1968 Craig Road
Suite 100
St. Louis, Missouri
63146

T +1 314 733 4490
F +1 314 754 8121

erm.com

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

DATE
26 July 2024

SUBJECT
Ninth Post-Closure Groundwater Monitoring Report
Second Quarter 2024

REFERENCE
Grand Tower Energy Center
Closed Coal Combustion Residuals Impoundment
1820 Power Plant Rd
Grand Tower, Il 62942
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 second quarter 2024 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the "Site"). The second quarter groundwater sampling event took place between 30 April and 1 May 2024, and the closed impoundment inspection event was conducted on 30 April 2024. A Site location map is provided in Figure 1.

The second quarter 2024 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021, which was modified in accordance with the Consolidated IEPA Comments dated 17 March 2022. 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.

Second 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 second 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. The woody vegetation (up to 1" diameter) noted to be within the riprap on the north, west, and southern impoundment cap faces during 2022 was treated with herbicide during the first half of 2023. However, a limited amount of live woody vegetation growth continues to be observed within the riprap. The erosion noted above the riprap on the north, west, and southern impoundment cap faces during 2022 and 2023 has increased from 10-inches deep to 13-inches deep in the deepest locations. These erosional features will be addressed prior to the next sampling event. No significant degradation or issues were noted associated with the overall closed CCR impoundment cover system.

QUARTERLY MONITORING WELL INPSECTION AND GAUGING

During the second 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 second 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. Note that, as has happened during previous sampling events, the current groundwater gradient has changed to an eastern direction (typically a western direction) due to the elevated water level of the Mississippi River.

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 second 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 second 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 second quarter 2024 are presented in Table 1. During the second 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-10D, APW-10S
- Lithium: APW-02, APW-06S,
- Molybdenum: APW-02, APW-0R, APW-06S,
- Sulfate: APW-02,
- Turbidity: APW-01R, APW-02, APW-04, APW-06D, APW-08, APW-10D

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, and APW-09) and APW-10D 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 the preceding calendar year no later than January 31st of 2025.

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 second 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 nine 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 nine post groundwater monitoring events, boron had previously demonstrated a decreasing trend in Site monitoring wells.
- Historically, woody vegetation has been noted on the impoundment cap and treated with herbicide in late 2023. Live woody vegetation growth is limited in the impoundment riprap. During this event, erosion noted above the riprap has increased from 10-inches to 13-inches in the deepest locations as compared to prior inspections dating back to 2022. ERM will continue to monitor the woody vegetation and erosion on the impoundment cap, and the erosional features noted on the cap will be addressed prior to the next sampling event. No other significant degradation or issues were noted associated with the overall closed CCR impoundment cover system. Since GTEC will not have a presence on Site after July 2024, ERM has been tasked with periodic monitoring of Site conditions and cap and impoundment maintenance items.

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

N

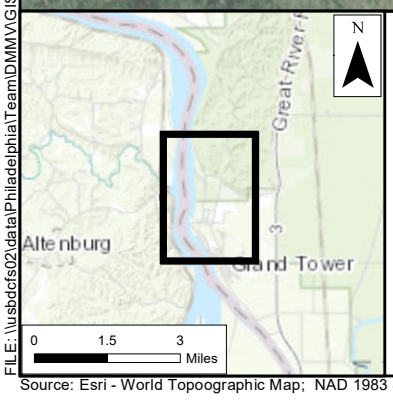
Grand Tower Energy Center (GTEC)

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, Illinois
Jackson County

Environmental Resources Management
www.erm.com

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

DRAWN BY: ECLW

N

APW-1R
343.62

APW-05R
346.26

APW-02
344.46

APW-04
342.62

APW-06S
346.17

APW-06D
344.29

APW-03
343.47

APW-09
341.74

APW-07
344.68

APW-08
342.35

APW-10D
342.24

APW-10S
346.24

346

345.5

345

344.5

344

343.5

343

342.5

342

Mississippi River

*Mississippi River
Elevation = 347.74 Ft

0 240 480 Feet

0 0.425 0.85 Miles

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 - April 30, 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: Second 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

FILE: M:\US\Projects\G-L\Grand Tower Energy Center\GrandTower_IL_MXDPRO\GROUNDWATER\2024\Grand_Tower_Energy_GWC_2024.aprx | REVISED: 06/14/2024 | SCALE: 1:3,331 when printed at 11x17

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-WG-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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																	
UNSPECIFIED																				
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	41	65	65	54	58	88	78	79	33	73 S	69	74	37	79	73	68.9	61.7
CALC																				
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									33.9	31.7	31.7	89.5	83.2	133	95.6	25.6	71.3
GEN CHEM																				
Chloride	N	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
Dissolved Solids, Total	N	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328	355	300	385	439
pH, Lab	N	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
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
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
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
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	0.0016	0.0013	0.0029	0.0033	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
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
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
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
Boron	D	mg/L	2									0.163	0.244	0.219	0.205	0.249	0.204	0.279		0.238 F1
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
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
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
Calcium	D	mg/L	103.2[3]									85.6	83.8 S	73.9	71.4	66.4	72.1	57.6	76.8	101 F1
Calcium	T	mg/L	103.2[3]	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
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
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
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
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
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
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
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
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
Manganese	D	mg/L	NS																0.0362	
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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-2-20170907	APW-2-20170927	APW-2-20171020	APW-2-20171109	APW-2-20171129	APW-2-20171227	APW-2-20180119	APW-2-20180207	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	APW-02-WG-20230627	DUP-02-WG-20230627	APW-02-WG-20230920	APW-02-WG-20231128	APW-02-WG-20240110	APW-02-WG-20240501
			Location ID	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	APW-02	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	01/18/2018	02/07/2018	06/16/2022	09/14/2022	09/14/2022	11/29/2022	11/29/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023	09/20/2023	11/28/2023	01/10/2024	05/01/2024
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	N	N	N	N	N
Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600																					
UNSPECIFIED																								
Fluoride	N	mg/L	4	0.24	0.26	0.25	0.24	0.24	0.25	0.26	0.24	0.25	0.22	0.22	0.25	0.26	0.23	0.22	0.22	0.22	0.24	0.26	0.23	0.25
Radium-226	N	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	0.159 ± 0.181 J	0.27 ± 0.1 UQDR	0.14 ± 0.07 U	0.5 ± 0.14 U	0.35 ± 0.12 U	0.0737 ± 0.236 U	0.175 ± 0.273 J	0.21 ± 0.1 U	-0.05 ± 0.07 U	0.38 ± 0.12 U	0.12 ± 0.06 U	0.0908 ± 0.186 U	0.326 ± 0.259
Radium-228	N	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	0.308 ± 0.256 J3U	0.4 ± 0.48 UQDR	2.81 ± 1.03	0.24 ± 0.44 U	0.27 ± 0.56 U	1.07 ± 0.496	0.861 ± 0.298	-0.42 ± 0.6 U	0.13 ± 0.52 U	0.71 ± 0.53	0.56 ± 0.64 U	0.243 ± 0.202 J	0.985 ± 0.329
Sulfate	N	mg/L	400	462	460	472 S	472	472	426	443	416	496	491	490	418	436	459	455	500	465	460	440	411	510
CALC																								
Radium-226/228	N	pCi/L	5	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	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	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
FIELD PARAM																								
Turbidity, Field	N	NTU	17.99[1]									38	19.2		132		93.6		104.3		97	169	97	66.1
GEN CHEM																								
Chloride	N	mg/L	200	13	12	11	11	12	12	12	12	9	11	10	9	9	10	10	7	8	7	8	7.78	5.38
Dissolved Solids, Total	N	mg/L	1200	858	860	934	916	870	848	836	880	930	890 H	905 H	885	855	852	866	920	870	845	920	820	845
pH, Lab	N	pH units	6.22-9.0[2]	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96	7.21	7.32	7.25	7.01	7.02	6.98	7.05	6.9 H	7.03 H	7.15 H	7.11 H	7.52 T8	7.74 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	0.001 U	0.001 U	0.001 U	0.001 U	0.004 U	0.004 U F1
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	0.00021	0.00066 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	0.004 U	0.004 U
Arsenic	D	mg/L	0.01									0.0117	0.0048	0.0049	0.0012	0.0187	0.016	0.0138	0.011	0.0107	0.0072	0.0188	0.00409	0.00255 F1
Arsenic	T	mg/L	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243	0.0158	0.026	0.0176	0.022	0.0173	0.0185	0.0175	0.0148	0.0148	0.0093	0.0237	0.0112	0.0101
Barium	D	mg/L	2									0.154	0.123	0.139	0.125 B	0.148 B	0.167	0.154	0.142	0.146	0.133	0.205	0.131	0.137 F1
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739	0.237	0.406	0.238	0.254	0.218	0.214	0.159	0.149	0.206	0.152	0.303	0.155	0.145
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	0.001 U	0.002 U	0.002 U F1
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	0.002 U	0.001 U	0.001 U	0.001 SU	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									8.17	7.49 S	7.9	6.66	6.63	8.21	7.39	8.97	9.24	8.81	9.37 S		9.91 F1
Boron	T	mg/L	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24	8.13	9.43	8.72	8.97 S	7.89	7.75	8.32 S	9.14	9.51 S	8.24	9.62		10.2
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	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U F1
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	0.0006 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	0.001 U	0.001 U
Calcium	D	mg/L	103.2[3]									175	136 S	165	96.1	129	108	144	147	148	151	121 S	144	162 F1
Calcium	T	mg/L	103.2[3]	148	145	171 S	157	158	135	134	175	180	159	179	145 S	149	144	145 S	161 S	167 S	132	132	146	161
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	0.0015 U	0.002 U	0.002 U F1
Chromium	T	mg/L	0.1	0.0374	0.0456	0.0503	0.0235	0.014	0.0566	0.127	0.112	0.0254	0.0148	0.0966	0.0064	0.0054	0.0052	0.0222	0.0024	0.0073	0.008	0.0092	0.002 U	0.002 U
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	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1
Cobalt	T	mg/L	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011	0.0011 J	0.0044	0.0011	0.0015	0.0011	0.001 U	0.001 U	0.001 U	0.0018	0.001 U	0.0027	0.002 U	0.002 U
Iron	D	mg/L	NS											NS									0.1 U	
Iron	T	mg/L	NS									11.7											7.63	
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	0.001 U	0.002 U	0.002 U F1
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0261	0.0096	0.0075	0.0031	0.0048	0.0239	0.0022	0.0119	0.0033	0.0033	0.0034	0.0027	0.0023	0.0025	0.0029	0.002	0.0057	0.00235	0.002 U
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0367	0.0462	0.0455	0.0583	0.0506	0.0398	0.0432 F1
Lithium	T	mg/L	0.04	0.05	0.0435	0.0647	0.0521	0.0542	0.0474	0.045	0.0604	0.0507	0.0559	0.0456	0.0386	0.0411	0.0417	0.044	0.0458	0.048	0.0422	0.056	0.0418	0.045
Manganese	D	mg/L	NS																				0.616	
Manganese	T	mg/L	NS									0.752											0.469	
Mercury	D	mg/L	0.002										0.0002 U	0.0002 U									0.0002 U	0.0002 U F1
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	0.00043	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									0.201	0.139	0.156	0.0337	0.145	0.151	0.155	0.227	0.227	0.214	0.205	0.157	0.34 F1
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131	0.24	0.174	0.174	0.128	0.119	0.165	0.16	0.229	0.252	0.198	0.147	0.158	0.152
Nickel	D	mg/L	NS									0.0039			0.0022	0.001 U							0.002 U	
Nickel	T	mg/L	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725	0.0142			0.0045	0.0047							0.00237	
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	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U F1
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	0.001 U	0.001 U	0.001 U	0.0015	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	0.002 U	0.002 U	0.002 U	0.002 U F1
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	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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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 Location ID Sample Date Sample Type	APW-3-20170907 APW-03 09/06/2017 N	APW-3-20170929 APW-03 09/29/2017 N	APW-3-20171020 APW-03 10/20/2017 N	APW-3-20171110 APW-03 11/1/2017 N	APW-3-20171129 APW-03 11/29/2017 N	APW-3-20171228 APW-03 12/28/2017 N	APW-3-20180119 APW-03 01/19/2018 N	APW-3-20180208 APW-03 02/08/2018 N	APW-03-WG-20220616 APW-03 06/16/2022 N	APW-03-WG-20220915 APW-03 09/15/2022 N	APW-03-WG-20221130 APW-03 11/30/2022 N	APW-03-WG-20230130 APW-03 01/30/2023 N	APW-03-WG-20230626 APW-03 06/26/2023 N	APW-03-WG-20230919 APW-03 09/19/2023 N	APW-03-WG-20231127 APW-03 11/27/2023 N	APW-03-WG-20240111 APW-03 01/11/2024 N	APW-03-WG-20240430 APW-03 04/30/2024 N
Parameter	**Analyte Total or Dissolved**	**Units**	**35 IAC 845.600**																	
UNSPECIFIED																				
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322	292	280	133	80.1	285
CALC																				
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									40.3	56.1	103	50.7	6.04	2.72	4	7.12	2.53
GEN CHEM																				
Chloride	N	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21	17	16	11	8.04	15
Dissolved Solids, Total	N	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524	614	636	556	489	627
pH, Lab	N	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
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
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
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
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
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
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
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
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
Boron	D	mg/L	2									4.23	1.49	2.99	4.98	4.64	4.11	1.69		4.2 F1
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
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
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
Calcium	D	mg/L	103.2[3]									174	0.0015 U	101	121	125	137	111	123	125 F1
Calcium	T	mg/L	103.2[3]	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
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
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
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
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
Iron	D	mg/L	NS																0.1 U	
Iron	T	mg/L	NS																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
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
Lithium	D	mg/L	0.04					0.001 U				0.0338	0.0288	0.0266	0.0275	0.0262	0.0406	0.0256	0.0281	0.0289 F1
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
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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 Location ID Sample Date Sample Type	APW-4-20170907 APW-04 09/08/2017 N	APW-4-20170929 APW-04 09/29/2017 N	APW-4-20171019 APW-04 10/19/2017 N	APW-4-20171108 APW-04 11/08/2017 N	APW-4-20171128 APW-04 11/28/2017 N	APW-4-20171228 APW-04 12/28/2017 N	APW-4-20180119 APW-04 01/19/2018 N	APW-4-20180208 APW-04 02/08/2018 N	APW-04-WG-20220615 APW-04 06/15/2022 N	APW-04-WG-20220915 APW-04 09/15/2022 N	APW-04-WG-20221128 APW-04 11/28/2022 N	APW-04-WG-20230202 APW-04 02/02/2023 N	APW-04-WG-20230627 APW-04 06/27/2023 N	APW-04-WG-20230920 APW-04 09/20/2023 N	APW-04-WG-20231129 APW-04 11/30/2023 N	APW-04-WG-20240110 APW-04 01/10/2024 N	APW-04-WG-20240501 APW-04 05/01/2024 N
ParameterAnalyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																		
UNSPECIFIED																					
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62	65	66	54	50.9 J6	53.9
CALC																					
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																					
Turbidity, Field	N	NTU	17.96[1]									19.1	18.3	26.5	37.3	38.7	21.6	22.8	29.8	91.7
GEN CHEM																					
Chloride	N	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12	9	11	9.21	11.6
Dissolved Solids, Total	N	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432	476	430	418	404
pH, Lab	N	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
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
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
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
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
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
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
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
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
Boron	D	mg/L	2									1.41	0.875	7.33	0.619	0.908	0.591	0.645		0.556 F1
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
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
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	0.0015 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[3]									111	93.7	108	93.3 S	88.3	101 S	77.9	90.6	93.1 F1
Calcium	T	mg/L	103.2[3]	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
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
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
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
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
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
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
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311	0.0411	0.0333	0.0266	0.0264 F1
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
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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	35 IAC 845.600	Sampled prior to closure of CCR Impoundment							
Sample ID				APW-5-20170907	APW-5-20170928	APW-5-20171019	APW-5-20171109	APW-5-20171129	APW-5-20171227	APW-5-20180118	APW-5-20180207
Location ID				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
Sample Type				N	N	N	N	N	N	N	N
UNSPECIFIED											
Fluoride	N	mg/L	4	0.34	0.34	0.32	0.32	0.32	0.33	0.36	0.32
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	407	460	399	413	381	394	439	378
CALC											
Radium-226/228	N	pCi/L	5	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
FIELD PARAM											
Turbidity, Field	N	NTU	17.06[1]								
GEN CHEM											
Chloride	N	mg/L	200	15	15	15	14	16	16	16	16
Dissolved Solids, Total	N	mg/L	1200	842	832	804	826	790	792	552	804
pH, Lab	N	pH units	6.22-9.0[2]	7.37	7.3	7.26	7.3	7.26	7.31	7.23	7.18
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	0.0026	0.0015	0.0016	0.0016	0.0019	0.0021	0.0019
Barium	D	mg/L	2								
Barium	T	mg/L	2	0.226	0.233	0.183	0.216	0.193	0.214	0.214	0.195
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	9.3	10.3	8.89	9.98	9.1	9.83	9.25	8.73
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[1]								
Calcium	T	mg/L	103.2[1]	136	142	119	131	123	125	121	124
Chromium	D	mg/L	0.1								
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
Cobalt	D	mg/L	0.006								
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
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	0.0363	0.0443	0.0393	0.0405	0.0415	0.0433	0.0404	0.0397
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	0.195	0.201	0.168	0.193	0.246	0.244	0.249
Nickel	D	mg/L	NS								
Nickel	T	mg/L	NS	0.0074	0.0012	0.0023	0.001 U	0.001 U	0.0043	0.0021	0.001 U
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

