D, 6020B
L1790474-11	APW-01R-WG-20241015	7470A, 6010D, 6020B
L1790474-12	APW-04-WG-20241017	7470A, 6010D, 6020B
L1790474-14	DUP-01-WG-20241016	7470A, 6010D, 6020B
L1790474-15	DUP-02-WG-20241017	7470A, 6010D, 6020B
R4141842-3		6020B

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	587		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.5		1.00	1	10/21/2024 22:37	WG2385378
Fluoride	ND		0.150	1	10/21/2024 22:37	WG2385378
Sulfate	271		50.0	10	10/22/2024 03:05	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.94	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-01 WG2385247: 7.94 at 18.9C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 18:04	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:35	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.41		0.200	1	11/01/2024 14:07	WG2387810
Boron,Dissolved	4.38		0.200	1	11/03/2024 15:11	WG2393512
Calcium	123		1.00	1	11/01/2024 14:07	WG2387810
Calcium,Dissolved	121		1.00	1	11/03/2024 15:11	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 14:52	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:36	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 14:52	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Barium	0.108		0.00200	1	11/01/2024 14:52	WG2387926
Barium,Dissolved	0.103		0.00200	1	11/01/2024 17:36	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 14:52	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 14:52	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:36	WG2387793
Chromium	ND		0.00200	1	11/01/2024 14:52	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 14:52	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Lead	ND		0.00200	1	11/01/2024 14:52	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Lithium	0.0328		0.00200	1	11/01/2024 14:52	WG2387926
Lithium,Dissolved	0.0357		0.00200	1	11/01/2024 17:36	WG2387793
Molybdenum	0.0608		0.00500	1	11/01/2024 14:52	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0626		0.00500	1	11/01/2024 17:36	WG2387793
Selenium	ND		0.00200	1	11/01/2024 14:52	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793
Thallium	ND		0.00200	1	11/01/2024 14:52	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:36	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	403		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	8.61		1.00	1	10/21/2024 22:50	WG2385378
Fluoride	ND		0.150	1	10/21/2024 22:50	WG2385378
Sulfate	29.4		5.00	1	10/21/2024 22:50	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.33	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-02 WG2385247: 7.33 at 19.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 18:37	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:37	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	11/01/2024 14:12	WG2387810
Boron,Dissolved	ND		0.200	1	11/03/2024 15:13	WG2393512
Calcium	102		1.00	1	11/01/2024 14:12	WG2387810
Calcium,Dissolved	99.9		1.00	1	11/03/2024 15:13	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:42	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:39	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 15:42	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793
Barium	0.192		0.00200	1	11/01/2024 15:42	WG2387926
Barium,Dissolved	0.188		0.00200	1	11/01/2024 17:39	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 15:42	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 15:42	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:39	WG2387793
Chromium	0.00738		0.00200	1	11/01/2024 15:42	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 15:42	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793
Lead	ND		0.00200	1	11/01/2024 15:42	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793
Lithium	0.0187		0.00200	1	11/01/2024 15:42	WG2387926
Lithium,Dissolved	0.0196		0.00200	1	11/01/2024 17:39	WG2387793
Molybdenum	ND		0.00500	1	11/01/2024 15:42	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	11/01/2024 17:39	WG2387793
Selenium	0.0187		0.00200	1	11/01/2024 15:42	WG2387926
Selenium,Dissolved	0.0193		0.00200	1	11/01/2024 17:39	WG2387793
Thallium	ND		0.00200	1	11/01/2024 15:42	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:39	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	741		13.3	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	9.63		1.00	1	10/21/2024 23:03	WG2385378
Fluoride	ND		0.150	1	10/21/2024 23:03	WG2385378
Sulfate	46.3		5.00	1	10/21/2024 23:03	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.93	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-03 WG2385247: 6.93 at 19C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 18:39	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:40	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.228		0.200	1	11/01/2024 14:13	WG2387810
Boron,Dissolved	0.225		0.200	1	11/03/2024 15:18	WG2393512
Calcium	219		1.00	1	11/01/2024 14:13	WG2387810
Calcium,Dissolved	171		1.00	1	11/03/2024 15:18	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:45	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:42	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 15:45	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Barium	0.351		0.00200	1	11/01/2024 15:45	WG2387926
Barium,Dissolved	0.265		0.00200	1	11/01/2024 17:42	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 15:45	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 15:45	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:42	WG2387793
Chromium	ND		0.00200	1	11/01/2024 15:45	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 15:45	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Lead	ND		0.00200	1	11/01/2024 15:45	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Lithium	0.0169		0.00200	1	11/01/2024 15:45	WG2387926
Lithium,Dissolved	0.0173		0.00200	1	11/01/2024 17:42	WG2387793
Molybdenum	ND		0.00500	1	11/01/2024 15:45	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	11/01/2024 17:42	WG2387793
Selenium	ND		0.00200	1	11/01/2024 15:45	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793
Thallium	ND		0.00200	1	11/01/2024 15:45	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:42	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	758		20.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	13.2		1.00	1	10/21/2024 23:16	WG2385378
Fluoride	ND		0.150	1	10/21/2024 23:16	WG2385378
Sulfate	ND		5.00	1	10/21/2024 23:16	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.16	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-04 WG2385247: 7.16 at 19.3C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 18:41	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:42	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.567		0.200	1	11/01/2024 14:15	WG2387810
Boron,Dissolved	0.562		0.200	1	11/03/2024 15:19	WG2393512
Calcium	162		1.00	1	11/01/2024 14:15	WG2387810
Calcium,Dissolved	152		1.00	1	11/03/2024 15:19	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:48	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:09	WG2387793
Arsenic	0.190		0.00200	1	11/01/2024 15:48	WG2387926
Arsenic,Dissolved	0.0557		0.00200	1	11/01/2024 18:09	WG2387793
Barium	0.474		0.0100	5	11/01/2024 16:26	WG2387926
Barium,Dissolved	0.305		0.00200	1	11/01/2024 18:09	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 15:48	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 15:48	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:09	WG2387793
Chromium	ND		0.00200	1	11/01/2024 15:48	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 15:48	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793
Lead	ND		0.00200	1	11/01/2024 15:48	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793
Lithium	0.0297		0.00200	1	11/01/2024 15:48	WG2387926
Lithium,Dissolved	0.0296		0.00200	1	11/01/2024 18:09	WG2387793
Molybdenum	ND		0.00500	1	11/01/2024 15:48	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	11/01/2024 18:09	WG2387793
Selenium	ND		0.00200	1	11/01/2024 15:48	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793
Thallium	ND		0.00200	1	11/01/2024 15:48	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:09	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	447		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	15.0		1.00	1	10/21/2024 23:54	WG2385378
Fluoride	ND		0.150	1	10/21/2024 23:54	WG2385378
Sulfate	32.9		5.00	1	10/21/2024 23:54	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.31	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-05 WG2385247: 7.31 at 19.3C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:04	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:49	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	11/01/2024 14:17	WG2387810
Boron,Dissolved	ND		0.200	1	11/03/2024 15:21	WG2393512
Calcium	129		1.00	1	11/01/2024 14:17	WG2387810
Calcium,Dissolved	113		1.00	1	11/03/2024 15:21	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:51	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:48	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 15:51	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Barium	0.342		0.00200	1	11/01/2024 15:51	WG2387926
Barium,Dissolved	0.334		0.00200	1	11/01/2024 17:48	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 15:51	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 15:51	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:48	WG2387793
Chromium	ND		0.00200	1	11/01/2024 15:51	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Cobalt	0.00242		0.00200	1	11/01/2024 15:51	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Lead	ND		0.00200	1	11/01/2024 15:51	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Lithium	0.0147		0.00200	1	11/01/2024 15:51	WG2387926
Lithium,Dissolved	0.0156		0.00200	1	11/01/2024 17:48	WG2387793
Molybdenum	ND		0.00500	1	11/01/2024 15:51	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	11/01/2024 17:48	WG2387793
Selenium	ND		0.00200	1	11/01/2024 15:51	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793
Thallium	ND		0.00200	1	11/01/2024 15:51	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:48	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	599		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	19.4		1.00	1	10/22/2024 00:06	WG2385378
Fluoride	ND		0.150	1	10/22/2024 00:06	WG2385378
Sulfate	148		5.00	1	10/22/2024 00:06	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.27	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:
L1790474-06 WG2385247: 7.27 at 19.2C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:07	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:52	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.58		0.200	1	11/01/2024 13:55	WG2387810
Boron,Dissolved	4.60		0.200	1	11/03/2024 15:22	WG2393512
Calcium	126		1.00	1	11/01/2024 13:55	WG2387810
Calcium,Dissolved	112		1.00	1	11/03/2024 15:22	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:54	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:51	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 15:54	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Barium	0.233		0.00200	1	11/01/2024 15:54	WG2387926
Barium,Dissolved	0.162		0.00200	1	11/01/2024 17:51	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 15:54	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 15:54	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:51	WG2387793
Chromium	ND		0.00200	1	11/01/2024 15:54	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 15:54	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Lead	ND		0.00200	1	11/01/2024 15:54	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Lithium	0.0370		0.00200	1	11/01/2024 15:54	WG2387926
Lithium,Dissolved	0.0393		0.00200	1	11/01/2024 17:51	WG2387793
Molybdenum	0.187		0.00500	1	11/01/2024 15:54	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.189		0.00500	1	11/01/2024 17:51	WG2387793
Selenium	ND		0.00200	1	11/01/2024 15:54	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793
Thallium	ND		0.00200	1	11/01/2024 15:54	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:51	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	568		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	14.7		1.00	1	10/22/2024 00:19	WG2385378
Fluoride	ND		0.150	1	10/22/2024 00:19	WG2385378
Sulfate	214		50.0	10	10/22/2024 03:55	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.42	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-07 WG2385247: 7.42 at 19.2C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:09	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:54	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	3.99		0.200	1	11/01/2024 14:18	WG2387810
Boron,Dissolved	4.03		0.200	1	11/03/2024 15:24	WG2393512
Calcium	120		1.00	1	11/01/2024 14:18	WG2387810
Calcium,Dissolved	118		1.00	1	11/03/2024 15:24	WG2393512