Parameter/Analyte	Total or Dissolved	Post-Closure Sampling									
Sample ID		APW-05-WG-20220616	DUP-001-WG-20220616	APW-05-WG-20220914	DUP-001-WG-20220914	APW-05-WG-20221128	DUP-01-WG-20221128	APW-05-WG-20230201	DUP-01-WG-20230201	APW-05R-WG-20230627	DUP-01-WG-20230627
Location ID		APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05R[4]
Sample Date		06/16/2022	06/16/2022	09/14/2022	09/14/2022	11/28/2022	11/28/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023
Sample Type		N	FD	N	FD	N	FD	N	FD	N	FD
UNSPECIFIED											
Fluoride	N	0.35	0.33	0.33	0.31	0.37	0.38	0.33	0.33	0.3	0.32
Radium-226	N	0.649 ± 0.316	0.259 ± 0.27 J	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
Radium-228	N	1.1 ± 0.282	0.715 ± 0.31	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 UQDR	0.61 ± 0.67 U
Sulfate	N	224	239	379	403	324	338	325	305	335	326
CALC											
Radium-226/228	N	1.75 ± 0.424	0.973 ± 0.411	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
FIELD PARAM											
Turbidity, Field	N	51.8		9.19		4.65		8.21		42.6	
GEN CHEM											
Chloride	N	19	19	15	15	19	19	18	18	17	18
Dissolved Solids, Total	N	650	690	750 H	774 H	714	728 H	696	670	740	695
pH, Lab	N	7.35	7.49	7.55	7.57	7.24	7.27	7.31	7.33	7.27 H	7.3 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	0.001 U	0.001 U	0.001 U
Antimony	T	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
Arsenic	D	0.002	0.0021	0.001	0.001	0.001 U	0.0019	0.0026	0.0018	0.0024	0.0025
Arsenic	T	0.0048	0.0041	0.0025	0.0023	0.0022	0.0023	0.0024	0.0025	0.003	0.003
Barium	D	0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135	0.168	0.167
Barium	T	0.187	0.174	0.154	0.152	0.14	0.136	0.145	0.148	0.183	0.181
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	0.001 U
Beryllium	T	0.002 U	0.002 U	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	7.63	7.7	7.42	7.09	6.12	7.03 S	8.68 S	6.76	8.64	8.37
Boron	T	7.67	8.24 S	7.76	7.62	7.48	7.97	7.35	7.59	8.76	8.68
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	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	0.001 U
Calcium	D	139	141	119	131	87.4	110 S	106 S	111	120	120
Calcium	T	127	129 S	127	137	117	118	112	114	136 B	133 B
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	0.0015 U
Chromium	T	0.0016 J	0.003 U	0.0015 U	0.0015 U	0.0015 U	0.0016	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Cobalt	D	0.0006 J	0.0005 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
Cobalt	T	0.0013 J	0.0011 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
Iron	T	2.77	1.89								
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	0.001 U
Lead	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	0.0011	0.001
Lithium	D	0.0282	0.029	0.0381	0.0373	0.0338	0.0365	0.045	0.0375	0.0384	0.0398
Lithium	T	0.0331	0.0363	0.0408	0.0397	0.0373	0.0371	0.0399	0.0402	0.0423	0.0415
Manganese	T	0.9	0.904								
Mercury	D			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	0.0002 U	0.0002 U
Molybdenum	D	0.172	0.17	0.213	0.206	0.293	0.211 S	0.187	0.199	0.213	0.204
Molybdenum	T	0.203	0.195	0.235	0.224	0.223	0.226	0.217	0.212	0.212	0.21
Nickel	D	0.0036	0.0035			0.0011	0.0024				
Nickel	T	0.0037	0.0039			0.002	0.0029				
Selenium	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	0.001 U
Selenium	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	0.001 U
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	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	0.002 U

Parameter/Analyte	Total or Dissolved	Post-Closure Sampling (continued)							
Sample ID		APW-05R-WG-20230920	DUP-01-WG-20230920	APW-05R-WG-20231128	DUP-01-WG-20231128	APW-05R-WG-20240110	DUP-01-WG-20240110	APW-05R-WG-20240501	DUP-01-WG-20240501
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]
Sample Date		09/20/2023	09/20/2023	11/28/2023	11/28/2023	01/10/2024	01/10/2024	05/01/2024	05/01/2024
Sample Type		N	FD	N	FD	N	FD	N	FD
UNSPECIFIED									
Fluoride	N	0.35	0.34	0.38	0.35	0.298	0.317	0.15 U	0.301
Radium-226	N	0.49 ± 0.13 U	0.36 ± 0.13 U	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
Radium-228	N	5.85 ± 1.14 *	0.42 ± 0.71 U	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
Sulfate	N	343	333	330	321	306	305	365	368
CALC									
Radium-226/228	N	6.34 ± 1.53	0.78 ± 0.84 U	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
FIELD PARAM									
Turbidity, Field	N	33.7		76.1		38.9		8.02	
GEN CHEM									
Chloride	N	14	14	16	16	16.9	17	15.8	16.1
Dissolved Solids, Total	N	680	710	705	690	677	691	764	740
pH, Lab	N	7.36 H	7.36 H	7.33 H	7.34 H	7.42 T8	7.82 T8	7.6 T8	7.62 T8
METALS									
Antimony	D	0.001 U	0.001 U	0.001 U	0.001 SU	0.004 U	0.004 U	0.004 U F1	0.004 U F1
Antimony	T	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	0.0023	0.0024	0.0029	0.0018	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Arsenic	T	0.0028	0.0026	0.0042	0.0031	0.0022	0.00228	0.00228	0.00235
Barium	D	0.167	0.172	0.186	0.127	0.113	0.114	0.161 F1	0.151 F1
Barium	T	0.162	0.158	0.225	0.158	0.151	0.153	0.195	0.19
Beryllium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Beryllium	T	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	7.91	8.05	8.71	6.44 S			8.86 F1	8.89 F1
Boron	T	7.12	8.33 S	9.62	6.77			9.28	9.26
Cadmium	D	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 F1
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	118	119	98.4	91.9 S	112	111	142 F1	142 F1
Calcium	T	105	126 S	97.1	134	114	115	141	139
Chromium	D	0.0015 U	0.0015 U	0.0015 U	0.0015 SU	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Chromium	T	0.0031	0.0016	0.002	0.0023	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	D	0.001 U	0.001 U	0.001 U	0.001 SU	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Cobalt	T	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	T					5.89	5.91		
Lead	D	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Lead	T	0.0026	0.0021	0.002	0.0014	0.002 U	0.002 U	0.002 U	0.002 U
Lithium	D	0.0624	0.0509	0.0455	0.0343	0.0377	0.039	0.0362 F1	0.0394 F1
Lithium	T	0.0367	0.0425	0.0523	0.0371	0.0388	0.0404	0.0385	0.0377
Manganese	T					0.554 V	0.553		
Mercury	D					0.0002 U	0.0002 U	0.0002 U F1	0.0002 U F1
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	0.235	0.233	0.282	0.192	0.235	0.235	0.213 F1	0.215 F1
Molybdenum	T	0.223	0.235	0.203	0.215	0.227	0.231	0.221	0.214
Nickel	D					0.002 U	0.002 U		
Nickel	T					0.002 U	0.002 U		
Selenium	D	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1
Selenium	T	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	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 F1
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 well APW-01R concentrations from 8 quarterly sampling events from 2017-2018

2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory

3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-9. The final Groundwater Protection Standards (GPS) are the higher of the values provided in 35 IAC 845.600(a) and the final background concentrations as found in Table 6 of the 07/25/2019 GMZ Application with the exception of turbidity and pH. Radium 226+228 was the only value taken from Table 6.

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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600																
UNSPECIFIED																			
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	215	228	206	222	230	236	211	189	272	254	269	270	218	184	180	184
CALC																			
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																			
Turbidity, Field	N	NTU	17.96[1]									18.5	74.4	26.9	181	65.5	3.02	18.2	35.8
GEN CHEM																			
Chloride	N	mg/L	200	17	17	16	16	16	16	17	17	14	17	16	15	16	22	21.2	21.5
Dissolved Solids, Total	N	mg/L	1200	558	560	562	564	590	516 R	482	584	670 H	580	582	735	565	560	536	549
pH, Lab	N	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
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
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
Arsenic	D	mg/L	0.01									0.004	0.0116	0.012	0.0102	0.01	0.0161	0.00451	0.00585 F1
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
Barium	D	mg/L	2									0.129	0.118 B	0.152	0.13	0.121	0.185	0.106	0.115 F1
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
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
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
Boron	D	mg/L	2									5.32	4.14	4.39	5.01	3.77	4.67		2.98 F1
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
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
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	0.0015 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[3]									118	105	109	118	114	80.3	106	114 F1
Calcium	T	mg/L	103.2[3]	99.9	110	96.7	100	110	107	105 S	105	123	110	116	128 B	106	98.4	111	114
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
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
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
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
Iron	D	mg/L	NS															0.11 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
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
Lithium	D	mg/L	0.04									0.0179	0.0155	0.0194	0.016	0.0197	0.0241	0.0161	0.0159 F1
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
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
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
Molybdenum	D	mg/L	0.1									0.0669	0.0796	0.0583	0.0643	0.0559	0.0949	0.0617	0.0748 F1
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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 Location ID Sample Date Sample Type	APW-6S-20170907 APW-06S 09/06/2017 N	APW-6S-20170928 APW-06S 09/28/2017 N	APW-6S-20171019 APW-06S 10/19/2017 N	APW-6S-20171109 APW-06S 11/09/2017 N	APW-6S-20171128 APW-06S 11/28/2017 N	APW-6S-20171227 APW-06S 12/27/2017 N	APW-6S-20180118 APW-06S 01/18/2018 N	APW-6S-20180208 APW-06S 02/08/2018 N	APW-6S-WG-20220616 APW-06S 06/16/2022 N	APW-06S-WG-20220913 APW-06S 09/13/2022 N	APW-06S-WG-20221128 APW-06S 11/28/2022 N	APW-06S-WG-20230201 APW-06S 02/01/2023 N	APW-06S-WG-20230627 APW-06S 06/27/2023 N	APW-06S-WG-20230920 APW-06S 09/20/2023 N	APW-06S-WG-20231128 APW-06S 11/28/2023 N	APW-06S-WG-20240110 APW-06S 01/10/2024 N	APW-06S-WG-20240501 APW-06S 05/01/2024 N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																	
UNSPECIFIED																				
Fluoride	N	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
Radium-226	N	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
Radium-228	N	pCi/L	NS	0.56 ± 0.77 U	1.06 ± 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 ± 0.36 U	0.29 ± 0.51 U	0.688 ± 0.243	0.951 ± 0.345
Sulfate	N	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247	208	221	237	240	211
CALC																				
Radium-226/228	N	pCi/L	5	0.92 ± 0.91 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
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									30.5	15.1	5.56	6.67	9.06	8.99	1.26	3.32	3.81
GEN CHEM																				
Chloride	N	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24	23	20	22	21.2	21.6
Dissolved Solids, Total	N	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638	615	565	635	644	678 Q
pH, Lab	N	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	7.67 T8	7.35 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
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
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
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
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
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
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
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
Boron	D	mg/L	2									4.92	5.95	6.88	7.12	5.83	6.65	8.41		5.36 F1
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	6.84 S	5.84	5.79	9.19		5.54
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
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	0.0015 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[1]									124	93.7	98	94.1	100	107	88.8	100 V	120 F1
Calcium	T	mg/L	103.2[1]	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4	115	105	103	97.1 S	109 B	92.7	90	101	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	0.0015 U	0.002 U	0.002 U F1
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
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
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
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
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
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0406	0.0411	0.0487	0.0498	0.0383	0.038 F1
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
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
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
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
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	0.207	0.255	0.231
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
V = The sample concentration is too high to evaluate accurate spike recoveries