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:08	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 17:54	WG2387793
Arsenic	0.0103		0.00200	1	11/01/2024 16:08	WG2387926
Arsenic,Dissolved	0.00485		0.00200	1	11/01/2024 17:54	WG2387793
Barium	0.119		0.00200	1	11/01/2024 16:08	WG2387926
Barium,Dissolved	0.113		0.00200	1	11/01/2024 17:54	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:08	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:08	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 17:54	WG2387793
Chromium	ND		0.00200	1	11/01/2024 16:08	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 16:08	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793
Lead	ND		0.00200	1	11/01/2024 16:08	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793
Lithium	0.0168		0.00200	1	11/01/2024 16:08	WG2387926
Lithium,Dissolved	0.0173		0.00200	1	11/01/2024 17:54	WG2387793
Molybdenum	0.0527		0.00500	1	11/01/2024 16:08	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0542		0.00500	1	11/01/2024 17:54	WG2387793
Selenium	ND		0.00200	1	11/01/2024 16:08	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:08	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 17:54	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	560		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	18.9		1.00	1	10/22/2024 00:32	WG2385378
Fluoride	0.199		0.150	1	10/22/2024 00:32	WG2385378
Sulfate	192		5.00	1	10/22/2024 00:32	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.53	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-08 WG2385247: 7.53 at 19.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:12	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:57	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	6.19		0.200	1	11/01/2024 14:20	WG2387810
Boron,Dissolved	6.29		0.200	1	10/31/2024 19:35	WG2387787
Calcium	111		1.00	1	11/01/2024 14:20	WG2387810
Calcium,Dissolved	111		1.00	1	10/31/2024 19:35	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:11	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:12	WG2387793
Arsenic	0.00236		0.00200	1	11/01/2024 16:11	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Barium	0.158		0.00200	1	11/01/2024 16:11	WG2387926
Barium,Dissolved	0.116		0.00200	1	11/01/2024 18:12	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:11	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:11	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:12	WG2387793
Chromium	ND		0.00200	1	11/01/2024 16:11	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 16:11	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Lead	0.00237		0.00200	1	11/01/2024 16:11	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Lithium	0.0314		0.00200	1	11/01/2024 16:11	WG2387926
Lithium,Dissolved	0.0316		0.00200	1	11/01/2024 18:12	WG2387793
Molybdenum	0.164		0.00500	1	11/01/2024 16:11	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.168		0.00500	1	11/01/2024 18:12	WG2387793
Selenium	ND		0.00200	1	11/01/2024 16:11	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:11	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:12	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	370		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.7		1.00	1	10/22/2024 00:45	WG2385378
Fluoride	ND		0.150	1	10/22/2024 00:45	WG2385378
Sulfate	40.8		5.00	1	10/22/2024 00:45	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.51	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-09 WG2385247: 7.51 at 19.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:14	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/22/2024 18:59	WG2385490

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.471		0.200	1	11/01/2024 14:22	WG2387810
Boron,Dissolved	0.466		0.200	1	10/31/2024 19:37	WG2387787
Calcium	88.4		1.00	1	11/01/2024 14:22	WG2387810
Calcium,Dissolved	89.4		1.00	1	10/31/2024 19:37	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:14	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:15	WG2387793
Arsenic	0.00219		0.00200	1	11/01/2024 16:14	WG2387926
Arsenic,Dissolved	0.00210		0.00200	1	11/01/2024 18:15	WG2387793
Barium	0.116		0.00200	1	11/01/2024 16:14	WG2387926
Barium,Dissolved	0.111		0.00200	1	11/01/2024 18:15	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:14	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:15	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:14	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:15	WG2387793
Chromium	0.00338		0.00200	1	11/01/2024 16:14	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:15	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 16:14	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:15	WG2387793
Lead	ND		0.00200	1	11/01/2024 16:14	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:15	WG2387793
Lithium	0.0160		0.00200	1	11/01/2024 16:14	WG2387926
Lithium,Dissolved	0.0162		0.00200	1	11/01/2024 18:15	WG2387793
Molybdenum	0.0196		0.00500	1	11/01/2024 16:14	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0194		0.00500	1	11/01/2024 18:15	WG2387793
Selenium	0.0182		0.00200	1	11/01/2024 16:14	WG2387926
Selenium,Dissolved	0.0191		0.00200	1	11/01/2024 18:15	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:14	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:15	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	816		13.3	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	ND		10.0	10	10/22/2024 00:57	WG2385378
Fluoride	ND		1.50	10	10/22/2024 00:57	WG2385378
Sulfate	385		50.0	10	10/22/2024 00:57	WG2385378

Sample Narrative:

L1790474-10 WG2385378: Dilution due to matrix impact on instrumentation at lower dilution

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.20	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-10 WG2385247: 7.2 at 19.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:16	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/24/2024 15:59	WG2385970

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	8.09		0.200	1	11/01/2024 14:23	WG2387810
Boron,Dissolved	8.21		0.200	1	10/31/2024 19:38	WG2387787
Calcium	170		1.00	1	11/01/2024 14:23	WG2387810
Calcium,Dissolved	155		1.00	1	10/31/2024 19:38	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:17	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:19	WG2387793
Arsenic	0.0267		0.00200	1	11/01/2024 16:17	WG2387926
Arsenic,Dissolved	0.00280		0.00200	1	11/01/2024 18:19	WG2387793
Barium	0.173		0.00200	1	11/01/2024 16:17	WG2387926
Barium,Dissolved	0.141		0.00200	1	11/01/2024 18:19	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:17	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:17	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:19	WG2387793
Chromium	0.0191		0.00200	1	11/01/2024 16:17	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793
Cobalt	0.00570		0.00200	1	11/01/2024 16:17	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793
Lead	0.0176		0.00200	1	11/01/2024 16:17	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Lithium	0.0480		0.00200	1	11/01/2024 16:17	WG2387926
Lithium,Dissolved	0.0444		0.00200	1	11/01/2024 18:19	WG2387793
Molybdenum	0.129		0.00500	1	11/01/2024 16:17	WG2387926
Molybdenum,Dissolved	0.163		0.00500	1	11/01/2024 18:19	WG2387793
Selenium	ND		0.00200	1	11/01/2024 16:17	WG2387926
Selenium,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:17	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:19	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	384		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	6.15		1.00	1	10/22/2024 01:10	WG2385378
Fluoride	ND		0.150	1	10/22/2024 01:10	WG2385378
Sulfate	58.5		5.00	1	10/22/2024 01:10	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.85	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-11 WG2385247: 6.85 at 19C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:19	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/24/2024 16:07	WG2385970