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
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 Location ID Sample Date Sample Type	APW-7-20170907 APW-07 09/07/2017 N	APW-7-20170928 APW-07 09/28/2017 N	APW-7-20171019 APW-07 10/19/2017 N	APW-7-20171109 APW-07 11/09/2017 N	APW-7-20171128 APW-07 11/28/2017 N	APW-7-20171227 APW-07 12/27/2017 N	APW-7-20180118 APW-07 01/18/2018 N	APW-7-20180208 APW-07 02/08/2018 N	APW-07-WG-20220616 APW-07 06/16/2022 N	APW-07-WG-20220914 APW-07 09/14/2022 N	APW-07-WG-20221130 APW-07 11/30/2022 N	APW-07-WG-20230130 APW-07 01/30/2023 N	APW-07-WG-20230626 APW-07 06/26/2023 N	APW-07-WG-20230919 APW-07 09/19/2023 N	APW-07-WG-20231128 APW-07 11/28/2023 N	APW-07-WG-20240111 APW-07 01/11/2024 N	APW-07-WG-20240430 APW-07 04/30/2024 N
ParameterAnalyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																		
UNSPECIFIED																					
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48	54	44	40	68.8	56.3
CALC																					
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																					
Turbidity, Field	N	NTU	17.96[1]									66.2	34.8	10.5	79.2	14.8	42.9	21	4.36	3.34
GEN CHEM																					
Chloride	N	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14	10	9	11	11.5	9.63
Dissolved Solids, Total	N	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824	665	740	790	734	737
pH, Lab	N	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
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
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
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
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
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
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
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
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
Boron	D	mg/L	2									0.148	0.193	0.199	0.267	0.208	0.192	0.243		0.2 U F1
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
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
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	0.0015 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[3]									222	199	204	199	180 S	196	162	203	216 F1
Calcium	T	mg/L	103.2[3]	192	204	171	187	196	193	191	185	238	210	209	200	183 BS	161	177	209	213
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
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
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
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
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
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
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191	0.0136	0.0184	0.0212	0.0176	0.0167 F1
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
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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 Location ID Sample Date Sample Type	APW-8-20170907 APW-08 09/07/2017 N	APW-8-20170928 APW-08 09/28/2017 N	APW-8-20171018 APW-08 10/18/2017 N	APW-8-20171108 APW-08 11/08/2017 N	APW-8-20171127 APW-08 11/27/2017 N	APW-8-20171227 APW-08 12/27/2017 N	APW-8-20180117 APW-08 01/17/2018 N	APW-8-20180208 APW-08 02/08/2018 N	APW-08-WG-20220616 APW-08 06/16/2022 N	APW-08-WG-20220915 APW-08 09/15/2022 N	APW-08-WG-20221130 APW-08 11/30/2022 N	APW-08-WG-20230202 APW-08 02/02/2023 N	APW-08-WG-20230626 APW-08 06/26/2023 N	APW-08-WG-20230919 APW-08 09/19/2023 N	APW-08-WG-20231128 APW-08 11/28/2023 N	APW-08-WG-20240111 APW-08 01/11/2024 N	APW-08-WG-20240430 APW-08 04/30/2024 N
ParameterAnalyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																		
UNSPECIFIED																					
Fluoride	N	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
Radium-226	N	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
Radium-228	N	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
Sulfate	N	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31	23	24	24.7	28.6
CALC																				
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									119	139	305	26.9	152	141	169	23.1	136
GEN CHEM																				
Chloride	N	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10	10	11	10.6	10.2
Dissolved Solids, Total	N	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378	420	440	395	370	371
pH, Lab	N	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
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
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
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
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
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
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
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
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
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895	0.124	0.117	0.154		0.2 U F1
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
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
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	0.0015 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[3]									108	79.7	75.4	72.1	92.6	94.1 S	71.3	83.1	88.4 F1
Calcium	T	mg/L	103.2[3]	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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
Highlighted values exceed action level
NS = No standard

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

			Sample ID	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling												
			Sample ID	APW-9-20170907	APW-9-20170927	APW-9-20171018	APW-9-20171108	APW-9-20171127	APW-9-20171228	APW-9-20180117	APW-9-20180208	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	APW-09-WG-20240111	DUP-02-WG-20240111	APW-09-WG-20240430	DUP-02-WG-20240430
			Location ID	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	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	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	01/11/2024	01/11/2024	04/30/2024	04/30/2024
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	FD
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																					
UNSPECIFIED																								
Fluoride	N	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19	0.23	0.19	0.2	0.19	0.19	0.2	0.19	0.2	0.21	0.197	0.186	0.339	0.23
Radium-226	N	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	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	0.203 ± 0.210 J	0.459 ± 0.287	0.252 ± 0.234 J	0.0618 ± 0.185 U
Radium-228	N	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	-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	1.09 ± 0.251	0.723 ± 0.211	0.614 ± 0.214	0.51 ± 0.220
Sulfate	N	mg/L	400	65	47	53	65	50	42	28	25	104	39	36	38	47	32	31	34	35	35.3	35.4	53.6	53.5 J6
CALC																								
Radium-226/228	N	pCi/L	5	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	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	1.29 ± 0.327	1.18 ± 0.356	0.866 ± 0.317	0.572 ± 0.287
FIELD PARAM																								
Turbidity, Field	N	NTU	17.96[1]									34.2	7.3	7.28	23.6	24.7	5.64		3.82		13.4		5.69	
GEN CHEM																								
Chloride	N	mg/L	200	13	13	13	13	13	13	13	768	13	12	12	13	12	11	11	12	12	12.1	12.1	14.3	14
Dissolved Solids, Total	N	mg/L	1200	364 R	372	324	366	392	278	348	3380	424	380 H	372	360	386	372	386	380	376	354	361	367	365
pH, Lab	N	pH units	6.22-9.0[2]	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33	7.48	7.59	7.32	7.72	7.32 H	7.56 H	7.65 H	7.5 H	7.45 H	8.03 T8	8.1 T8	7.7 T8	7.81 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	0.0011	0.001 U	0.004 U	0.004 U	0.004 U F1	0.004 U F1
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	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									0.0019	0.0021	0.0019	0.0019	0.0021	0.0022	0.0021	0.002	0.002	0.00216	0.00206	0.00222 F1	0.00223 F1
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022	0.0026	0.0025	0.0021	0.0024	0.0021	0.002	0.0023	0.0026	0.0028	0.00235	0.00214	0.00227	0.00216
Barium	D	mg/L	2									0.129	0.111	0.109 B	0.107	0.116	0.114	0.117	0.109	0.108	0.118	0.12	0.114 F1	0.117 F1
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125	0.186	0.134	0.124	0.122	0.123	0.12	0.125	0.131	0.143	0.138	0.136	0.113	0.109
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	0.002 U	0.002 U	0.002 U F1	0.002 U F1
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	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U
Boron	D	mg/L	2									1.32	0.327	0.24	0.239	0.572	0.234	0.236	0.169	0.166			0.481 F1	0.466 F1
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255	1.61	0.329	0.243	0.225	0.473	0.209	0.239	0.191	0.221			0.501	0.493
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	0.001 U	0.001 U F1	0.001 U F1
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	0.0015 U	0.001 U	0.001 U	0.001 U	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[1]									107 S	76.5	78.3	76.3	82.8 S	81	81.1	73.5	73.6	80.2	78.4	88.5 F1	88.3 F1
Calcium	T	mg/L	103.2[1]	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92	110	89.5	80.5	80.3	86.9 B	69.5	87.5	80.9	111	80.4	80.9	88.3	87.9
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	0.002 U	0.002 U	0.002 U F1	0.002 U F1
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	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	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	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U F1	0.002 U F1
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	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	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									0.496									0.179	0.21		
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	0.002 U	0.002 U	0.002 U F1	0.002 U F1
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	0.0039	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
Lithium	D	mg/L	0.04									0.0184	0.0137	0.0131	0.0125	0.0163	0.0196	0.0184	0.0121	0.012	0.0129	0.0142	0.0159 F1	0.017 F1
Lithium	T	mg/L	0.04	0.0176	0.0173	0.0174	0.018	0.0167	0.0173	0.0155	0.0148	0.0246	0.0143	0.0131	0.0137	0.0157	0.0134	0.015	0.0138	0.0163	0.0139	0.0143	0.0163	0.0191
Manganese	D	mg/L	NS																		0.005 U	0.005 U		
Manganese	T	mg/L	NS									0.599									0.124	0.119		
Mercury	D	mg/L	0.002										0.0002 U								0.0002 U	0.0002 U	0.0002 U F1	0.0002 U F1
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	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0351	0.0182	0.0139	0.0165	0.0211	0.0167	0.0173	0.0154	0.0146	0.0186	0.0188	0.0311 F1	0.0309 F1
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224	0.0455	0.0194	0.015	0.0173	0.0189	0.0162	0.0173	0.0188	0.0171	0.0163	0.0157	0.031	0.0295
Nickel	D	mg/L	NS									0.0017		0.001 U							0.002 U	0.002 U		
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	0.004		0.0019							0.002 U	0.002 U		
Selenium	D	mg/L	0.05									0.021	0.0142	0.0147	0.0179	0.0186	0.0155	0.0162	0.0163	0.0159	0.022	0.0216	0.0319 F1	0.0354 F1
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134	0.0219	0.0151	0.0138	0.0196	0.0198	0.0153	0.0182	0.0214	0.0194	0.0225	0.0222	0.0334	0.0328
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	0.002 U	0.002 U F1	0.002 U F1
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	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	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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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-20171109	APW-10S-20171128	APW-10S-20171228	APW-10S-20180118	APW-10S-20180209	APW-10S-20220615	APW-10S-20220915	APW-10S-20221129	APW-10S-20230202	APW-10S-20230626	APW-10S-20230919	APW-10S-20231127	APW-10S-20240111	APW-10S-20240430
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																	
UNSPECIFIED																				
Fluoride	N	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
Radium-226	N	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
Radium-228	N	pCi/L	NS	0.38 ± 0.47 U	0.98 ± 0.7 J	0.856 ± 0.391	0.71 ± 0.33 J	0.66 ± 0.57 U	0.56 ± 0.43 U	2.71 ± 0.78	0.93 ± 0.52 J	0.475 ± 0.268 J	2.52 ± 0.91	1.64 ± 0.68	0.162 ± 0.371 U	-0.18 ± 0.47 U	4.24 ± 0.91	0.95 ± 0.66 J	2.1 ± 0.228	0.234 ± 0.289 U
Sulfate	N	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
CALC																				
Radium-226/228	N	pCi/L	5	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
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									61.5	34.3	52.6	37.3	57.2	63.6	13.1	3.78	17.1
GEN CHEM																				
Chloride	N	mg/L	200	10	7	6	6	6	6	6	6	12	15	18	21	14	15	20	17.2	11.4
Dissolved Solids, Total	N	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H	750	780	725	775	900	692	744
pH, Lab	N	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
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
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
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
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	0.276	0.196	0.198
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506	0.567	0.711	0.288	0.339 F1	
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
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
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
Boron	D	mg/L	2									0.57	0.541	7.48	0.497	0.578	0.571	0.682		0.544 F1
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582	0.683	0.565	0.569	0.592	0.582	0.553	0.555		0.571
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
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	0.0015 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[3]									169	156	142	145	142	151	137	152	160 F1
Calcium	T	mg/L	103.2[3]	136	144	135	152	150	145	140	140	161	171 S	154	145	153 B	134	129 S	162	163
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
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	0.0016	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
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
Iron	D	mg/L	NS																0.11 J	
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
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	0.0016	0.0031	0.001 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
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	0.0293
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
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 Location ID Sample Date Sample Type	APW-10D-20170907 APW-10D 09/07/2017 N	APW-10D-20170927 APW-10D 09/27/2017 N	APW-10D-20171019 APW-10D 10/19/2017 N	APW-10D-20171109 APW-10D 11/09/2017 N	APW-10D-20171128 APW-10D 11/28/2017 N	APW-10D-20171228 APW-10D 12/28/2017 N	APW-10D-20180118 APW-10D 01/18/2018 N	APW-10D-20180209 APW-10D 02/09/2018 N	APW-10D-WG-20220615 APW-10D 06/15/2022 N	APW-10D-WG-20220916 APW-10D 09/16/2022 N	APW-10D-WG-20221129 APW-10D 11/29/2022 N	APW-10D-WG-20230202 APW-10D 02/02/2023 N	APW-10D-WG-20230626 APW-10D 06/26/2023 N	APW-10D-WG-20230919 APW-10D 09/19/2023 N	APW-10D-WG-20231127 APW-10D 11/27/2023 N	APW-10D-WG-20240111 APW-10D 01/11/2024 N	APW-10D-WG-20240430 APW-10D 04/30/2024 N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**																		
UNSPECIFIED																					
Fluoride	N	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
Radium-226	N	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	0.08 ± 0.1 U	0 ± 0.07 U	0.249 ± 0.207	0.22 ± 0.09 U	0.31 ± 0.11 U	0.186 ± 0.157	0.31 ± 0.12 U	0.21 ± 0.09 U	0.14 ± 0.06 U	0.04 ± 0.170 U	0.134 ± 0.199 J
Radium-228	N	pCi/L	NS	1.16 ± 0.52	1.72 ± 0.64	0.633 ± 0.366	0.98 ± 0.33 J	0.47 ± 0.56 U	0.34 ± 0.37 U	0.98 ± 0.6 J	0.59 ± 0.43 U	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
Sulfate	N	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39	44	31	26	35.5	35.3
CALC																					
Radium-226/228	N	pCi/L	5	1.5 ± 0.64 U	1.72 ± 0.74 U	0.754 ± 0.703	1.17 ± 0.45 U	0.63 ± 0.68 U	0.57 ± 0.47 U	1.06 ± 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
FIELD PARAM																					
Turbidity, Field	N	NTU	17.96[1]									46.9	21.9	36.4	45.3	176	169	196	4.76	198
GEN CHEM																					
Chloride	N	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13	14	10	10	15.4	10.9
Dissolved Solids, Total	N	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454	485	468	445	436	459
pH, Lab	N	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
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
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
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
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
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.304	0.348	0.355	0.448	0.336	0.369 F1
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
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
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
Boron	D	mg/L	2									0.0786	0.0711	0.0841	0.0579	0.0704	0.0639	0.0823		0.2 U F1
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	0.0674	0.066	0.0754		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
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	0.0015 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[3]									143	124	113	114	114	116	83.4	119	121 F1
Calcium	T	mg/L	103.2[3]	118	136	120	121	125	123	148 S	124 S	135	374	115	122	611 B	118	120	125	141
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
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
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
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
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
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
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
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
Manganese	D	mg/L	NS																0.867	
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
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
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
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
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
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
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
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

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
F1 = Sample filtration was performed in the laboratory
H = Holding times exceeded
J = Analyte detected below quantitation limits
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
Highlighted values exceed action level
NS = No standard

APPENDIX A SECOND QUARTER 2024 CCR IMPOUNDMENT INSPECTION REPORT

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date: 4/30/2024

Time: 10:45 - 11:45

Name: Marshall Arendell
(Inspector)

Weather:

Temperature:

70 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

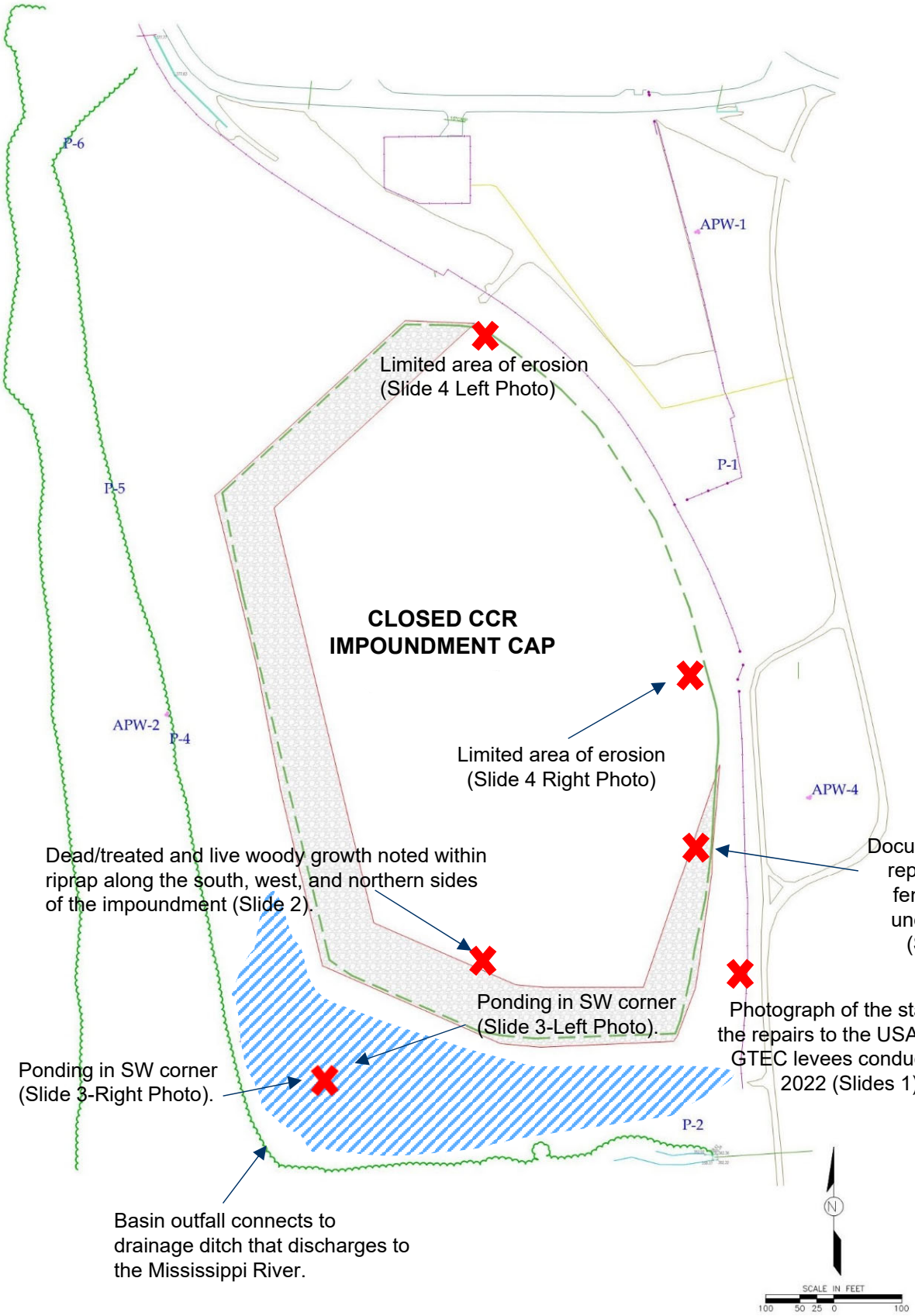
☐ Other

Observations in Detail Below:

- ERM onsite for the Q2 2024 inspection of the closed CCR impoundment and groundwater sampling event.
- Repairs to the United States Army Corps of Engineers (USACE) and GTEC levees continue to hold, and successful revegetation of levee face continues to progress.
- Erosion channels noted across north, west, and southern closed CCR impoundment cap faces up to 13" deep.
- Ponding continues to be noted in the SW corner of the basin near the outfall.
- The impoundment cap was mowed during Q2 2024 and found to be in generally good condition.
- The inspector recommends continued treatment of woody growth within the riprap with herbicide, and the filling of the erosional channels noted above.

Please see observation locations on figure on the following page.

Observation Locations Map



Grand Tower Energy Center Q2 2024 Closed CCR Impoundment Cap Inspection

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

Facing north along the repaired fence-line, riprap, and levee area.

Facing northeast along the repaired fence-line, riprap, and levee area.

Levee has successfully revegetated since repairs were initiated during 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 riprap facing south and west.

Picture facing southeast from impoundment cap.

Woody vegetation on southeast facing riprap. Picture facing south from 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.

Ponded area in southwest corner of site and impoundment cap 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.

Erosional Channel Observations

Two erosional features located on the eastern side of impoundment cap.
Left photo facing west.
Right photo facing east.

APPENDIX B SECOND QUARTER 2024 GROUDNWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-01R	Date:	4/30/2024
Total Depth (Actual):	58.30 (BTOC)	Time:	10:29 AM
Total Depth (Measured):	58.26 (BTOC)	Collection Order:	6
Depth to Water (Measured):	23.20 (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:

Large hole, 3ft southeast of monitoring well.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-02	Date:	4/30/2024
Total Depth (Actual):	58.30 (BTOC)	Time:	9:46 AM
Total Depth (Measured):	58.27 (BTOC)	Collection Order:	4
Depth to Water (Measured):	20.15 (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:	4/30/2024
Total Depth (Actual):	59.90 (BTOC)	Time:	11:25 AM
Total Depth (Measured):	59.50 (BTOC)	Collection Order:	12
Depth to Water (Measured):	22.32 (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-04	Date:	4/30/2024
Total Depth (Actual):	60.27 (BTOC)	Time:	10:44 AM
Total Depth (Measured):	60.27 (BTOC)	Collection Order:	7
Depth to Water (Measured):	24.82 (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:	2 ballards are very lose.

Well Surface Seal: INTACT

Is surrounding area sloped away from well:	y
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-05R	Date:	4/30/2024
Total Depth (Actual):	62.98 (BTOC)	Time:	9:39 AM
Total Depth (Measured):	62.92 (BTOC)	Collection Order:	3
Depth to Water (Measured):	17.54 (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:	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:	n
Well cap in place:	Yes
Comments:	

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D	Date:	4/30/2024
Total Depth (Actual):	155.10 (BTOC)	Time:	9:33 AM
Total Depth (Measured):	156.56 (BTOC)	Collection Order:	2
Depth to Water (Measured):	19.27 (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:	Yes

Well Casing Condition: INTACT

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

General Comments:

Well protector surrounded by sand.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06S	Date:	4/30/2024
Total Depth (Actual):	63.88 (BTOC)	Time:	9:27 AM
Total Depth (Measured):	63.90 (BTOC)	Collection Order:	1
Depth to Water (Measured):	17.34 (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:	Yes

Well Casing Condition: INTACT

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

General Comments:

Well protector surrounded by sand.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07	Date:	4/30/2024
Total Depth (Actual):	62.39 (BTOC)	Time:	11:11 AM
Total Depth (Measured):	63.28 (BTOC)	Collection Order:	10
Depth to Water (Measured):	15.93 (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-08	Date:	4/30/2024
Total Depth (Actual):	62.36 (BTOC)	Time:	11:17 AM
Total Depth (Measured):	62.03 (BTOC)	Collection Order:	11
Depth to Water (Measured):	20.36 (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: 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:	4/30/2024
Total Depth (Actual):	63.18 (BTOC)	Time:	9:56 AM
Total Depth (Measured):	63.18 (BTOC)	Collection Order:	5
Depth to Water (Measured):	25.10 (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:	4/30/2024
Total Depth (Actual):	98.09 (BTOC)	Time:	11:02 AM
Total Depth (Measured):	98.14 (BTOC)	Collection Order:	9
Depth to Water (Measured):	17.14 (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:	4/30/2024
Total Depth (Actual):	62.55 (BTOC)	Time:	10:58 AM
Total Depth (Measured):	62.72 (BTOC)	Collection Order:	8
Depth to Water (Measured):	13.23 (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:

APPENDIX C SECOND QUARTER 2024 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2024/05/01
Sunny 83 Deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 52.26 ()	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 18.74 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 58.26 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 356.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.3 - 58.3 ()
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 18.48 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
17:08	18.74	350	0	19.9	6.46	320.7	NM	3.59	104.3	27.2	NM	Clear, no odor
17:13	18.74	400	0.5	19	6.61	610	NM	0.95	64.4	401	NM	Turbid brown, no odor
17:18	18.74	350	1	17.6	6.66	620	NM	0.92	52.6	231	NM	Turbid brown, no odor
17:23	18.74	350	1.5	17.5	6.7	624	NM	0.91	42.4	170	NM	Cloudy, no odor
17:28	18.74	350	2	17.5	6.71	629	NM	0.9	33.9	109	NM	Cloudy, no odor
17:33	18.74	350	2.5	17.5	6.73	632	NM	0.94	29.9	76.5	NM	Clear, no odor
17:38	18.74	350	3	17.5	6.74	633	NM	0.96	28.9	74.6	NM	Clear, no odor
17:43	18.74	350	3.5	17.4	6.74	633	NM	0.95	29.6	71.3	NM	Clear, no odor

Sample ID(s): APW-01R-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:26

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-04
Well Permit No:

Date: 2024/05/01
Sunny, 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.27 ()	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 20.9 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 60.27 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 337.5 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 21.08 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
15:52	20.9	700	0	17.3	7.03	577	NM	0.61	59.4	8.29	NM	Clear, no odor
15:57	20.9	300	0.5	18	7.1	575.1	NM	0.17	49.7	575	NM	Turbid brown, no odor
16:02	20.9	350	1	17.9	7.19	573.8	NM	0.15	42.8	495	NM	Turbid brown, no odor
16:07	20.9	300	1.5	18.3	7.2	570.8	NM	0.13	37	383	NM	Turbid brown, no odor
16:12	20.9	300	2	18	7.2	570.3	NM	0.1	32.6	254	NM	Turbid brown, no odor
16:17	20.9	300	2.5	18.1	7.2	568.4	NM	0.07	29.4	173	NM	Cloudy, no odor
16:22	20.9	300	3	18.3	7.2	567.2	NM	0.07	26.9	124	NM	Cloudy, no odor
16:27	20.9	300	3.5	18	7.21	568.3	NM	0.06	24.7	71.9	NM	Clear, no odor
16:32	20.9	300	4	18	7.21	568.5	NM	0.06	22.7	49.6	NM	Clear, no odor
16:37	20.9	300	4.5	17.8	7.21	567.2	NM	0.06	21	91.1	NM	Clear, no odor
16:42	20.9	300	5	17.7	7.21	567.2	NM	0.06	20.3	93.8	NM	Clear, no odor
16:47	20.9	300	5.5	17.9	7.22	566.3	NM	0.06	19.4	91.7	NM	Clear, no odor

Sample ID(s): APW-04-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:30

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05R
Well Permit No:

Date: 2024/05/01
Sunny 75 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.92 ()	**Reference Elevation** ()
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 12 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 62.92 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 431.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 27.26 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
09:26	12.02	500	0	15.8	7.29	917	NM	1.97	25.4	184	NM	Cloudy, no odor
09:31	12.02	500	0.75	16.1	7.41	928	NM	0.49	-72.3	246	NM	Cloudy, no odor
09:36	12.02	400	1.25	16.3	7.42	933	NM	0.5	-97.9	70.1	NM	Clear, no odor
09:41	12.02	300	1.75	16.5	7.42	934	NM	0.52	-106.5	22.8	NM	Clear, no odor
09:46	12.02	250	2	16.6	7.41	936	NM	0.57	-111.5	18	NM	Clear, no odor
09:51	12.02	500	2.5	16.7	7.41	933	NM	0.14	-116.5	7.88	NM	Clear, no odor
09:56	12.02	500	3	16.9	7.43	936	NM	0.08	-124.6	8.92	NM	Clear, no odor
10:05	12.02	500	3.5	16.9	7.43	936	NM	0.08	-125.6	8.02	NM	Clear, no odor

Sample ID(s): APW-05R-WG-20240501,DUP-01-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:31

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06D
Well Permit No:

Date: 2024/05/01
Sunny 70 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 151.56 ()	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 15.11 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 156.56 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 456.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 75.2 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
08:17	15.11	400	0	16.8	7.3	733	NM	8.22	7.8	65.8	NM	Clear, slight organic like odor
08:22	15.11	250	0.5	16.4	7.3	712	NM	2.51	-48.3	381	NM	Turbid gray, slight organic like odor
08:27	15.11	500	1	15.9	7.29	712	NM	0.25	-72.9	39.4	NM	Clear, slight organic like odor
08:32	15.11	500	1.5	15.6	7.29	718	NM	0.16	-84	24.1	NM	Clear, no odor
08:37	15.11	500	2	16	7.28	721	NM	0.13	-89.9	30.9	NM	Clear, no odor
08:42	15.11	500	2.5	16.1	7.29	722	NM	0.11	-94.1	37.7	NM	Clear, no odor
08:47	15.11	500	3	16.1	7.3	724	NM	0.11	-96.6	36.3	NM	Clear, no odor
08:52	15.11	500	3.5	16.1	7.3	725	NM	0.11	-97.3	35.8	NM	Clear, no odor

Sample ID(s): APW-06D-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:33

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2024/05/01
Sunny 70 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.9 ()	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 12.32 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 63.9 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 500 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 27.62 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
07:30	12.5	500	0	15.7	7.15	861	NM	4.3	-44.9	17.8	NM	Clear, no odor
07:35	12.5	500	0.5	15.6	7.13	890	NM	0.42	-95.6	8.22	NM	Clear, slight organic like odor
07:40	12.5	500	1	15.6	7.15	879	NM	0.24	-107.8	6.38	NM	Clear, slight organic like odor
07:45	12.5	500	1.5	15.5	7.15	877	NM	0.2	-115.8	4.43	NM	Clear, slight organic like odor
07:50	12.5	500	2	15.6	7.16	876	NM	0.2	-117.5	3.81	NM	Clear, slight organic like odor

Sample ID(s): APW-06S-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:34

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-07
Well Permit No:

Date: 2024/04/30
Sunny 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.28 ()	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 15.27 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 63.28 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 464.3 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 25.71 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
14:08	15.4	500	0	16.2	6.67	1148	NM	1.98	-48.4	137	NM	Clear, no odor
14:13	15.4	250	0.5	16.6	6.77	1144	NM	1.37	-64.4	79.1	NM	Clear, no odor
14:18	15.4	500	1	15.9	6.8	1145	NM	0.7	-70.9	34.2	NM	Clear, no odor
14:23	15.4	500	1.5	16.1	6.82	1143	NM	0.53	-75.8	12.6	NM	Clear, no odor
14:26	15.4	500	2	16.2	6.82	1142	NM	0.44	-78.1	7.04	NM	Clear, no odor
14:31	15.4	500	2.5	16.1	6.82	1144	NM	0.37	-79.6	3.77	NM	Clear, no odor
14:36	15.4	500	3	16.2	6.81	1145	NM	0.35	-80.5	3.34	NM	Clear, no odor

Sample ID(s): APW-07-WG-20240430	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:34

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2024/04/30
Sunny 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.18 ()	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 24.02 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 63.18 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 390.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 20.97 (gal) / 3.75 (gal)	**Well Construction**