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.242		0.200	1	11/01/2024 14:25	WG2387810
Boron,Dissolved	0.238		0.200	1	10/31/2024 19:40	WG2387787
Calcium	89.5		1.00	1	11/01/2024 14:25	WG2387810
Calcium,Dissolved	91.1		1.00	1	10/31/2024 19:40	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:20	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:22	WG2387793
Arsenic	ND		0.00200	1	11/01/2024 16:20	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793
Barium	0.165		0.00200	1	11/01/2024 16:20	WG2387926
Barium,Dissolved	0.162		0.00200	1	11/01/2024 18:22	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:20	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:20	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:22	WG2387793
Chromium	0.00206		0.00200	1	11/01/2024 16:20	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 16:20	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793
Lead	ND		0.00200	1	11/01/2024 16:20	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793
Lithium	0.0152		0.00200	1	11/01/2024 16:20	WG2387926
Lithium,Dissolved	0.0165		0.00200	1	11/01/2024 18:22	WG2387793
Molybdenum	ND		0.00500	1	11/01/2024 16:20	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND		0.00500	1	11/01/2024 18:22	WG2387793
Selenium	0.00327		0.00200	1	11/01/2024 16:20	WG2387926
Selenium,Dissolved	0.00341		0.00200	1	11/01/2024 18:22	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:20	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:22	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	418		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.1		1.00	1	10/22/2024 01:23	WG2385378
Fluoride	ND		0.150	1	10/22/2024 01:23	WG2385378
Sulfate	65.6		5.00	1	10/22/2024 01:23	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.46	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-12 WG2385247: 7.46 at 19C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:21	WG2385483
Mercury,Dissolved	ND		0.000200	1	10/24/2024 16:10	WG2385970

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	1.07		0.200	1	11/01/2024 14:27	WG2387810
Boron,Dissolved	1.10		0.200	1	10/31/2024 19:45	WG2387787
Calcium	101		1.00	1	11/01/2024 14:27	WG2387810
Calcium,Dissolved	102		1.00	1	10/31/2024 19:45	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 16:23	WG2387926
Antimony,Dissolved	ND		0.00400	1	11/01/2024 18:25	WG2387793
Arsenic	0.00219		0.00200	1	11/01/2024 16:23	WG2387926
Arsenic,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793
Barium	0.142		0.00200	1	11/01/2024 16:23	WG2387926
Barium,Dissolved	0.126		0.00200	1	11/01/2024 18:25	WG2387793
Beryllium	ND		0.00200	1	11/01/2024 16:23	WG2387926
Beryllium,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793
Cadmium	ND		0.00100	1	11/01/2024 16:23	WG2387926
Cadmium,Dissolved	ND		0.00100	1	11/01/2024 18:25	WG2387793
Chromium	0.00762		0.00200	1	11/01/2024 16:23	WG2387926
Chromium,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793
Cobalt	ND		0.00200	1	11/01/2024 16:23	WG2387926
Cobalt,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793
Lead	ND		0.00200	1	11/01/2024 16:23	WG2387926
Lead,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793
Lithium	0.0293		0.00200	1	11/01/2024 16:23	WG2387926
Lithium,Dissolved	0.0314		0.00200	1	11/01/2024 18:25	WG2387793
Molybdenum	0.0458		0.00500	1	11/01/2024 16:23	WG2387926

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0502		0.00500	1	11/01/2024 18:25	WG2387793
Selenium	0.0176		0.00200	1	11/01/2024 16:23	WG2387926
Selenium,Dissolved	0.0172		0.00200	1	11/01/2024 18:25	WG2387793
Thallium	ND		0.00200	1	11/01/2024 16:23	WG2387926
Thallium,Dissolved	ND		0.00200	1	11/01/2024 18:25	WG2387793

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	322		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	8.81		1.00	1	10/22/2024 01:36	WG2385378
Fluoride	ND		0.150	1	10/22/2024 01:36	WG2385378
Sulfate	13.9		5.00	1	10/22/2024 01:36	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.97	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-13 WG2385247: 7.97 at 19C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/25/2024 19:24	WG2385483

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	11/01/2024 13:37	WG2387810
Calcium	71.5		1.00	1	11/01/2024 13:37	WG2387810

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:14	WG2387929
Arsenic	ND		0.00200	1	11/01/2024 15:14	WG2387929
Barium	0.0182		0.00200	1	11/01/2024 15:14	WG2387929
Beryllium	ND		0.00200	1	11/01/2024 15:14	WG2387929
Cadmium	ND		0.00100	1	11/01/2024 15:14	WG2387929
Chromium	ND		0.00200	1	11/01/2024 15:14	WG2387929
Cobalt	ND		0.00200	1	11/01/2024 15:14	WG2387929
Lead	ND		0.00200	1	11/01/2024 15:14	WG2387929
Lithium	0.00219		0.00200	1	11/01/2024 15:14	WG2387929
Molybdenum	ND		0.00500	1	11/01/2024 15:14	WG2387929
Selenium	ND		0.00200	1	11/01/2024 15:14	WG2387929
Thallium	ND		0.00200	1	11/01/2024 15:14	WG2387929

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	543		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	18.7		1.00	1	10/22/2024 01:48	WG2385378
Fluoride	0.177		0.150	1	10/22/2024 01:48	WG2385378
Sulfate	191		5.00	1	10/22/2024 01:48	WG2385378

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.54	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-14 WG2385247: 7.54 at 19.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/24/2024 18:48	WG2385487
Mercury,Dissolved	ND		0.000200	1	10/24/2024 16:12	WG2385970

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	6.23		0.200	1	11/01/2024 13:38	WG2387810
Boron,Dissolved	6.28		0.200	1	10/31/2024 19:47	WG2387787
Calcium	112		1.00	1	11/01/2024 13:38	WG2387810
Calcium,Dissolved	112		1.00	1	10/31/2024 19:47	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:27	WG2387929
Antimony,Dissolved	ND		0.00400	1	11/04/2024 16:37	WG2387797
Arsenic	0.00374		0.00200	1	11/01/2024 15:27	WG2387929
Arsenic,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Barium	0.166		0.00200	1	11/01/2024 15:27	WG2387929
Barium,Dissolved	0.117		0.00200	1	11/04/2024 16:37	WG2387797
Beryllium	ND		0.00200	1	11/01/2024 15:27	WG2387929
Beryllium,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Cadmium	ND		0.00100	1	11/01/2024 15:27	WG2387929
Cadmium,Dissolved	ND		0.00100	1	11/04/2024 16:37	WG2387797
Chromium	0.00211		0.00200	1	11/01/2024 15:27	WG2387929
Chromium,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Cobalt	ND		0.00200	1	11/01/2024 15:27	WG2387929
Cobalt,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Lead	ND		0.00200	1	11/01/2024 15:27	WG2387929
Lead,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Lithium	0.0304		0.00200	1	11/01/2024 15:27	WG2387929
Lithium,Dissolved	0.0303		0.00200	1	11/04/2024 16:37	WG2387797
Molybdenum	0.165		0.00500	1	11/01/2024 15:27	WG2387929

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.165		0.00500	1	11/04/2024 16:37	WG2387797
Selenium	ND		0.00200	1	11/01/2024 15:27	WG2387929
Selenium,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797
Thallium	ND		0.00200	1	11/01/2024 15:27	WG2387929
Thallium,Dissolved	ND		0.00200	1	11/04/2024 16:37	WG2387797

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	371		10.0	1	10/19/2024 17:11	WG2385254

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	11.1		1.00	1	10/22/2024 01:59	WG2385382
Fluoride	0.203		0.150	1	10/22/2024 01:59	WG2385382
Sulfate	41.5		5.00	1	10/22/2024 01:59	WG2385382

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.56	T8	1	10/18/2024 22:40	WG2385247

Sample Narrative:

L1790474-15 WG2385247: 7.56 at 19.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	10/24/2024 18:59	WG2385487
Mercury,Dissolved	ND		0.000200	1	10/24/2024 16:15	WG2385970

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.466		0.200	1	11/01/2024 13:40	WG2387810
Boron,Dissolved	0.469		0.200	1	10/31/2024 19:49	WG2387787
Calcium	87.5		1.00	1	11/01/2024 13:40	WG2387810
Calcium,Dissolved	89.7		1.00	1	10/31/2024 19:49	WG2387787