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

Time	DTW ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
17:02	24.02	500	0	18.2	7.33	526.3	NM	3.09	77.6	138	NM	Clear, no odor
17:12	24.02	400	0.75	17.1	7.31	545.9	NM	0.17	58.4	347	NM	Cloudy, no odor
17:17	24.02	350	1.25	16.8	7.35	546.3	NM	0.08	49	170	NM	Cloudy, no odor
17:22	24.02	375	1.75	16.7	7.35	545.7	NM	0.07	43.5	38.7	NM	Clear, no odor
17:27	24.02	375	2.25	16.6	7.35	545.6	NM	0.05	38.9	14.8	NM	Clear, no odor
17:32	24.02	375	2.75	16.4	7.35	545.8	NM	0.05	34.8	9.21	NM	Clear, no odor
17:37	24.02	375	3.25	16.4	7.36	545.6	NM	0.05	30.6	7.9	NM	Clear, no odor
17:42	24.02	375	3.75	16.3	7.32	545.6	NM	0.05	30.7	5.69	NM	Clear, no odor

Sample ID(s): APW-09-WG-20240430,DUP-02-WG-20240430	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:36

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10S
Well Permit No:

Date: 2024/04/30
Sunny 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.72 ()	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 12.08 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 62.72 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 371.9 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 27.11 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
15:06	12.48	400	0	16.6	7	1216	NM	0.48	-61.1	365	NM	Turbid gray, no odor
15:11	12.21	175	0.5	16.8	6.97	1215	NM	0.14	-112	1000	NM	Turbid gray, organic like odor
15:16	12.27	400	1	16.3	6.99	1215	NM	0.14	-125.8	457	NM	Turbid gray, organic like odor
15:21	12.27	400	1.5	16.3	6.99	1217	NM	0.12	-131.4	136	NM	Cloudy, organic like odor
15:26	12.27	400	2	16.3	6.98	1217	NM	0.11	-134.4	38.4	NM	Clear, organic like odor
15:31	12.27	400	2.5	16.2	6.98	1218	NM	0.08	-136.9	17.9	NM	Clear, organic like odor
15:36	12.27	400	3	16.3	6.98	1217	NM	0.08	-138.8	16.8	NM	Clear, organic like odor
15:41	12.27	400	3.5	16.3	6.98	1219	NM	0.08	-139.4	17.1	NM	Clear, organic like odor

Sample ID(s): APW-10S-WG-20240430	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		ClaY Sansoucie 	05/05/2024 17:38

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-03
Well Permit No:

Date: 2024/04/30
Sunny 72 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.5 ()	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 22.32 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 59.5 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 398.7 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler clay sansoucie / Marshall arendell	**Volume of Water in Well / Total Volume Purged** 19.91 (gal) / 3.5 ()	**Well Construction**

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

Time	DTW ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
11:49	22.32	350	0	15.9	8.13	702	NM	2.44	99.9	26.9	NM	Clear, no odor
11:54	22.32	400	0.5	15.4	7.69	770	NM	0.24	-28.8	28.5	NM	Clear, no odor
11:59	22.32	371.2	1	15.5	7.69	778	NM	0.16	-81.7	20.9	NM	
12:04	22.32	400	1.5	15.5	7.71	776	NM	0.11	-98	10.2	NM	Clear, no odor
12:09	22.32	470	2.5	15.4	7.73	773	NM	0.1	-105.1	4.87	NM	Clear, no odor
12:14	22.32	400	3	15.4	7.71	771	NM	0.08	-111	2.67	NM	Clear, no odor
12:19	22.32	400	3.5	15.3	7.73	769	NM	0.08	-113.6	2.53	NM	Clear, no odor

Sample ID(s): APW-03-WG-20240430	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:27

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2024/05/01
Sunny 75 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.27 ()	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 13.16 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 63.27 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 159.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.2 - 57.2 ()
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 24.15 (gal) / 1.3 (gal)	**Well Construction**

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

Time	DTW ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
10:52	14.96	250	0	21.3	7.04	1051	NM	2.25	51.2	26.8	NM	Clear, no odor
10:57	15.4	150	0.25	21.5	7.23	1027	NM	1.06	-69.1	796	NM	Turbid gray, no odor
11:02	17.24	150	0.5	22.3	7.2	1028	NM	1.1	-93.4	340	NM	Turbid gray, no odor
11:07	17.98	150	0.6	22.7	7.19	1026	NM	0.97	-97.2	303	NM	Turbid gray, no odor
11:12	18.44	150	0.7	23	7.18	1026	NM	0.98	-98.3	185	NM	Cloudy, no odor
11:17	18.87	150	0.8	23.1	7.17	1025	NM	1.09	-97.6	116	NM	Cloudy, no odor
11:22	19.27	150	0.9	23.4	7.17	1024	NM	0.98	-99.7	90.6	NM	Clear, no odor
11:27	19.55	150	1	24.1	7.16	1023	NM	0.87	-101.8	112	NM	Clear, no odor
11:32	19.79	150	1.1	24.7	7.23	1025	NM	0.8	-103.7	72.7	NM	Clear, no odor
11:37	20.02	150	1.2	24.7	7.34	1029	NM	0.79	-106.2	67.8	NM	Clear, no odor
11:42	20.19	150	1.3	24.7	7.25	1030	NM	0.79	-107	66.1	NM	Clear, no odor

Sample ID(s): APW-02-WG-20240501	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:26

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2024/04/30
Sunny 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.03 ()	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 20.08 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 62.03 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 386.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 22.46 (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 ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
12:57	20.08	350	0	21.9	7.54	541	NM	3.49	77.5	577	NM	Opaque, no odor
13:02	20.08	325	0.5	19.6	7.18	546.1	NM	0.1	-46.5	1000	NM	Turbid brown, no odor
13:07	20.08	400	1	18.8	7.21	540.8	NM	0.1	-43	873	NM	Turbid brown, no odor
13:12	20.08	400	1.5	18.8	7.24	540.6	NM	0.07	-40	535	NM	Turbid brown, no odor
13:17	20.08	400	2	18.7	7.27	533.4	NM	0.06	-37.4	314	NM	Turbid brown, no odor
13:22	20.08	400	2.5	18.6	7.26	532.8	NM	0.07	-36.4	207	NM	Cloudy, no odor
13:27	20.08	400	3	18.5	7.27	533	NM	0.05	-33.9	150	NM	Cloudy, no odor
13:32	20.08	400	3.5	18.7	7.25	531.7	NM	0.05	-32.3	147	NM	Cloudy, no odor
13:37	20.08	400	4	18.8	7.25	533.2	NM	0.05	-31.8	136	NM	Cloudy, no odor

Sample ID(s): APW-08-WG-20240430	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Clay Sansoucie 	05/05/2024 17:35

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2024/04/30
Sunny 80 deg

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 93.14 ()	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 16.44 () / None
Project Number	**Sample Equipment** NA	**Total Well Depth** 98.14 ()
Project Name 20240429-GWMonitor	**Average Purge Rate** 428.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler Clay Sansoucie/Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 43.74 (gal) / 3.25 (gal)	**Well Construction**

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

Time	DTW ()	Flow Rate (mL/min)	Purge Volume ()	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
16:01	16.44	600	0	17.1	7.12	624	NM	8.44	28	758	NM	Turbid gray, no odor
16:06	16.44	400	0.75	16.7	6.95	645	NM	0.3	7.3	NM	NM	Turbid gray, no odor
16:11	16.41	400	1.25	16.5	6.98	645	NM	0.2	3.1	551	NM	Turbid gray, no odor
16:16	16.4	400	1.75	16.5	6.98	647	NM	0.18	4.2	310	NM	Turbid gray, no odor
16:21	16.4	400	2.25	16.5	6.98	648	NM	0.13	5	200	NM	Cloudy, no odor
16:26	16.35	400	2.75	16.5	6.98	650	NM	0.12	6.3	207	NM	Cloudy, no odor
16:31	16.34	400	3.25	16.6	6.98	652	NM	0.12	6.3	198	NM	Cloudy, no odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-10D-WG-20240430		Clay Sansoucie 	05/05/2024 17:37
Analysis:			

APPENDIX D – SECOND QUARTER 2024 LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

June 07, 2024

ERM - St. Louis, MO

Sample Delivery Group:	L1732516
Samples Received:	05/03/2024
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 2Q24 Sampling
Report To:	Randy Homburg
	1968 Craig Road, Suite 100
	Saint Louis, MO 63146

Entire Report Reviewed By:

John Hawkins
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-20240430 L1732516-01 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 12:20 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294205	1	05/28/24 13:24	05/31/24 18:24	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2290711	1	05/22/24 16:03	05/31/24 18:24	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2290711	1	05/22/24 16:03	05/24/24 22:52	ZRG	Mt. Juliet, TN

APW-08-WG-20240430 L1732516-02 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 13:40 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2290711	1	05/22/24 16:03	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2290711	1	05/22/24 16:03	05/24/24 22:52	ZRG	Mt. Juliet, TN

APW-07-WG-20240430 L1732516-03 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 14:40 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2290711	1	05/22/24 16:03	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2290711	1	05/22/24 16:03	05/24/24 22:52	ZRG	Mt. Juliet, TN

APW-10S-WG-20240430 L1732516-04 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 15:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2290711	1	05/22/24 16:03	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2290711	1	05/22/24 16:03	05/24/24 22:52	ZRG	Mt. Juliet, TN

APW-10D-WG-20240430 L1732516-05 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 16:35 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-06S-WG-20240501 L1732516-06 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 07:55 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-06D-WG-20240501 L1732516-07 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 08:55 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-05R-WG-20240501 L1732516-08 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 10:05 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-09-WG-20240430 L1732516-09 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 17:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-02-WG-20240501 L1732516-10 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 11:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-01R-WG-20240501 L1732516-11 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 17:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

APW-04-WG-20240501 L1732516-12 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 16:50 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

EB-01-WG-20240430 L1732516-13 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 09:15 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

DUP-01-WG-20240501 L1732516-14 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 05/01/24 00:01 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	ZRG	Mt. Juliet, TN

DUP-02-WG-20240430 L1732516-15 Non-Potable Water

Collected by: Marshall Avendell | Collected date/time: 04/30/24 00:02 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2294207	1	05/28/24 13:46	05/31/24 22:31	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2292601	1	05/27/24 10:03	05/31/24 22:31	ZRG	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2292601	1	05/27/24 10:03	05/30/24 20:24	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.

John Hawkins
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	0.585		0.256	0.358	0.454	0.238	05/31/2024 18:24	WG2294205
(T) Barium	*95.5*					*30.0-143*	*05/31/2024 18:24*	WG2294205
(T) Yttrium	*106*					*30.0-136*	*05/31/2024 18:24*	WG2294205

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.18		0.461	0.618	05/31/2024 18:24	WG2290711

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	0.594		0.383	0.171	0.419	0.273	05/24/2024 22:52	WG2290711
(T) Barium-133	*93.2*					*30.0-143*	*05/24/2024 22:52*	WG2290711

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	-0.254	U	0.268	0.370	0.510	0.266	05/31/2024 22:31	WG2294207
(T) Barium	*95.2*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*106*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.341	J	0.381	0.595	05/31/2024 22:31	WG2290711

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	0.341		0.271	0.124	0.307	0.214	05/24/2024 22:52	WG2290711
(T) Barium-133	*94.4*					*30.0-143*	*05/24/2024 22:52*	WG2290711

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	0.803		0.291	0.393	0.522	0.272	05/31/2024 22:31	WG2294207
(T) Barium	*96.3*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*97.2*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.42		0.460	0.630	05/31/2024 22:31	WG2290711

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	0.617		0.356	0.170	0.353	0.237	05/24/2024 22:52	WG2290711
(T) Barium-133	*97.4*					*30.0-143*	*05/24/2024 22:52*	WG2290711

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	0.234	U	0.289	0.388	0.534	0.277	05/31/2024 22:31	WG2294207
(T) Barium	*105*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*102*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.582	J	0.416	0.646	05/31/2024 22:31	WG2290711

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	0.347	J	0.299	0.133	0.364	0.244	05/24/2024 22:52	WG2290711
(T) Barium-133	*94.4*					*30.0-143*	*05/24/2024 22:52*	WG2290711

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	0.886		0.294	0.396	0.525	0.274	05/31/2024 22:31	WG2294207
(T) Barium	*93.9*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*104*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.02		0.355	0.604	05/31/2024 22:31	WG2292601

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	0.134	J	0.199	0.0831	0.299	0.209	05/30/2024 20:24	WG2292601
(T) Barium-133	*90.8*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.951		0.345	0.458	0.620	0.323	05/31/2024 22:31	WG2294207
(T) Barium	*86.3*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*90.4*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.66		0.481	0.678	05/31/2024 22:31	WG2292601

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	0.707		0.335	0.157	0.274	0.190	05/30/2024 20:24	WG2292601
(T) Barium-133	*93.1*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	1.10		0.285	0.391	0.501	0.263	05/31/2024 22:31	WG2294207
(T) Barium	*87.3*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*102*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.52		0.369	0.524	05/31/2024 22:31	WG2292601

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	0.422		0.235	0.115	0.152	0.125	05/30/2024 20:24	WG2292601
(T) Barium-133	*95.2*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.940		0.271	0.377	0.479	0.252	05/31/2024 22:31	WG2294207
(T) Barium	*89.6*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*96.8*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.12		0.330	0.534	05/31/2024 22:31	WG2292601

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	0.180	J	0.189	0.0806	0.236	0.179	05/30/2024 20:24	WG2292601
(T) Barium-133	*87.0*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.614		0.214	0.318	0.383	0.203	05/31/2024 22:31	WG2294207
(T) Barium	*92.0*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*99.8*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.866		0.317	0.482	05/31/2024 22:31	WG2292601

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	0.252	J	0.234	0.0892	0.292	0.200	05/30/2024 20:24	WG2292601
(T) Barium-133	*80.4*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.966		0.329	0.437	0.588	0.306	05/31/2024 22:31	WG2294207
(T) Barium	*88.3*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*95.0*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.29		0.419	0.657	05/31/2024 22:31	WG2292601

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	0.326		0.259	0.107	0.293	0.205	05/30/2024 20:24	WG2292601
(T) Barium-133	*85.0*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.671		0.262	0.373	0.471	0.248	05/31/2024 22:31	WG2294207
(T) Barium	*81.5*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*104*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.05		0.394	0.571	05/31/2024 22:31	WG2292601

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	0.383		0.294	0.109	0.323	0.229	05/30/2024 20:24	WG2292601
(T) Barium-133	*76.1*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.451	J	0.288	0.394	0.528	0.277	05/31/2024 22:31	WG2294207
(T) Barium	*88.4*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*107*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.597	J	0.398	0.677	05/31/2024 22:31	WG2292601

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	0.146	U	0.275	0.105	0.423	0.277	05/30/2024 20:24	WG2292601
(T) Barium-133	*88.1*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.963		0.278	0.384	0.491	0.258	05/31/2024 22:31	WG2294207
(T) Barium	*93.8*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*92.2*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.963		0.306	0.577	05/31/2024 22:31	WG2292601