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	11/01/2024 15:31	WG2387929
Antimony,Dissolved	ND		0.00400	1	11/04/2024 16:40	WG2387797
Arsenic	0.00210		0.00200	1	11/01/2024 15:31	WG2387929
Arsenic,Dissolved	0.00213		0.00200	1	11/04/2024 16:40	WG2387797
Barium	0.121		0.00200	1	11/01/2024 15:31	WG2387929
Barium,Dissolved	0.114		0.00200	1	11/04/2024 16:40	WG2387797
Beryllium	ND		0.00200	1	11/01/2024 15:31	WG2387929
Beryllium,Dissolved	ND		0.00200	1	11/04/2024 16:40	WG2387797
Cadmium	ND		0.00100	1	11/01/2024 15:31	WG2387929
Cadmium,Dissolved	ND		0.00100	1	11/04/2024 16:40	WG2387797
Chromium	0.00350		0.00200	1	11/01/2024 15:31	WG2387929
Chromium,Dissolved	ND		0.00200	1	11/04/2024 16:40	WG2387797
Cobalt	ND		0.00200	1	11/01/2024 15:31	WG2387929
Cobalt,Dissolved	ND		0.00200	1	11/04/2024 16:40	WG2387797
Lead	ND		0.00200	1	11/01/2024 15:31	WG2387929
Lead,Dissolved	ND		0.00200	1	11/04/2024 16:40	WG2387797
Lithium	0.0149		0.00200	1	11/01/2024 15:31	WG2387929
Lithium,Dissolved	0.0151		0.00200	1	11/04/2024 16:40	WG2387797
Molybdenum	0.0191		0.00500	1	11/01/2024 15:31	WG2387929

Metals (ICPMS) by Method 6020B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0190		0.00500	1	11/04/2024 16:40	WG2387797
Selenium	0.0190		0.00200	1	11/01/2024 15:31	WG2387929
Selenium,Dissolved	0.0175		0.00200	1	11/04/2024 16:40	WG2387797
Thallium	ND		0.00200	1	11/01/2024 15:31	WG2387929
Thallium,Dissolved	ND		0.00200	1	11/04/2024 16:40	WG2387797

Method Blank (MB)

(MB) R4136127-1 10/19/24 17:11

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

L1790437-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1790437-07 10/19/24 17:11 • (DUP) R4136127-3 10/19/24 17:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	304	309	1	1.63		10

L1790474-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1790474-15 10/19/24 17:11 • (DUP) R4136127-4 10/19/24 17:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	371	385	1	3.70		10

Laboratory Control Sample (LCS)

(LCS) R4136127-2 10/19/24 17:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8890	101	85.0-115	

Method Blank (MB)

(MB) R4135722-1 10/21/24 20:56

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.547	1.00
Fluoride	U		0.0761	0.150
Sulfate	U		0.637	5.00

L1790069-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1790069-07 10/21/24 21:34 • (DUP) R4135722-3 10/22/24 05:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	33.4	34.4	1	2.94		15
Fluoride	0.412	0.389	1	5.72		15
Sulfate	19.2	20.3	1	5.98		15

L1790069-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1790069-11 10/21/24 22:25 • (DUP) R4135722-6 10/22/24 06:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	ND	ND	1	0.000		15
Fluoride	ND	ND	1	0.000		15
Sulfate	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R4135722-2 10/21/24 21:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	38.7	96.9	80.0-120	
Fluoride	8.00	8.23	103	80.0-120	
Sulfate	40.0	39.0	97.4	80.0-120	

L1790069-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790069-07 10/21/24 21:34 • (MS) R4135722-4 10/22/24 05:50 • (MSD) R4135722-5 10/22/24 06:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	33.4	64.1	65.8	76.7	81.2	1	80.0-120	J6		2.73	15
Fluoride	8.00	0.412	8.08	8.39	95.9	99.7	1	80.0-120			3.67	15
Sulfate	40.0	19.2	53.5	54.4	85.8	88.2	1	80.0-120			1.77	15

L1790069-11 Original Sample (OS) • Matrix Spike (MS)

(OS) L1790069-11 10/21/24 22:25 • (MS) R4135722-7 10/22/24 06:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40.0	ND	38.0	95.0	1	80.0-120	
Fluoride	8.00	ND	7.99	99.9	1	80.0-120	
Sulfate	40.0	ND	38.2	95.6	1	80.0-120	

Method Blank (MB)

(MB) R4136364-1 10/22/24 01:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.547	1.00
Fluoride	U		0.0761	0.150
Sulfate	U		0.637	5.00

L1790474-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1790474-15 10/22/24 01:59 • (DUP) R4136364-3 10/22/24 14:28

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	11.1	11.1	1	0.156		15
Fluoride	0.203	0.151	1	29.8	J3	15
Sulfate	41.5	41.5	1	0.0231		15

Laboratory Control Sample (LCS)

(LCS) R4136364-2 10/22/24 01:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	41.9	105	80.0-120	
Fluoride	8.00	8.57	107	80.0-120	
Sulfate	40.0	42.9	107	80.0-120	

L1790474-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-15 10/22/24 01:59 • (MS) R4136364-4 10/22/24 14:45 • (MSD) R4136364-5 10/22/24 15:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	11.1	47.0	45.5	89.8	86.0	1	80.0-120			3.34	15
Fluoride	8.00	0.203	8.01	7.75	97.5	94.4	1	80.0-120			3.20	15
Sulfate	40.0	41.5	72.6	70.2	77.7	71.6	1	80.0-120	J6	J6	3.40	15

L1790474-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1790474-01 10/18/24 22:40 • (DUP) R4134842-2 10/18/24 22:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.94	7.95	1	0.126		1

Sample Narrative:

OS: 7.94 at 18.9C

DUP: 7.95 at 18.9C

L1790606-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1790606-02 10/18/24 22:40 • (DUP) R4134842-3 10/18/24 22:40

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.56	6.57	1	0.152		1

Sample Narrative:

OS: 6.56 at 19.3C

DUP: 6.57 at 19.2C

Laboratory Control Sample (LCS)

(LCS) R4134842-1 10/18/24 22:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:

LCS: 10.02 at 19.4C

QUALITY CONTROL SUMMARY

L1790474-01,02,03,04,05,06,07,08,09,10,11,12,13

Method Blank (MB)

(MB) R4137876-1 10/25/24 17:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4137876-2 10/25/24 18:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00320	107	80.0-120	

L1790474-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-01 10/25/24 18:04 • (MS) R4137876-4 10/25/24 18:09 • (MSD) R4137876-5 10/25/24 18:12

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00318	0.00323	106	108	1	75.0-125			1.56	20

Method Blank (MB)

(MB) R4137442-1 10/24/24 18:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4137442-2 10/24/24 18:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00265	88.3	80.0-120	

L1790474-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-14 10/24/24 18:48 • (MS) R4137442-4 10/24/24 18:54 • (MSD) R4137442-5 10/24/24 18:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00260	0.00262	86.7	87.2	1	75.0-125			0.581	20

QUALITY CONTROL SUMMARY

L1790474-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R4136138-1 10/22/24 17:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4136138-2 10/22/24 17:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	0.00300	0.00303	101	80.0-120	

L1789540-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1789540-01 10/22/24 17:56 • (MS) R4136138-4 10/22/24 18:01 • (MSD) R4136138-5 10/22/24 18:03

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	ND	0.00303	0.00316	101	105	1	75.0-125			4.24	20

QUALITY CONTROL SUMMARY

L1790474-10,11,12,14,15

Method Blank (MB)

(MB) R4137309-1 10/24/24 15:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.0000700	0.000200

Laboratory Control Sample (LCS)

(LCS) R4137309-2 10/24/24 15:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	0.00300	0.00346	115	80.0-120	

L1791012-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1791012-05 10/24/24 15:49 • (MS) R4137309-4 10/24/24 15:54 • (MSD) R4137309-5 10/24/24 15:56

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	0.00300	ND	0.00329	0.00309	110	103	1	75.0-125			6.02	20

Method Blank (MB)

(MB) R4140519-1 10/31/24 19:24

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron,Dissolved	U		0.0200	0.200
Calcium,Dissolved	U		0.0793	1.00

Laboratory Control Sample (LCS)

(LCS) R4140519-2 10/31/24 19:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	1.00	0.940	94.0	80.0-120	
Calcium,Dissolved	10.0	9.76	97.6	80.0-120	

L1790615-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790615-01 10/31/24 19:28 • (MS) R4140519-4 10/31/24 19:31 • (MSD) R4140519-5 10/31/24 19:33

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron,Dissolved	1.00	ND	1.00	1.02	93.5	95.5	1	75.0-125			1.95	20
Calcium,Dissolved	10.0	166	173	173	69.8	71.8	1	75.0-125	V	V	0.120	20

Method Blank (MB)

(MB) R4140949-1 11/01/24 13:52

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0200	0.200
Calcium	U		0.0793	1.00

Laboratory Control Sample (LCS)

(LCS) R4140949-2 11/01/24 13:54

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.950	95.0	80.0-120	
Calcium	10.0	9.85	98.5	80.0-120	

L1790474-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-06 11/01/24 13:55 • (MS) R4140949-4 11/01/24 13:59 • (MSD) R4140949-5 11/01/24 14:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1.00	4.58	5.48	5.48	90.5	89.9	1	75.0-125			0.119	20
Calcium	10.0	126	134	134	72.3	75.1	1	75.0-125	V		0.211	20

Method Blank (MB)

(MB) R4141402-1 11/03/24 14:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron,Dissolved	U		0.0200	0.200
Calcium,Dissolved	U		0.0793	1.00

Laboratory Control Sample (LCS)

(LCS) R4141402-2 11/03/24 14:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	1.00	0.984	98.4	80.0-120	
Calcium,Dissolved	10.0	9.91	99.1	80.0-120	

L1789575-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1789575-14 11/03/24 14:41 • (MS) R4141402-4 11/03/24 14:44 • (MSD) R4141402-5 11/03/24 14:46

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron,Dissolved	1.00	ND	0.992	0.997	96.9	97.5	1	75.0-125			0.517	20
Calcium,Dissolved	10.0	52.1	64.4	64.9	123	128	1	75.0-125		V	0.792	20

Method Blank (MB)

(MB) R4141034-1 11/01/24 16:44

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony,Dissolved	U		0.000310	0.00400
Arsenic,Dissolved	U		0.000120	0.00200
Barium,Dissolved	U		0.000500	0.00200
Beryllium,Dissolved	U		0.000200	0.00200
Cadmium,Dissolved	U		0.000120	0.00100
Chromium,Dissolved	U		0.000900	0.00200
Cobalt,Dissolved	U		0.000100	0.00200
Lead,Dissolved	U		0.000500	0.00200
Lithium,Dissolved	U		0.000600	0.00200
Molybdenum,Dissolved	U		0.000500	0.00500
Selenium,Dissolved	U		0.000250	0.00200
Thallium,Dissolved	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4141034-2 11/01/24 16:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	0.0500	0.0486	97.1	80.0-120	
Arsenic,Dissolved	0.0500	0.0480	95.9	80.0-120	
Barium,Dissolved	0.0500	0.0451	90.2	80.0-120	
Beryllium,Dissolved	0.0500	0.0484	96.8	80.0-120	
Cadmium,Dissolved	0.0500	0.0508	102	80.0-120	
Chromium,Dissolved	0.0500	0.0500	100	80.0-120	
Cobalt,Dissolved	0.0500	0.0504	101	80.0-120	
Lead,Dissolved	0.0500	0.0469	93.7	80.0-120	
Lithium,Dissolved	0.0500	0.0505	101	80.0-120	
Molybdenum,Dissolved	0.0500	0.0486	97.1	80.0-120	
Selenium,Dissolved	0.0500	0.0481	96.2	80.0-120	
Thallium,Dissolved	0.0500	0.0459	91.7	80.0-120	

L1790387-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790387-01 11/01/24 16:51 • (MS) R4141034-4 11/01/24 16:57 • (MSD) R4141034-5 11/01/24 17:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony,Dissolved	0.0500	ND	0.0506	0.0507	101	101	1	75.0-125			0.205	20
Arsenic,Dissolved	0.0500	ND	0.0488	0.0476	97.1	94.6	1	75.0-125			2.52	20
Barium,Dissolved	0.0500	0.0115	0.0583	0.0590	93.5	95.0	1	75.0-125			1.28	20

L1790387-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790387-01 11/01/24 16:51 • (MS) R4141034-4 11/01/24 16:57 • (MSD) R4141034-5 11/01/24 17:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium,Dissolved	0.0500	ND	0.0487	0.0478	97.5	95.7	1	75.0-125			1.88	20
Cadmium,Dissolved	0.0500	ND	0.0501	0.0494	100	98.8	1	75.0-125			1.34	20
Chromium,Dissolved	0.0500	ND	0.0499	0.0486	99.8	97.1	1	75.0-125			2.73	20
Cobalt,Dissolved	0.0500	ND	0.0499	0.0485	99.8	96.9	1	75.0-125			2.97	20
Lead,Dissolved	0.0500	ND	0.0462	0.0470	92.3	94.0	1	75.0-125			1.83	20
Lithium,Dissolved	0.0500	0.0470	0.0961	0.0959	98.1	97.7	1	75.0-125			0.203	20
Molybdenum,Dissolved	0.0500	ND	0.0510	0.0506	102	101	1	75.0-125			0.730	20
Selenium,Dissolved	0.0500	0.0367	0.0856	0.0857	97.7	97.9	1	75.0-125			0.0998	20
Thallium,Dissolved	0.0500	ND	0.0445	0.0455	89.1	91.1	1	75.0-125			2.27	20

Method Blank (MB)

(MB) R4141842-1 11/04/24 16:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony,Dissolved	U		0.000310	0.00400
Arsenic,Dissolved	U		0.000120	0.00200
Barium,Dissolved	U		0.000500	0.00200
Beryllium,Dissolved	U		0.000200	0.00200
Cadmium,Dissolved	U		0.000120	0.00100
Chromium,Dissolved	U		0.000900	0.00200
Cobalt,Dissolved	U		0.000100	0.00200
Lead,Dissolved	U		0.000500	0.00200
Lithium,Dissolved	U		0.000600	0.00200
Molybdenum,Dissolved	U		0.000500	0.00500
Selenium,Dissolved	U		0.000250	0.00200
Thallium,Dissolved	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4141842-2 11/04/24 16:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	0.0500	0.0502	100	80.0-120	
Arsenic,Dissolved	0.0500	0.0481	96.2	80.0-120	
Barium,Dissolved	0.0500	0.0470	94.0	80.0-120	
Beryllium,Dissolved	0.0500	0.0483	96.5	80.0-120	
Cadmium,Dissolved	0.0500	0.0491	98.2	80.0-120	
Chromium,Dissolved	0.0500	0.0501	100	80.0-120	
Cobalt,Dissolved	0.0500	0.0498	99.7	80.0-120	
Lead,Dissolved	0.0500	0.0479	95.7	80.0-120	
Lithium,Dissolved	0.0500	0.0498	99.6	80.0-120	
Molybdenum,Dissolved	0.0500	0.0474	94.7	80.0-120	
Selenium,Dissolved	0.0500	0.0475	95.1	80.0-120	
Thallium,Dissolved	0.0500	0.0497	99.4	80.0-120	

L1790704-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790704-01 11/04/24 16:24 • (MS) R4141842-4 11/04/24 16:30 • (MSD) R4141842-5 11/04/24 16:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony,Dissolved	0.0500	ND	0.0497	0.0498	99.4	99.7	1	75.0-125			0.257	20
Arsenic,Dissolved	0.0500	ND	0.0493	0.0477	97.9	94.7	1	75.0-125			3.21	20
Barium,Dissolved	0.0500	0.192	0.234	0.234	84.2	83.5	1	75.0-125			0.155	20

L1790704-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790704-01 11/04/24 16:24 • (MS) R4141842-4 11/04/24 16:30 • (MSD) R4141842-5 11/04/24 16:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium,Dissolved	0.0500	ND	0.0480	0.0471	96.1	94.1	1	75.0-125			2.04	20
Cadmium,Dissolved	0.0500	ND	0.0491	0.0480	98.3	96.0	1	75.0-125			2.33	20
Chromium,Dissolved	0.0500	ND	0.0501	0.0486	97.3	94.3	1	75.0-125			3.07	20
Cobalt,Dissolved	0.0500	ND	0.0490	0.0479	98.1	95.8	1	75.0-125			2.35	20
Lead,Dissolved	0.0500	ND	0.0494	0.0466	98.7	93.2	1	75.0-125			5.76	20
Lithium,Dissolved	0.0500	0.00467	0.0532	0.0527	97.1	96.0	1	75.0-125			1.06	20
Molybdenum,Dissolved	0.0500	ND	0.0474	0.0477	94.9	95.4	1	75.0-125			0.583	20
Selenium,Dissolved	0.0500	0.00476	0.0510	0.0508	92.5	92.1	1	75.0-125			0.367	20
Thallium,Dissolved	0.0500	ND	0.0507	0.0487	101	97.4	1	75.0-125			4.06	20

QUALITY CONTROL SUMMARY

L1790474-01,02,03,04,05,06,07,08,09,10,11,12

Method Blank (MB)