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	0.128	0.0420	0.304	0.222	05/30/2024 20:24	WG2292601
(T) Barium-133	*83.1*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	1.08		0.284	0.390	0.499	0.262	05/31/2024 22:31	WG2294207
(T) Barium	*92.0*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*93.8*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.50		0.435	0.616	05/31/2024 22:31	WG2292601

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	0.427		0.329	0.124	0.361	0.255	05/30/2024 20:24	WG2292601
(T) Barium-133	*77.1*					*30.0-143*	*05/30/2024 20:24*	WG2292601

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	0.510		0.220	0.327	0.398	0.211	05/31/2024 22:31	WG2294207
(T) Barium	*95.4*					*30.0-143*	*05/31/2024 22:31*	WG2294207
(T) Yttrium	*89.3*					*30.0-136*	*05/31/2024 22:31*	WG2294207

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.572		0.287	0.519	05/31/2024 22:31	WG2292601

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	0.0618	U	0.185	0.0637	0.333	0.233	05/30/2024 20:24	WG2292601
(T) Barium-133	*79.3*					*30.0-143*	*05/30/2024 20:24*	WG2292601

Method Blank (MB)

(MB) R4077283-1 05/31/24 18:24

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	-0.292	U	0.174	0.332	0.175
(T) Barium	*90.2*		*90.2*		
(T) Yttrium	*93.4*		*93.4*		

L1732516-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732516-01 05/31/24 18:24 • (DUP) R4077283-5 05/31/24 18:24

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	0.585	0.256	0.454	0.238	2.39	0.811	1.42	0.742	121	2.12		20	3
(T) Barium	*95.5*				*92.8*	*92.8*							
(T) Yttrium	*106*				*79.4*	*79.4*							

Laboratory Control Sample (LCS)

(LCS) R4077283-2 05/31/24 18:24

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.89	118	80.0-120	
(T) Barium			*104*		
(T) Yttrium			*95.2*		

L1733112-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1733112-01 05/31/24 18:24 • (MS) R4077283-3 05/31/24 18:24 • (MSD) R4077283-4 05/31/24 18:24

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	0.123	20.2	19.1	120	114	1	70.0-130			5.85		20
(T) Barium		*88.9*			*87.5*	*84.9*							
(T) Yttrium		*94.0*			*98.7*	*101*							

Method Blank (MB)

(MB) R4077288-1 05/31/24 22:31

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0238	U	0.161	0.304	0.160
(T) Barium	*92.6*		*92.6*		
(T) Yttrium	*104*		*104*		

L1732516-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1732516-07 05/31/24 22:31 • (DUP) R4077288-5 05/31/24 22:31

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	1.10	0.285	0.501	0.263	0.850	0.357	0.645	0.337	25.2	0.538		20	3
(T) Barium	*87.3*				*98.9*	*98.9*							
(T) Yttrium	*102*				*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R4077288-2 05/31/24 22:31

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.02	100	80.0-120	
(T) Barium			*91.1*		
(T) Yttrium			*98.6*		

L1732727-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732727-06 05/31/24 22:31 • (MS) R4077288-3 05/31/24 22:31 • (MSD) R4077288-4 05/31/24 22:31

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	2.45	18.0	17.8	92.8	91.6	1	70.0-130			1.12		20
(T) Barium		*101*			*105*	*100*							
(T) Yttrium		*88.3*			*96.9*	*91.7*							

Method Blank (MB)

(MB) R4075765-1 05/24/24 22:51

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0477		0.0330	0.0389	0.0257
(T) Barium-133	*90.6*		*90.6*		

L1732516-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732516-01 05/24/24 22:52 • (DUP) R4075765-5 05/24/24 22:51

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	0.594	0.383	0.419	0.273	0.423	0.326	0.358	0.253	33.5	0.339		20	3
(T) Barium-133	*93.2*				*79.4*	*79.4*							

Laboratory Control Sample (LCS)

(LCS) R4075765-2 05/24/24 22:51

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.25	105	80.0-120	
(T) Barium-133			*87.3*		

L1731395-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1731395-03 05/24/24 22:51 • (MS) R4075765-3 05/24/24 22:51 • (MSD) R4075765-4 05/24/24 22:51

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	0.747	20.6	21.1	99.2	102	1	75.0-125			2.35		20
(T) Barium-133		*90.3*			*86.5*	*92.7*							

Method Blank (MB)

(MB) R4077899-5 06/04/24 18:02

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.00211	U	0.0269	0.0526	0.0327
(T) Barium-133	*80.3*		*80.3*		

L1732516-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1732516-09 05/30/24 20:24 • (DUP) R4077899-4 05/30/24 20:24

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	0.252	0.234	0.292	0.200	-0.0313	0.322	0.673	0.454	200	0.713	U	20	3
(T) Barium-133	*80.4*				*42.3*	*42.3*							

Laboratory Control Sample (LCS)

(LCS) R4077899-1 05/30/24 20:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.76	115	80.0-120	
(T) Barium-133			*78.2*		

L1732516-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732516-13 05/30/24 20:24 • (MS) R4077899-2 05/30/24 20:24 • (MSD) R4077899-3 05/30/24 20:24

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	0.000	21.1	19.8	106	99.0	1	75.0-125			6.41		20
(T) Barium-133		*83.1*			*81.7*	*83.0*							

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	LA000356
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

Report to: **Randy Homburg**

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

Project Description: **Grand Tower Energy Center Groundwater 2Q24**

City/State Collected:

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):

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

Quote #

Date Results Needed: STD TAT

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 0430	Grab	NPW	54.50	4/30/24	1220	3	X	X									-01
APW-08-WG-2024 0430		NPW	57.03		1340	3	X	X									-02
APW-07-WG-2024 0430		NPW	58.28		1440	3	X	X									-03
APW-10S-WG-2024 0430		NPW	57.72		1545	3	X	X									-04
APW-10D-WG-2024 0430		NPW	93.14		1635	3	X	X									-05
APW-06S-WG-2024 0501		NPW	58.90	5/1/24	0755	3	X	X									-06
APW-06D-WG-2024 0501		NPW	151.56		0855	3	X	X									-07
APW-05R-WG-2024 0501		NPW	57.92		1005	3	X	X									-08
APW-09-WG-2024 0430		NPW	58.18	4/30/24	1745	3	X	X									-09
APW-02-WG-2024 0501		NPW	53.27	5/1/24	1145	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: 5/2/24 — Time: 1200 — Received by: (Signature)

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

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature) CRobledo — Date: 05.03.24 — Time: 0900

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received: 45

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

PH-10BDH5021 TRC-236236?
CR6-20221V

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 # L1352516
B035
Ta

Acctnum: ERMSCMO
Template: T243472
Prelogin: P1066766
PM: 206 - Jeff Carr
PB:

Shipped Via: FedEX Ground

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 2Q24

City/State Collected:

Please Circle: PT MT CT ET

Phone: 314-682-3980

Client Project # 0599247

Lab Project # ERMSCMO-0599247

Collected by (print): Marshall Arundell

Site/Facility ID #

P.O. #

Collected by (signature): Marshall Arundell

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

Quote #

Date Results Needed: STP TAT

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 0501	Grab	NPW	53.26	5/1/24	1745	3	X	X		-11
APW-04-WG-2024 0501		NPW	55.27	5/1/24	1650	3	X	X		-12
EB-01-WG-2024 0430		NPW	NA	4/30/24	0915	3	X	X		-13
DUP-01-WG-2024 0501		NPW		5/1/24	0001	3	X	X		-14
DUP-02-WG-2024 0430		NPW		4/30/24	0002	3	X	X		-15

Analysis / Container / Preservative

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

SDG # L1732516

Table #

Acctnum: ERMSCMO
Template: T243472
Prelogin: P1066766
PM: 206 - Jeff Carr
PB:

Shipped Via: FedEX Ground

* 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)
Marshall Arundell	5/2/24	1200	Tim
Tim			
			Received for lab by: (Signature)
			CROberle

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: °C Bottles Received:

If preservation required by Login: Date/Time

Date: 05-03-24 Time: 0900

Hold:

Condition: NCF / OK

4173251G

Tracking Numbers		Temperature
7123 3306 5478		1.7+0.1=1.8 TLA16
7123 3306 5467		2.4+0.1=2.5 TLA16
7123 3306 5456		1.6+0.1=1.7 TLA16

Name

Date

APPENDIX E – SECOND QUARTER 2024 RADIOLOGICAL LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

May 17, 2024

ERM - St. Louis, MO

Sample Delivery Group:	L1732388
Samples Received:	05/03/2024
Project Number:	0599247
Description:	Grand Tower Energy Center Groundwater 2Q24 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-20240430 L1732388-01 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 12:20 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280393	1	05/04/24 19:06	05/05/24 11:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 16:12	05/10/24 16:12	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 19:50	05/14/24 19:50	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	5	05/13/24 17:36	05/13/24 17:36	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279992	1	05/06/24 10:22	05/07/24 12:33	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:37	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:19	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:19	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:06	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 11:52	SJM	Mt. Juliet, TN

APW-08-WG-20240430 L1732388-02 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 13:40 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280393	1	05/04/24 19:06	05/05/24 11:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 16:25	05/10/24 16:25	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 20:02	05/14/24 20:02	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:34	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:44	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:20	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:26	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:10	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 11:55	SJM	Mt. Juliet, TN

APW-07-WG-20240430 L1732388-03 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 14:40 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280393	1	05/04/24 19:06	05/05/24 11:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 16:38	05/10/24 16:38	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 20:15	05/14/24 20:15	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:36	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:46	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:22	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:28	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:13	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 11:59	SJM	Mt. Juliet, TN

APW-10S-WG-20240430 L1732388-04 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 15:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280393	1	05/04/24 19:06	05/05/24 11:40	MMF	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 16:50	05/10/24 16:50	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:39	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:49	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:27	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:29	ZSA	Mt. Juliet, TN

APW-10S-WG-20240430 L1732388-04 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 15:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:17	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:02	SJM	Mt. Juliet, TN

APW-10D-WG-20240430 L1732388-05 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 16:35 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281506	1	05/07/24 09:50	05/07/24 16:50	DLS	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 17:03	05/10/24 17:03	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:46	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:51	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:29	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:31	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:20	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:05	SJM	Mt. Juliet, TN

APW-06S-WG-20240501 L1732388-06 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 07:55 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2283925	1	05/10/24 10:56	05/11/24 18:01	MMF	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 17:42	05/10/24 17:42	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/13/24 12:55	05/13/24 12:55	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2287138	5	05/16/24 14:46	05/16/24 14:46	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:49	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:54	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:30	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:33	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:24	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:09	SJM	Mt. Juliet, TN

APW-06D-WG-20240501 L1732388-07 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 08:55 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 17:55	05/10/24 17:55	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 20:41	05/14/24 20:41	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:51	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:56	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:32	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:34	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:27	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:12	SJM	Mt. Juliet, TN

APW-05R-WG-20240501 L1732388-08 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 10:05 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 18:08	05/10/24 18:08	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/13/24 13:21	05/13/24 13:21	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2287138	5	05/16/24 15:00	05/16/24 15:00	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:10	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 15:59	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:34	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:36	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:41	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:15	SJM	Mt. Juliet, TN

APW-09-WG-20240430 L1732388-09 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 17:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280923	1	05/06/24 10:58	05/06/24 14:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 18:21	05/10/24 18:21	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 21:32	05/14/24 21:32	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:53	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:02	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:35	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:38	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:45	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:19	SJM	Mt. Juliet, TN

APW-02-WG-20240501 L1732388-10 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 11:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 18:34	05/10/24 18:34	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 21:45	05/14/24 21:45	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	10	05/10/24 18:46	05/10/24 18:46	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:56	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:04	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:37	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:39	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:48	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:22	SJM	Mt. Juliet, TN

APW-01R-WG-20240501 L1732388-11 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 17:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 18:59	05/10/24 18:59	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 21:58	05/14/24 21:58	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 14:58	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:07	NDL	Mt. Juliet, TN

APW-01R-WG-20240501 L1732388-11 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 17:45 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:39	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 16:41	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:51	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:43	SJM	Mt. Juliet, TN

APW-04-WG-20240501 L1732388-12 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 16:50 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 19:12	05/10/24 19:12	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 22:10	05/14/24 22:10	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 15:00	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:14	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:40	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 15:52	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280627	1	05/08/24 08:31	05/09/24 18:55	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:47	SJM	Mt. Juliet, TN

EB-01-WG-20240430 L1732388-13 GW

Collected by: Marshall Avendell | Collected date/time: 04/30/24 09:15 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280923	1	05/06/24 10:58	05/06/24 14:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 19:25	05/10/24 19:25	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2279994	1	05/06/24 10:13	05/07/24 15:03	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 15:54	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:50	SJM	Mt. Juliet, TN

DUP-01-WG-20240501 L1732388-14 GW

Collected by: Marshall Avendell | Collected date/time: 05/01/24 00:01 | Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2281489	1	05/07/24 09:34	05/07/24 13:37	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 19:38	05/10/24 19:38	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 22:23	05/14/24 22:23	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2287138	5	05/16/24 15:13	05/16/24 15:13	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:16	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280307	1	05/07/24 18:35	05/08/24 12:53	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:42	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 15:55	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280629	1	05/11/24 09:15	05/15/24 20:50	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280660	1	05/08/24 01:51	05/09/24 12:53	SJM	Mt. Juliet, TN

SAMPLE SUMMARY

DUP-02-WG-20240430 L1732388-15 GW

Collected by: Marshall Avendell
Collected date/time: 04/30/24 00:02
Received date/time: 05/03/24 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2280923	1	05/06/24 10:58	05/06/24 14:39	JAC	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/10/24 20:17	05/10/24 20:17	DLH	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2281559	1	05/14/24 22:36	05/14/24 22:36	DLH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG2280979	1	05/07/24 16:10	05/07/24 16:10	KRB	Mt. Juliet, TN
Mercury by Method 7470A	WG2280177	1	05/06/24 14:55	05/07/24 16:19	NDL	Mt. Juliet, TN
Mercury by Method 7470A	WG2280307	1	05/07/24 18:35	05/08/24 12:55	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280624	1	05/09/24 09:55	05/09/24 17:47	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2280649	1	05/11/24 08:28	05/11/24 15:57	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280629	1	05/11/24 09:15	05/15/24 20:53	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020A	WG2280661	1	05/10/24 13:49	05/12/24 11:52	LD	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

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	627		10.0	1	05/05/2024 11:40	WG2280393