(MB) R4140974-1 11/01/24 14:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.000310	0.00400
Arsenic	U		0.000120	0.00200
Barium	U		0.000500	0.00200
Beryllium	U		0.000200	0.00200
Cadmium	U		0.000120	0.00100
Chromium	U		0.000900	0.00200
Cobalt	U		0.000100	0.00200
Lead	U		0.000500	0.00200
Lithium	U		0.000600	0.00200
Molybdenum	U		0.000500	0.00500
Selenium	U		0.000250	0.00200
Thallium	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4140974-2 11/01/24 14:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0494	98.9	80.0-120	
Arsenic	0.0500	0.0489	97.8	80.0-120	
Barium	0.0500	0.0471	94.3	80.0-120	
Beryllium	0.0500	0.0489	97.9	80.0-120	
Cadmium	0.0500	0.0513	103	80.0-120	
Chromium	0.0500	0.0514	103	80.0-120	
Cobalt	0.0500	0.0516	103	80.0-120	
Lead	0.0500	0.0493	98.6	80.0-120	
Lithium	0.0500	0.0493	98.7	80.0-120	
Molybdenum	0.0500	0.0485	96.9	80.0-120	
Selenium	0.0500	0.0469	93.7	80.0-120	
Thallium	0.0500	0.0480	96.1	80.0-120	

L1790474-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-01 11/01/24 14:52 • (MS) R4140974-4 11/01/24 14:58 • (MSD) R4140974-5 11/01/24 15:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	0.0500	ND	0.0507	0.0495	101	99.0	1	75.0-125			2.33	20
Arsenic	0.0500	ND	0.0511	0.0516	98.8	99.8	1	75.0-125			1.04	20
Barium	0.0500	0.108	0.156	0.155	96.1	92.7	1	75.0-125			1.12	20

L1790474-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-01 11/01/24 14:52 • (MS) R4140974-4 11/01/24 14:58 • (MSD) R4140974-5 11/01/24 15:01

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium	0.0500	ND	0.0488	0.0499	97.7	99.8	1	75.0-125			2.10	20
Cadmium	0.0500	ND	0.0516	0.0515	103	103	1	75.0-125			0.151	20
Chromium	0.0500	ND	0.0514	0.0523	103	105	1	75.0-125			1.69	20
Cobalt	0.0500	ND	0.0510	0.0519	102	104	1	75.0-125			1.61	20
Lead	0.0500	ND	0.0480	0.0490	96.0	98.0	1	75.0-125			2.06	20
Lithium	0.0500	0.0328	0.0810	0.0812	96.5	96.7	1	75.0-125			0.149	20
Molybdenum	0.0500	0.0608	0.110	0.109	99.1	96.5	1	75.0-125			1.19	20
Selenium	0.0500	ND	0.0485	0.0500	96.9	100	1	75.0-125			3.11	20
Thallium	0.0500	ND	0.0464	0.0473	92.7	94.5	1	75.0-125			1.93	20

QUALITY CONTROL SUMMARY

L1790474-13,14,15

Method Blank (MB)

(MB) R4140919-2 11/01/24 15:07

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.000310	0.00400
Arsenic	U		0.000120	0.00200
Barium	U		0.000500	0.00200
Beryllium	U		0.000200	0.00200
Cadmium	U		0.000120	0.00100
Chromium	U		0.000900	0.00200
Cobalt	U		0.000100	0.00200
Lead	U		0.000500	0.00200
Lithium	U		0.000600	0.00200
Molybdenum	U		0.000500	0.00500
Selenium	U		0.000250	0.00200
Thallium	U		0.000130	0.00200

Laboratory Control Sample (LCS)

(LCS) R4140919-3 11/01/24 15:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0545	109	80.0-120	
Arsenic	0.0500	0.0499	99.8	80.0-120	
Barium	0.0500	0.0497	99.3	80.0-120	
Beryllium	0.0500	0.0479	95.8	80.0-120	
Cadmium	0.0500	0.0475	95.0	80.0-120	
Chromium	0.0500	0.0510	102	80.0-120	
Cobalt	0.0500	0.0505	101	80.0-120	
Lead	0.0500	0.0480	96.1	80.0-120	
Lithium	0.0500	0.0473	94.6	80.0-120	
Molybdenum	0.0500	0.0486	97.3	80.0-120	
Selenium	0.0500	0.0481	96.3	80.0-120	
Thallium	0.0500	0.0458	91.6	80.0-120	

L1790474-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-13 11/01/24 15:14 • (MS) R4140919-5 11/01/24 15:21 • (MSD) R4140919-6 11/01/24 15:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	0.0500	ND	0.0570	0.0558	113	111	1	75.0-125			2.02	20
Arsenic	0.0500	ND	0.0502	0.0502	99.7	99.7	1	75.0-125			0.0145	20
Barium	0.0500	0.0182	0.0686	0.0685	101	100	1	75.0-125			0.258	20

L1790474-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790474-13 11/01/24 15:14 • (MS) R4140919-5 11/01/24 15:21 • (MSD) R4140919-6 11/01/24 15:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium	0.0500	ND	0.0472	0.0489	94.3	97.8	1	75.0-125			3.59	20
Cadmium	0.0500	ND	0.0484	0.0482	96.8	96.4	1	75.0-125			0.409	20
Chromium	0.0500	ND	0.0519	0.0521	101	101	1	75.0-125			0.265	20
Cobalt	0.0500	ND	0.0496	0.0507	99.1	101	1	75.0-125			2.29	20
Lead	0.0500	ND	0.0489	0.0497	97.9	99.4	1	75.0-125			1.48	20
Lithium	0.0500	0.00219	0.0500	0.0519	95.6	99.5	1	75.0-125			3.85	20
Molybdenum	0.0500	ND	0.0504	0.0503	99.8	99.4	1	75.0-125			0.357	20
Selenium	0.0500	ND	0.0493	0.0500	97.7	99.0	1	75.0-125			1.31	20
Thallium	0.0500	ND	0.0467	0.0457	93.3	91.4	1	75.0-125			2.11	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:
Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Pres Chk

Report to: **Randy Homburg**

Email To: **Randy.Homburg@erm.com;Tim.Wilson@erm.co**

Project Description: **Grand Tower Energy Center Groundwater 4Q24**

City/State Collected: Grand Tower, IL

Please Circle: PT MT CT ET

Phone: **314-682-3980**

Client Project # **0599247**

Lab Project # **ERMSCMO-0599247**

Collected by (print): Marshall Arendell

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day Standard

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions 125mlHDPE-NoPres	Dissolved Metals 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	pH 125mlHDPE-NoPres	Remarks	Sample # (lab only)
APW-03-WG-2024 1016	Grab	GW	55.27	10/16/24	1500	5	X	X	X	X	X		-01
APW-08-WG-2024 1016		GW	57.70	10/16/24	1625	5	X	X	X	X	X		-02
APW-07-WG-2024 1016		GW	58.28	10/16/24	1745	5	X	X	X	X	X		-03
APW-10S-WG-2024 1015		GW	57.73	10/15/24	1700	5	X	X	X	X	X		-04
APW-10D-WG-2024 1015		GW	94.26	10/15/24	1535	5	X	X	X	X	X		-05
APW-06S-WG-2024 1016		GW	59.80	10/16/24	1035	5	X	X	X	X	X		-06
APW-06D-WG-2024 1016		GW	152.56	10/16/24	0915	5	X	X	X	X	X		-07
APW-05R-WG-2024 1016		GW	58.50	10/16/24	1225	5	X	X	X	X	X		-08
APW-09-WG-2024 1017		GW	59.05	10/17/24	0950	5	X	X	X	X	X		-09
APW-02-WG-2024 1015		GW	54.03	10/15/24	1338	5	X	X	X	X	X		-10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature) ERM — Date: 10/17/24 — Time: 1240

Received by: (Signature) — 10/17/24 1240

Relinquished by : (Signature) — Date: 10/17/24 — Time: 1240

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature) — Date: 10/18/24 — Time: 0900

Trip Blank Received: Yes / (No) HCL / MeoH TBR

Temp: °C Bottles Received: 74

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Sample Receipt Checklist
COC Seal Present/Intact: __NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L790474

Table # K001

Acctnum: **ERMSCMO**

Template: **T243415**

Prelogin: **P1103193**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEx Ground**

Company Name/Address:	Billing Information:	Pres Chk
ERM - St. Louis, MO **1968 Craig Road, Suite 100** **Saint Louis, MO 63146**	**Accounts Payable Dept.** **1701 Golf Road, Suite 1-1000** **Rolling Meadows, IL 60008-4242**	

Chain of Custody Page 2 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: **Randy Homburg**	Email To: **Randy.Homburg@erm.com;Tim.Wilson@erm.co**
Project Description: **Grand Tower Energy Center Groundwater 4Q24**	City/State Collected: Grand Tower, IL — Please Circle: PT MT (CT) ET
Phone: **314-682-3980**	Client Project # **0599247** — Lab Project # **ERMSCMO-0599247**
Collected by (print): Marshell Arendell	Site/Facility ID # — P.O. #
Collected by (signature): [signature]	Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day — Quote # — Date Results Needed: Standard
Immediately Packed on Ice N ___ Y ✓	