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	05/10/2024 16:12	WG2281559
Fluoride	0.370		0.150	1	05/14/2024 19:50	WG2281559
Sulfate	285		25.0	5	05/13/2024 17:36	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.80	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-01 WG2280979: 7.8 at 20.9C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 12:33	WG2279992
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:37	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	4.28		0.200	1	05/11/2024 16:19	WG2280649
Boron,Dissolved	4.20	F1	0.200	1	05/09/2024 17:19	WG2280624
Calcium	121		1.00	1	05/11/2024 16:19	WG2280649
Calcium,Dissolved	125	F1	1.00	1	05/09/2024 17:19	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 11:52	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:06	WG2280627
Arsenic	0.00254		0.00200	1	05/09/2024 11:52	WG2280660
Arsenic,Dissolved	0.00219	F1	0.00200	1	05/09/2024 18:06	WG2280627
Barium	0.119		0.00200	1	05/09/2024 11:52	WG2280660
Barium,Dissolved	0.122	F1	0.00200	1	05/09/2024 18:06	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 11:52	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 11:52	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:06	WG2280627
Chromium	ND		0.00200	1	05/09/2024 11:52	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 11:52	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627
Lead	ND		0.00200	1	05/09/2024 11:52	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627
Lithium	0.0327		0.00200	1	05/09/2024 11:52	WG2280660
Lithium,Dissolved	0.0289	F1	0.00200	1	05/09/2024 18:06	WG2280627
Molybdenum	0.0608		0.00500	1	05/09/2024 11:52	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0642	F1	0.00500	1	05/09/2024 18:06	WG2280627
Selenium	ND		0.00200	1	05/09/2024 11:52	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627
Thallium	ND		0.00200	1	05/09/2024 11:52	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:06	WG2280627

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	05/05/2024 11:40	WG2280393

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.2		1.00	1	05/10/2024 16:25	WG2281559
Fluoride	0.336		0.150	1	05/14/2024 20:02	WG2281559
Sulfate	28.6		5.00	1	05/10/2024 16:25	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.53	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-02 WG2280979: 7.53 at 21.2C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:34	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:44	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	05/11/2024 16:26	WG2280649
Boron,Dissolved	ND	F1	0.200	1	05/09/2024 17:20	WG2280624
Calcium	87.8		1.00	1	05/11/2024 16:26	WG2280649
Calcium,Dissolved	88.4	F1	1.00	1	05/09/2024 17:20	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 11:55	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:10	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 11:55	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627
Barium	0.173		0.00200	1	05/09/2024 11:55	WG2280660
Barium,Dissolved	0.172	F1	0.00200	1	05/09/2024 18:10	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 11:55	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 11:55	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:10	WG2280627
Chromium	ND		0.00200	1	05/09/2024 11:55	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 11:55	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627
Lead	ND		0.00200	1	05/09/2024 11:55	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627
Lithium	0.0147		0.00200	1	05/09/2024 11:55	WG2280660
Lithium,Dissolved	0.0137	F1	0.00200	1	05/09/2024 18:10	WG2280627
Molybdenum	ND		0.00500	1	05/09/2024 11:55	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND	F1	0.00500	1	05/09/2024 18:10	WG2280627
Selenium	0.0182		0.00200	1	05/09/2024 11:55	WG2280660
Selenium,Dissolved	0.0185	F1	0.00200	1	05/09/2024 18:10	WG2280627
Thallium	ND		0.00200	1	05/09/2024 11:55	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:10	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	737		13.3	1	05/05/2024 11:40	WG2280393

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	05/10/2024 16:38	WG2281559
Fluoride	ND		0.150	1	05/14/2024 20:15	WG2281559
Sulfate	56.3		5.00	1	05/10/2024 16:38	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.02	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-03 WG2280979: 7.02 at 21.6C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:36	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:46	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	05/11/2024 16:28	WG2280649
Boron,Dissolved	ND	F1	0.200	1	05/09/2024 17:22	WG2280624
Calcium	213		1.00	1	05/11/2024 16:28	WG2280649
Calcium,Dissolved	216	F1	1.00	1	05/09/2024 17:22	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 11:59	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:13	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 11:59	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Barium	0.349		0.00200	1	05/09/2024 11:59	WG2280660
Barium,Dissolved	0.280	F1	0.00200	1	05/09/2024 18:13	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 11:59	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 11:59	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:13	WG2280627
Chromium	ND		0.00200	1	05/09/2024 11:59	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 11:59	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Lead	ND		0.00200	1	05/09/2024 11:59	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Lithium	0.0174		0.00200	1	05/09/2024 11:59	WG2280660
Lithium,Dissolved	0.0167	F1	0.00200	1	05/09/2024 18:13	WG2280627
Molybdenum	ND		0.00500	1	05/09/2024 11:59	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND	F1	0.00500	1	05/09/2024 18:13	WG2280627
Selenium	ND		0.00200	1	05/09/2024 11:59	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627
Thallium	ND		0.00200	1	05/09/2024 11:59	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:13	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	744		20.0	1	05/05/2024 11:40	WG2280393

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	11.4		1.00	1	05/10/2024 16:50	WG2281559
Fluoride	ND		0.150	1	05/10/2024 16:50	WG2281559
Sulfate	ND		5.00	1	05/10/2024 16:50	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.18	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-04 WG2280979: 7.18 at 21.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:39	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:49	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.571		0.200	1	05/11/2024 16:29	WG2280649
Boron,Dissolved	0.544	F1	0.200	1	05/09/2024 17:27	WG2280624
Calcium	163		1.00	1	05/11/2024 16:29	WG2280649
Calcium,Dissolved	160	F1	1.00	1	05/09/2024 17:27	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:02	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:17	WG2280627
Arsenic	0.198		0.00200	1	05/09/2024 12:02	WG2280660
Arsenic,Dissolved	0.0639	F1	0.00200	1	05/09/2024 18:17	WG2280627
Barium	0.559		0.00200	1	05/09/2024 12:02	WG2280660
Barium,Dissolved	0.339	F1	0.00200	1	05/09/2024 18:17	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:02	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:02	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:17	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:02	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:02	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:02	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627
Lithium	0.0293		0.00200	1	05/09/2024 12:02	WG2280660
Lithium,Dissolved	0.0284	F1	0.00200	1	05/09/2024 18:17	WG2280627
Molybdenum	ND		0.00500	1	05/09/2024 12:02	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND	F1	0.00500	1	05/09/2024 18:17	WG2280627
Selenium	ND		0.00200	1	05/09/2024 12:02	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:02	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:17	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	459		10.0	1	05/07/2024 16:50	WG2281506

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	10.9		1.00	1	05/10/2024 17:03	WG2281559
Fluoride	ND		0.150	1	05/10/2024 17:03	WG2281559
Sulfate	35.3		5.00	1	05/10/2024 17:03	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.38	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-05 WG2280979: 7.38 at 21.5C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:46	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:51	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	05/11/2024 16:31	WG2280649
Boron,Dissolved	ND	F1	0.200	1	05/09/2024 17:29	WG2280624
Calcium	141		1.00	1	05/11/2024 16:31	WG2280649
Calcium,Dissolved	121	F1	1.00	1	05/09/2024 17:29	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:05	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:20	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 12:05	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:20	WG2280627
Barium	0.351		0.00200	1	05/09/2024 12:05	WG2280660
Barium,Dissolved	0.369	F1	0.00200	1	05/09/2024 18:20	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:05	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:20	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:05	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:20	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:05	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:20	WG2280627
Cobalt	0.00271		0.00200	1	05/09/2024 12:05	WG2280660
Cobalt,Dissolved	0.00238	F1	0.00200	1	05/09/2024 18:20	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:05	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:20	WG2280627
Lithium	0.0142		0.00200	1	05/09/2024 12:05	WG2280660
Lithium,Dissolved	0.0140	F1	0.00200	1	05/09/2024 18:20	WG2280627
Molybdenum	ND		0.00500	1	05/09/2024 12:05	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND	F1	0.00500	1	05/09/2024 18:20	WG2280627
Selenium	0.00264		0.00200	1	05/09/2024 12:05	WG2280660
Selenium,Dissolved	0.00238	F1	0.00200	1	05/09/2024 18:20	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:05	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:20	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	678	Q	10.0	1	05/11/2024 18:01	WG2283925

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	21.6		1.00	1	05/10/2024 17:42	WG2281559
Fluoride	ND		0.150	1	05/13/2024 12:55	WG2281559
Sulfate	211		25.0	5	05/16/2024 14:46	WG2287138

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.35	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-06 WG2280979: 7.35 at 21.9C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:49	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:54	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	5.54		0.200	1	05/11/2024 16:33	WG2280649
Boron,Dissolved	5.36	F1	0.200	1	05/09/2024 17:30	WG2280624
Calcium	120		1.00	1	05/11/2024 16:33	WG2280649
Calcium,Dissolved	120	F1	1.00	1	05/09/2024 17:30	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:09	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:24	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 12:09	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Barium	0.230		0.00200	1	05/09/2024 12:09	WG2280660
Barium,Dissolved	0.199	F1	0.00200	1	05/09/2024 18:24	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:09	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:09	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:24	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:09	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:09	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:09	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Lithium	0.0408		0.00200	1	05/09/2024 12:09	WG2280660
Lithium,Dissolved	0.0380	F1	0.00200	1	05/09/2024 18:24	WG2280627
Molybdenum	0.231		0.00500	1	05/09/2024 12:09	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.240	F1	0.00500	1	05/09/2024 18:24	WG2280627
Selenium	ND		0.00200	1	05/09/2024 12:09	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:09	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:24	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	549		10.0	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	21.5		1.00	1	05/10/2024 17:55	WG2281559
Fluoride	ND		0.150	1	05/14/2024 20:41	WG2281559
Sulfate	184		5.00	1	05/10/2024 17:55	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.54	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-07 WG2280979: 7.54 at 21.8C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:51	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:56	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	3.13		0.200	1	05/11/2024 16:34	WG2280649
Boron,Dissolved	2.98	F1	0.200	1	05/09/2024 17:32	WG2280624
Calcium	114		1.00	1	05/11/2024 16:34	WG2280649
Calcium,Dissolved	114	F1	1.00	1	05/09/2024 17:32	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:12	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:27	WG2280627
Arsenic	0.0108		0.00200	1	05/09/2024 12:12	WG2280660
Arsenic,Dissolved	0.00585	F1	0.00200	1	05/09/2024 18:27	WG2280627
Barium	0.119		0.00200	1	05/09/2024 12:12	WG2280660
Barium,Dissolved	0.115	F1	0.00200	1	05/09/2024 18:27	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:12	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:12	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:27	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:12	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:12	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:12	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627
Lithium	0.0171		0.00200	1	05/09/2024 12:12	WG2280660
Lithium,Dissolved	0.0159	F1	0.00200	1	05/09/2024 18:27	WG2280627
Molybdenum	0.0720		0.00500	1	05/09/2024 12:12	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0748	F1	0.00500	1	05/09/2024 18:27	WG2280627
Selenium	ND		0.00200	1	05/09/2024 12:12	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:12	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:27	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	764		13.3	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	15.8		1.00	1	05/10/2024 18:08	WG2281559
Fluoride	ND		0.150	1	05/13/2024 13:21	WG2281559
Sulfate	365		25.0	5	05/16/2024 15:00	WG2287138

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.60	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-08 WG2280979: 7.6 at 21.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:10	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 15:59	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	9.28		0.200	1	05/11/2024 16:36	WG2280649
Boron,Dissolved	8.86	F1	0.200	1	05/09/2024 17:34	WG2280624
Calcium	141		1.00	1	05/11/2024 16:36	WG2280649
Calcium,Dissolved	142	F1	1.00	1	05/09/2024 17:34	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:15	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:41	WG2280627
Arsenic	0.00228		0.00200	1	05/09/2024 12:15	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Barium	0.195		0.00200	1	05/09/2024 12:15	WG2280660
Barium,Dissolved	0.161	F1	0.00200	1	05/09/2024 18:41	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:15	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:15	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:41	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:15	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:15	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:15	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Lithium	0.0385		0.00200	1	05/09/2024 12:15	WG2280660
Lithium,Dissolved	0.0362	F1	0.00200	1	05/09/2024 18:41	WG2280627
Molybdenum	0.221		0.00500	1	05/09/2024 12:15	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.213	F1	0.00500	1	05/09/2024 18:41	WG2280627
Selenium	ND		0.00200	1	05/09/2024 12:15	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:15	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:41	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	367		10.0	1	05/06/2024 14:39	WG2280923

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	14.3		1.00	1	05/10/2024 18:21	WG2281559
Fluoride	0.339		0.150	1	05/14/2024 21:32	WG2281559
Sulfate	53.6		5.00	1	05/10/2024 18:21	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.70	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-09 WG2280979: 7.7 at 21.5C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:53	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:02	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.501		0.200	1	05/11/2024 16:38	WG2280649
Boron,Dissolved	0.481	F1	0.200	1	05/09/2024 17:35	WG2280624
Calcium	88.3		1.00	1	05/11/2024 16:38	WG2280649
Calcium,Dissolved	88.5	F1	1.00	1	05/09/2024 17:35	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:19	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:45	WG2280627
Arsenic	0.00227		0.00200	1	05/09/2024 12:19	WG2280660
Arsenic,Dissolved	0.00222	F1	0.00200	1	05/09/2024 18:45	WG2280627
Barium	0.113		0.00200	1	05/09/2024 12:19	WG2280660
Barium,Dissolved	0.114	F1	0.00200	1	05/09/2024 18:45	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:19	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:45	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:19	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:45	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:19	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:45	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:19	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:45	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:19	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:45	WG2280627
Lithium	0.0163		0.00200	1	05/09/2024 12:19	WG2280660
Lithium,Dissolved	0.0159	F1	0.00200	1	05/09/2024 18:45	WG2280627
Molybdenum	0.0310		0.00500	1	05/09/2024 12:19	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0311	F1	0.00500	1	05/09/2024 18:45	WG2280627
Selenium	0.0334		0.00200	1	05/09/2024 12:19	WG2280660
Selenium,Dissolved	0.0319	F1	0.00200	1	05/09/2024 18:45	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:19	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:45	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	845		13.3	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	5.38		1.00	1	05/10/2024 18:34	WG2281559
Fluoride	0.250		0.150	1	05/14/2024 21:45	WG2281559
Sulfate	510		50.0	10	05/10/2024 18:46	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.14	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-10 WG2280979: 7.14 at 21.3C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:56	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:04	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	10.2		0.200	1	05/11/2024 16:39	WG2280649
Boron,Dissolved	9.91	F1	0.200	1	05/09/2024 17:37	WG2280624
Calcium	161		1.00	1	05/11/2024 16:39	WG2280649
Calcium,Dissolved	162	F1	1.00	1	05/09/2024 17:37	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:22	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:48	WG2280627
Arsenic	0.0101		0.00200	1	05/09/2024 12:22	WG2280660
Arsenic,Dissolved	0.00255	F1	0.00200	1	05/09/2024 18:48	WG2280627
Barium	0.145		0.00200	1	05/09/2024 12:22	WG2280660
Barium,Dissolved	0.137	F1	0.00200	1	05/09/2024 18:48	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:22	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:22	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:48	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:22	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:22	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:22	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627
Lithium	0.0450		0.00200	1	05/09/2024 12:22	WG2280660
Lithium,Dissolved	0.0432	F1	0.00200	1	05/09/2024 18:48	WG2280627
Molybdenum	0.332		0.00500	1	05/09/2024 12:22	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.340	F1	0.00500	1	05/09/2024 18:48	WG2280627
Selenium	ND		0.00200	1	05/09/2024 12:22	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:22	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:48	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	439		10.0	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	7.19		1.00	1	05/10/2024 18:59	WG2281559
Fluoride	0.326		0.150	1	05/14/2024 21:58	WG2281559
Sulfate	61.7		5.00	1	05/10/2024 18:59	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.04	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-11 WG2280979: 7.04 at 21.7C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 14:58	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:07	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.247		0.200	1	05/11/2024 16:41	WG2280649
Boron,Dissolved	0.238	F1	0.200	1	05/09/2024 17:39	WG2280624
Calcium	98.0		1.00	1	05/11/2024 16:41	WG2280649
Calcium,Dissolved	101	F1	1.00	1	05/09/2024 17:39	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:43	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:51	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 12:43	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627
Barium	0.204		0.00200	1	05/09/2024 12:43	WG2280660
Barium,Dissolved	0.194	F1	0.00200	1	05/09/2024 18:51	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:43	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:43	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:51	WG2280627
Chromium	0.00322		0.00200	1	05/09/2024 12:43	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627
Cobalt	0.00225		0.00200	1	05/09/2024 12:43	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:43	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627
Lithium	0.0150		0.00200	1	05/09/2024 12:43	WG2280660
Lithium,Dissolved	0.0143	F1	0.00200	1	05/09/2024 18:51	WG2280627
Molybdenum	ND		0.00500	1	05/09/2024 12:43	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	ND	F1	0.00500	1	05/09/2024 18:51	WG2280627
Selenium	0.00437		0.00200	1	05/09/2024 12:43	WG2280660
Selenium,Dissolved	0.00444	F1	0.00200	1	05/09/2024 18:51	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:43	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:51	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	404		10.0	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	11.6		1.00	1	05/10/2024 19:12	WG2281559
Fluoride	0.201		0.150	1	05/14/2024 22:10	WG2281559
Sulfate	53.9		5.00	1	05/10/2024 19:12	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.50	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:
L1732388-12 WG2280979: 7.5 at 21.8C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 15:00	WG2279994
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:14	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.578		0.200	1	05/11/2024 15:52	WG2280649
Boron,Dissolved	0.556	F1	0.200	1	05/09/2024 17:40	WG2280624
Calcium	93.4		1.00	1	05/11/2024 15:52	WG2280649
Calcium,Dissolved	93.1	F1	1.00	1	05/09/2024 17:40	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:47	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/09/2024 18:55	WG2280627
Arsenic	ND		0.00200	1	05/09/2024 12:47	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627
Barium	0.120		0.00200	1	05/09/2024 12:47	WG2280660
Barium,Dissolved	0.128	F1	0.00200	1	05/09/2024 18:55	WG2280627
Beryllium	ND		0.00200	1	05/09/2024 12:47	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627
Cadmium	ND		0.00100	1	05/09/2024 12:47	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/09/2024 18:55	WG2280627
Chromium	ND		0.00200	1	05/09/2024 12:47	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627
Cobalt	ND		0.00200	1	05/09/2024 12:47	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627
Lead	ND		0.00200	1	05/09/2024 12:47	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627
Lithium	0.0277		0.00200	1	05/09/2024 12:47	WG2280660
Lithium,Dissolved	0.0264	F1	0.00200	1	05/09/2024 18:55	WG2280627
Molybdenum	0.0494		0.00500	1	05/09/2024 12:47	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0511	F1	0.00500	1	05/09/2024 18:55	WG2280627
Selenium	0.0218		0.00200	1	05/09/2024 12:47	WG2280660
Selenium,Dissolved	0.0221	F1	0.00200	1	05/09/2024 18:55	WG2280627
Thallium	ND		0.00200	1	05/09/2024 12:47	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/09/2024 18:55	WG2280627