SDG # L1790474
Table #
Acctnum: **ERMSCMO**
Template: **T243415**
Prelogin: **P1103193**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEX Ground**

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions 125mlHDPE-NoPres	Dissolved Metals 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	pH 125mlHDPE-NoPres	Remarks	Sample # (lab only)
APW-01R-WG-2024 1015	Grab	GW	54.03	10/15/24	1825	5	X	X	X	X	X		-11
APW-04-WG-2024 1017	|	GW	55.77	10/17/24	0845	5	X	X	X	X	X		-12
EB-01-WG-2024 1015	|	GW	–	10/15/24	1015	4 (5)	X	✱	X	X	X	No diss. collected	-13
DUP-01-WG-2024 1016	|	GW	–	10/16/24	0001	5	X	X	X	X	X		-14
DUP-02-WG-2024 1017	|	GW		10/17/24	0002	5	X	X	X	X	X		-15

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ______

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via: __ UPS __ FedEx __ Courier ______

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP ✓Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	
[signature] ERM	10/17/24	1240	[signature] 10/17/24 1240	Trip Blank Received: Yes (No) HCL / MeoH TBR
[signature]	10/17/24	1240		Temp: °C Bottles Received: 74
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 10/18/24 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

L1790474

Fed Ex tracking #	Gun ID	Temperature
4091 2576 1310	TLA9	0.1 + 0.3 = 0.4
1309		4.3 + 0.3 = 4.6
1283		1.2 + 0.3 = 1.5
1294		1.7 + 0.3 = 2.0
1272		2.0 + 0.3 = 2.3
1261		0.3 + 0.3 = 0.6

Name

Date

APPENDIX E FOURTH QUARTER 2024 RADIOLOGICAL LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

November 14, 2024

ERM - St. Louis, MO

Sample Delivery Group:	L1790479
Samples Received:	10/18/2024
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 4Q24 Sampling
Report To:	Randy Homburg
	1968 Craig Road, Suite 100
	Saint Louis, MO 63146

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

TABLE OF CONTENTS

APW-03-WG-20241016 L1790479-01 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 15:00 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2389747	1	11/04/24 22:11	11/08/24 20:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/14/24 00:00	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/14/24 00:00	ZRG	Mt. Juliet, TN

APW-08-WG-20241016 L1790479-02 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 16:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2389747	1	11/04/24 22:11	11/08/24 20:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-07-WG-20241016 L1790479-03 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 17:45 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2389747	1	11/04/24 22:11	11/08/24 20:00	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-10S-WG-20241015 L1790479-04 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/15/24 17:00 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-10D-WG-20241015 L1790479-05 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/15/24 15:35 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-06S-WG-20241016 L1790479-06 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 10:35 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-06D-WG-20241016 L1790479-07 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 09:15 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-05R-WG-20241016 L1790479-08 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/16/24 12:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-09-WG-20241017 L1790479-09 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/17/24 09:50 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-02-WG-20241015 L1790479-10 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/15/24 13:38 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-01R-WG-20241015 L1790479-11 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/15/24 18:25 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

APW-04-WG-20241017 L1790479-12 Non-Potable Water

Collected by: Marshall Arendell | Collected date/time: 10/17/24 08:45 | Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

EB-01-WG-20241015 L1790479-13 Non-Potable Water

Collected by: Marshall Arendell
Collected date/time: 10/15/24 10:15
Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

DUP-01-WG-20241016 L1790479-14 Non-Potable Water

Collected by: Marshall Arendell
Collected date/time: 10/16/24 00:01
Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

DUP-02-WG-20241017 L1790479-15 Non-Potable Water

Collected by: Marshall Arendell
Collected date/time: 10/17/24 00:02
Received date/time: 10/18/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2391148	1	10/29/24 19:31	11/06/24 17:23	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2397322	1	11/07/24 12:51	11/08/24 20:15	ZRG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.09		0.261	0.487	0.446	0.236	11/08/2024 20:00	WG2389747
(T) Barium	*99.1*					*30.0-143*	*11/08/2024 20:00*	WG2389747
(T) Yttrium	*79.7*					*30.0-136*	*11/08/2024 20:00*	WG2389747

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.15		0.299	0.512	11/14/2024 00:00	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0651	U	0.146	0.203	0.252	0.181	11/14/2024 00:00	WG2397322
(T) Barium-133	*88.5*					*30.0-143*	*11/14/2024 00:00*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.874		0.414	0.714	0.732	0.388	11/08/2024 20:00	WG2389747
(T) Barium	*56.2*					*30.0-143*	*11/08/2024 20:00*	WG2389747
(T) Yttrium	*84.4*					*30.0-136*	*11/08/2024 20:00*	WG2389747

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.04		0.452	0.770	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.171	J	0.182	0.347	0.239	0.167	11/08/2024 20:15	WG2397322
(T) Barium-133	*104*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	1.77		0.347	0.650	0.573	0.303	11/08/2024 20:00	WG2389747
(T) Barium	*114*					*30.0-143*	*11/08/2024 20:00*	WG2389747
(T) Yttrium	*85.0*					*30.0-136*	*11/08/2024 20:00*	WG2389747

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.01		0.407	0.628	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.232	J	0.212	0.321	0.256	0.181	11/08/2024 20:15	WG2397322
(T) Barium-133	*90.9*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.934		0.351	0.639	0.629	0.329	11/06/2024 17:23	WG2391148
(T) Barium	*103*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*93.3*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.17		0.441	0.726	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.236	J	0.267	0.415	0.362	0.245	11/08/2024 20:15	WG2397322
(T) Barium-133	*92.6*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.282	J	0.302	0.537	0.557	0.292	11/06/2024 17:23	WG2391148
(T) Barium	*74.9*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*97.5*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.390	J	0.408	0.712	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.108	U	0.274	0.462	0.444	0.290	11/08/2024 20:15	WG2397322
(T) Barium-133	*93.6*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.895		0.221	0.434	0.382	0.202	11/06/2024 17:23	WG2391148
(T) Barium	*86.9*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*107*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.979		0.321	0.544	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0841	U	0.233	0.331	0.388	0.258	11/08/2024 20:15	WG2397322
(T) Barium-133	*102*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.642		0.345	0.575	0.627	0.328	11/06/2024 17:23	WG2391148
(T) Barium	*90.7*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*82.1*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.900		0.429	0.707	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.258	J	0.255	0.397	0.326	0.226	11/08/2024 20:15	WG2397322
(T) Barium-133	*95.1*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.468	J	0.329	0.567	0.602	0.315	11/06/2024 17:23	WG2391148
(T) Barium	*96.8*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*73.8*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.730		0.379	0.622	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.261		0.188	0.367	0.155	0.128	11/08/2024 20:15	WG2397322
(T) Barium-133	*96.2*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	-0.422	U	0.295	0.517	0.567	0.297	11/06/2024 17:23	WG2391148
(T) Barium	*88.3*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*89.8*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0259	U	0.303	0.586	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.0259	U	0.0696	0.122	0.149	0.123	11/08/2024 20:15	WG2397322
(T) Barium-133	*101*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.218	U	0.450	0.932	0.849	0.451	11/06/2024 17:23	WG2391148
(T) Barium	*130*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*92.4*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.51		0.634	0.885	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.29		0.447	1.04	0.251	0.183	11/08/2024 20:15	WG2397322
(T) Barium-133	*114*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.183	J	0.206	0.418	0.385	0.204	11/06/2024 17:23	WG2391148
(T) Barium	*104*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*88.1*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.309	J	0.251	0.427	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.126	J	0.144	0.206	0.185	0.145	11/08/2024 20:15	WG2397322
(T) Barium-133	*103*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.379	J	0.275	0.515	0.507	0.269	11/06/2024 17:23	WG2391148
(T) Barium	*77.9*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*88.2*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.494	J	0.305	0.535	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.116	J	0.132	0.230	0.170	0.133	11/08/2024 20:15	WG2397322
(T) Barium-133	*112*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.273	J	0.279	0.492	0.514	0.269	11/06/2024 17:23	WG2391148
(T) Barium	*106*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*86.9*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.421	J	0.315	0.541	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.148	J	0.147	0.272	0.170	0.134	11/08/2024 20:15	WG2397322
(T) Barium-133	*101*					*30.0-143*	*11/08/2024 20:15*	WG2397322

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.498		0.226	0.435	0.409	0.216	11/06/2024 17:23	WG2391148
(T) Barium	*98.4*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*91.9*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.498		0.261	0.489	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.000	U	0.130	0.161	0.268	0.184	11/08/2024 20:15	WG2397322
(T) Barium-133	*102*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.314	J	0.253	0.464	0.465	0.244	11/06/2024 17:23	WG2391148
(T) Barium	*99.6*					*30.0-143*	*11/06/2024 17:23*	WG2391148
(T) Yttrium	*89.0*					*30.0-136*	*11/06/2024 17:23*	WG2391148

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.536		0.315	0.506	11/08/2024 20:15	WG2397322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.222		0.187	0.325	0.200	0.152	11/08/2024 20:15	WG2397322
(T) Barium-133	*96.7*					*30.0-143*	*11/08/2024 20:15*	WG2397322

Method Blank (MB)

(MB) R4144729-1 11/08/24 20:00

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0958	U	0.161	0.296	0.156
(T) Barium	*118*		*118*		
(T) Yttrium	*89.2*		*89.2*		

L1790479-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1790479-03 11/08/24 20:00 • (DUP) R4144729-5 11/08/24 20:00

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.77	0.347	0.573	0.303	1.45	0.469	0.823	0.429	20.3	0.560		20	3
(T) Barium	*114*				*117*	*117*							
(T) Yttrium	*85.0*				*77.9*	*77.9*							

Laboratory Control Sample (LCS)

(LCS) R4144729-2 11/08/24 20:00

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.21	104	80.0-120	
(T) Barium			*112*		
(T) Yttrium			*89.2*		

L1788389-31 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1788389-31 11/08/24 20:00 • (MS) R4144729-3 11/08/24 20:00 • (MSD) R4144729-4 11/08/24 20:00

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	2.07	18.3	16.3	97.2	85.1	1	70.0-130			11.7		20
(T) Barium		*104*			*106*	*91.0*							
(T) Yttrium		*84.4*			*85.0*	*95.0*							

Method Blank (MB)

(MB) R4143953-5 11/08/24 13:52

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	-0.471	U	0.166	0.181	0.0939
(T) Barium	*95.7*		*95.7*		
(T) Yttrium	*94.2*		*94.2*		

L1790745-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1790745-06 11/06/24 17:23 • (DUP) R4143953-4 11/06/24 17:23

Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-228	0.233	1.38	1.24	0.640	-0.0938	0.385	0.721	0.376	200	0.228	U	20	3
(T) Barium	*37.7*				*94.8*	*94.8*							
(T) Yttrium	*84.0*				*101*	*101*							

Laboratory Control Sample (LCS)

(LCS) R4143953-1 11/06/24 17:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.02	100	80.0-120	
(T) Barium			*112*		
(T) Yttrium			*99.9*		

L1789938-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1789938-01 11/06/24 17:23 • (MS) R4143953-2 11/06/24 17:23 • (MSD) R4143953-3 11/06/24 17:23

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	3.74	20.3	20.1	99.1	97.7	1	70.0-130			1.19		20
(T) Barium		*84.6*			*104*	*88.7*							
(T) Yttrium		*102*			*88.0*	*91.1*							

Method Blank (MB)

(MB) R4146049-1 11/08/24 20:15

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0136	U	0.0487	0.0853	0.0572
(T) Barium-133	*96.5*		*96.5*		

L1790745-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1790745-05 11/09/24 00:31 • (DUP) R4146049-5 11/08/24 20:15

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.0512	0.218	0.385	0.257	0.151	0.187	0.257	0.196	98.7	0.348	J	20	3
(T) Barium-133	*90.9*				*85.6*	*85.6*							

Laboratory Control Sample (LCS)

(LCS) R4146049-2 11/08/24 20:15

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.11	102	80.0-120	
(T) Barium-133			*90.9*		

L1790479-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1790479-01 11/14/24 00:00 • (MS) R4146049-6 11/14/24 00:00 • (MSD) R4146049-7 11/14/24 00:00

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.0651	16.3	16.4	81.1	81.7	1	75.0-125			0.673		20
(T) Barium-133		*88.5*			*95.2*	*98.4*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

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Rolling Meadows, IL 60008-4242

Report to: **Randy Homburg**

Email To: **Randy.Homburg@erm.com;Tim.Wilson@erm.co**

Project Description: **Grand Tower Energy Center Groundwater 4Q24**

City/State Collected: Grand Tower, IL

Please Circle: PT MT CT ET

Phone: **314-682-3980**

Client Project # **0599247**

Lab Project # **ERMSCMO-0599247**

Collected by (print): Marshall Arendell

Site/Facility ID #

P.O. #

Collected by (signature): Marshall Arendell

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed: Standard

Quote #

Analysis / Container / Preservative

Pres Chk: ✓ ✓

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
APW-03-WG-2024 1016	Grab	NPW	55.27	10/16/24	1500	3	X	X		-01
APW-08-WG-2024 1016		NPW	57.70	"	1625	3	X	X		-02
APW-07-WG-2024 1016		NPW	~~58.28~~	"	1745	3	X	X	Depth=59.28	-03
APW-10S-WG-2024 1015		NPW	57.73	10/15/24	1700	3	X	X		-04
APW-10D-WG-2024 1015		NPW	94.26	10/15/24	1535	3	X	X		-05
APW-06S-WG-2024 1016		NPW	59.80	10/16/24	1035	3	X	X		-06
APW-06D-WG-2024 1016		NPW	152.26	"	0915	3	X	X		-07
APW-05R-WG-2024 1016		NPW	58.50	"	1225	3	X	X		-08
APW-09-WG-2024 1017		NPW	59.05	10/17/24	0950	3	X	X		-09
APW-02-WG-2024 1015		NPW	54.03	10/15/24	1338	3	X	X		-10

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Marshall Arendell ERM	10/17/24	1240	Jeff Clark 10/17/24
Jeff Clark	10/17/24	1240	
			Received for lab by: (Signature)

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: °C Bottles Received: 45

If preservation required by Login: Date/Time

Date: 10/18/24 Time: 0900

Hold:

Condition: NCF / OK

Chain of Custody Page 1 of 2

Pace PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L790479

Table # K002

Acctnum: **ERMSCMO**

Template: **T243472**

Prelogin: **P1103195**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEX Ground**

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Company Name/Address:

ERM - St. Louis, MO

1968 Craig Road, Suite 100
Saint Louis, MO 63146

Billing Information:

Accounts Payable Dept.
1701 Golf Road, Suite 1-1000
Rolling Meadows, IL 60008-4242

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace® PEOPLE ADVANCING SCIENCE

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12065 Lebanon Rd Mount Juliet, TN 37122
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Email To: Randy.Homburg@erm.com;Tim.Wilson@erm.co

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City/State Collected: Grand Tower, IL

Please Circle: PT MT CT ET (CT circled)

Phone: **314-682-3980**

Client Project # 0599247

Lab Project # ERMSCMO-0599247

SDG # L1790479

Table #

Acctnum: **ERMSCMO**

Template: **T243472**

Prelogin: **P1103195**

PM: 206 - Jeff Carr

PB:

Shipped Via: **FedEX Ground**

Collected by (print): Marshell Arendell

Site/Facility ID # (none)

P.O. #

Collected by (signature): [signature]

Quote #

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
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___ Three Day

Date Results Needed: Standard

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add-HNO3	Remarks	Sample # (lab only)
APW-01R-WG-2024 1015	Grab	NPW	54.03	10/15/24	1825	3	X	X		-11
APW-04-WG-2024 1017	|	NPW	55.77	10/17/24	0845	3	X	X		-12
EB-01-WG-2024 1015	|	NPW	—	10/15/24	1015	3	X	X		-13
DUP-01-WG-2024 1016	|	NPW	—	10/16/24	0001	3	X	X		-14
DUP-02-WG-2024 1017	|	NPW	—	10/17/24	0002	3	X	X		-15
										~~-16~~

* Matrix:
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WW - WasteWater
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Remarks:

pH ______ Temp ______

Flow ______ Other ______

Samples returned via: ✓UPS __ FedEx __ Courier ________

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP ✓Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: _Y _N
Preservation Correct/Checked: ✓Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No (No circled) HCL / MeoH TBR
[signature] ERM	10/17/24	1240	[signature: Jill Clark] 10/17/24 1240	

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C	Bottles Received:	If preservation required by Login: Date/Time
[signature: Jill Clark]	10/17/24	1240			45	

Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:	Hold:	Condition: NCF / OK
			[signature]	10/18/24	0900		OK (circled)

4790479

Fed Ex tracking #	Gun ID	Temperature
4091 2576 1310	TLA9	0.1 + 0.3 = 0.4
1309		4.3 + 0.3 = 4.6
1283		1.2 + 0.3 = 1.5
1294		1.7 + 0.3 = 2.0
1272		2.0 + 0.3 = 2.3
1261		0.3 + 0.3 = 0.6

Name

Date