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	ND		10.0	1	05/06/2024 14:39	WG2280923

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	ND		1.00	1	05/10/2024 19:25	WG2281559
Fluoride	ND		0.150	1	05/10/2024 19:25	WG2281559
Sulfate	ND		5.00	1	05/10/2024 19:25	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	6.80	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-13 WG2280979: 6.8 at 21.8C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/07/2024 15:03	WG2279994

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	ND		0.200	1	05/11/2024 15:54	WG2280649
Calcium	ND		1.00	1	05/11/2024 15:54	WG2280649

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:50	WG2280660
Arsenic	ND		0.00200	1	05/09/2024 12:50	WG2280660
Barium	ND		0.00200	1	05/09/2024 12:50	WG2280660
Beryllium	ND		0.00200	1	05/09/2024 12:50	WG2280660
Cadmium	ND		0.00100	1	05/09/2024 12:50	WG2280660
Chromium	ND		0.00200	1	05/09/2024 12:50	WG2280660
Cobalt	ND		0.00200	1	05/09/2024 12:50	WG2280660
Lead	ND		0.00200	1	05/09/2024 12:50	WG2280660
Lithium	ND		0.00200	1	05/09/2024 12:50	WG2280660
Molybdenum	ND		0.00500	1	05/09/2024 12:50	WG2280660
Selenium	ND		0.00200	1	05/09/2024 12:50	WG2280660
Thallium	ND		0.00200	1	05/09/2024 12:50	WG2280660

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	740		13.3	1	05/07/2024 13:37	WG2281489

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	16.1		1.00	1	05/10/2024 19:38	WG2281559
Fluoride	0.301		0.150	1	05/14/2024 22:23	WG2281559
Sulfate	368		25.0	5	05/16/2024 15:13	WG2287138

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.62	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-14 WG2280979: 7.62 at 22.4C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/08/2024 12:53	WG2280307
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:16	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	9.26		0.200	1	05/11/2024 15:55	WG2280649
Boron,Dissolved	8.89	F1	0.200	1	05/09/2024 17:42	WG2280624
Calcium	139		1.00	1	05/11/2024 15:55	WG2280649
Calcium,Dissolved	142	F1	1.00	1	05/09/2024 17:42	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/09/2024 12:53	WG2280660
Antimony,Dissolved	ND	F1	0.00400	1	05/15/2024 20:50	WG2280629
Arsenic	0.00235		0.00200	1	05/09/2024 12:53	WG2280660
Arsenic,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Barium	0.190		0.00200	1	05/09/2024 12:53	WG2280660
Barium,Dissolved	0.151	F1	0.00200	1	05/15/2024 20:50	WG2280629
Beryllium	ND		0.00200	1	05/09/2024 12:53	WG2280660
Beryllium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Cadmium	ND		0.00100	1	05/09/2024 12:53	WG2280660
Cadmium,Dissolved	ND	F1	0.00100	1	05/15/2024 20:50	WG2280629
Chromium	ND		0.00200	1	05/09/2024 12:53	WG2280660
Chromium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Cobalt	ND		0.00200	1	05/09/2024 12:53	WG2280660
Cobalt,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Lead	ND		0.00200	1	05/09/2024 12:53	WG2280660
Lead,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Lithium	0.0377		0.00200	1	05/09/2024 12:53	WG2280660
Lithium,Dissolved	0.0394	F1	0.00200	1	05/15/2024 20:50	WG2280629
Molybdenum	0.214		0.00500	1	05/09/2024 12:53	WG2280660

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.215	F1	0.00500	1	05/15/2024 20:50	WG2280629
Selenium	ND		0.00200	1	05/09/2024 12:53	WG2280660
Selenium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629
Thallium	ND		0.00200	1	05/09/2024 12:53	WG2280660
Thallium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:50	WG2280629

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Dissolved Solids	365		10.0	1	05/06/2024 14:39	WG2280923

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	14.0		1.00	1	05/10/2024 20:17	WG2281559
Fluoride	0.230		0.150	1	05/14/2024 22:36	WG2281559
Sulfate	53.5	J6	5.00	1	05/10/2024 20:17	WG2281559

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.81	T8	1	05/07/2024 16:10	WG2280979

Sample Narrative:

L1732388-15 WG2280979: 7.81 at 22.1C

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Mercury	ND		0.000200	1	05/08/2024 12:55	WG2280307
Mercury,Dissolved	ND	F1	0.000200	1	05/07/2024 16:19	WG2280177

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Boron	0.493		0.200	1	05/11/2024 15:57	WG2280649
Boron,Dissolved	0.466	F1	0.200	1	05/09/2024 17:47	WG2280624
Calcium	87.9		1.00	1	05/11/2024 15:57	WG2280649
Calcium,Dissolved	88.3	F1	1.00	1	05/09/2024 17:47	WG2280624

Metals (ICPMS) by Method 6020A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Antimony	ND		0.00400	1	05/12/2024 11:52	WG2280661
Antimony,Dissolved	ND	F1	0.00400	1	05/15/2024 20:53	WG2280629
Arsenic	0.00216		0.00200	1	05/12/2024 11:52	WG2280661
Arsenic,Dissolved	0.00223	F1	0.00200	1	05/15/2024 20:53	WG2280629
Barium	0.109		0.00200	1	05/12/2024 11:52	WG2280661
Barium,Dissolved	0.117	F1	0.00200	1	05/15/2024 20:53	WG2280629
Beryllium	ND		0.00200	1	05/12/2024 11:52	WG2280661
Beryllium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:53	WG2280629
Cadmium	ND		0.00100	1	05/12/2024 11:52	WG2280661
Cadmium,Dissolved	ND	F1	0.00100	1	05/15/2024 20:53	WG2280629
Chromium	ND		0.00200	1	05/12/2024 11:52	WG2280661
Chromium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:53	WG2280629
Cobalt	ND		0.00200	1	05/12/2024 11:52	WG2280661
Cobalt,Dissolved	ND	F1	0.00200	1	05/15/2024 20:53	WG2280629
Lead	ND		0.00200	1	05/12/2024 11:52	WG2280661
Lead,Dissolved	ND	F1	0.00200	1	05/15/2024 20:53	WG2280629
Lithium	0.0191		0.00200	1	05/12/2024 11:52	WG2280661
Lithium,Dissolved	0.0170	F1	0.00200	1	05/15/2024 20:53	WG2280629
Molybdenum	0.0295		0.00500	1	05/12/2024 11:52	WG2280661

Metals (ICPMS) by Method 6020A

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Molybdenum,Dissolved	0.0309	F1	0.00500	1	05/15/2024 20:53	WG2280629
Selenium	0.0328		0.00200	1	05/12/2024 11:52	WG2280661
Selenium,Dissolved	0.0354	F1	0.00200	1	05/15/2024 20:53	WG2280629
Thallium	ND		0.00200	1	05/12/2024 11:52	WG2280661
Thallium,Dissolved	ND	F1	0.00200	1	05/15/2024 20:53	WG2280629

Method Blank (MB)

(MB) R4066773-1 05/05/24 11:40

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

L1732388-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732388-01 05/05/24 11:40 • (DUP) R4066773-3 05/05/24 11:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	627	625	1	0.319		10

L1732388-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1732388-02 05/05/24 11:40 • (DUP) R4066773-4 05/05/24 11:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	371	381	1	2.66		10

Laboratory Control Sample (LCS)

(LCS) R4066773-2 05/05/24 11:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8410	95.6	85.0-115	

Method Blank (MB)

(MB) R4067429-1 05/06/24 14:39

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

L1732096-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732096-01 05/06/24 14:39 • (DUP) R4067429-3 05/06/24 14:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	179	182	1	1.66		10

L1732101-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732101-01 05/06/24 14:39 • (DUP) R4067429-4 05/06/24 14:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	174	186	1	6.67		10

Laboratory Control Sample (LCS)

(LCS) R4067429-2 05/06/24 14:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8310	94.4	85.0-115	

Method Blank (MB)

(MB) R4068025-1 05/07/24 13:37

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

L1732388-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1732388-07 05/07/24 13:37 • (DUP) R4068025-3 05/07/24 13:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	549	567	1	3.23		10

L1732388-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1732388-08 05/07/24 13:37 • (DUP) R4068025-4 05/07/24 13:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	764	777	1	1.73		10

Laboratory Control Sample (LCS)

(LCS) R4068025-2 05/07/24 13:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8250	93.8	85.0-115	

Method Blank (MB)

(MB) R4068027-1 05/07/24 16:50

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

L1731602-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1731602-01 05/07/24 16:50 • (DUP) R4068027-3 05/07/24 16:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	413	423	1	2.39		10

L1731605-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1731605-01 05/07/24 16:50 • (DUP) R4068027-4 05/07/24 16:50

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	415	405	1	2.44		10

Laboratory Control Sample (LCS)

(LCS) R4068027-2 05/07/24 16:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8250	93.8	85.0-115	

Method Blank (MB)

(MB) R4069087-1 05/11/24 18:01

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

L1734609-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1734609-01 05/11/24 18:01 • (DUP) R4069087-3 05/11/24 18:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	584	582	1	0.343		10

L1734609-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1734609-03 05/11/24 18:01 • (DUP) R4069087-4 05/11/24 18:01

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	202	205	1	1.47		10

Laboratory Control Sample (LCS)

(LCS) R4069087-2 05/11/24 18:01

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800	8620	98.0	85.0-115	

Method Blank (MB)

(MB) R4068794-1 05/10/24 10:03

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Sulfate	U		0.594	5.00

L1732298-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732298-01 05/10/24 14:55 • (DUP) R4068794-3 05/10/24 15:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1.60	1.76	1	9.74		15
Sulfate	ND	ND	1	8.12		15

L1732388-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1732388-15 05/10/24 20:17 • (DUP) R4068794-6 05/10/24 20:30

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	14.0	14.1	1	0.115		15
Sulfate	53.5	53.6	1	0.290		15

Laboratory Control Sample (LCS)

(LCS) R4068794-2 05/10/24 10:16

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40.0	39.2	98.1	80.0-120	
Fluoride	8.00	8.08	101	80.0-120	
Sulfate	40.0	39.7	99.3	80.0-120	

L1732298-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732298-01 05/10/24 14:55 • (MS) R4068794-4 05/10/24 15:20 • (MSD) R4068794-5 05/10/24 15:33

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 %
Chloride	40.0	1.60	41.7	41.2	100	99.0	1	80.0-120			1.26	15
Sulfate	40.0	ND	44.9	44.9	104	104	1	80.0-120			0.0975	15

L1732388-15 Original Sample (OS) • Matrix Spike (MS)

(OS) L1732388-15 05/10/24 20:17 • (MS) R4068794-7 05/10/24 20:44

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40.0	14.0	50.9	92.1	1	80.0-120	
Sulfate	40.0	53.5	84.8	78.4	1	80.0-120	J6

Method Blank (MB)

(MB) R4070679-1 05/16/24 06:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U		0.594	5.00

L1736439-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1736439-02 05/16/24 07:13 • (DUP) R4070679-3 05/16/24 07:27

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	68.6	66.6	1	3.01		15

L1736439-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1736439-15 05/16/24 10:39 • (DUP) R4070679-6 05/16/24 10:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	ND	ND	1	1.70		15

Laboratory Control Sample (LCS)

(LCS) R4070679-2 05/16/24 06:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	38.9	97.2	80.0-120	

L1736439-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1736439-02 05/16/24 07:13 • (MS) R4070679-4 05/16/24 07:41 • (MSD) R4070679-5 05/16/24 07:55

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 %
Sulfate	40.0	68.6	99.8	91.6	78.0	57.4	1	80.0-120	J6	J6	8.60	15

L1736439-15 Original Sample (OS) • Matrix Spike (MS)

(OS) L1736439-15 05/16/24 10:39 • (MS) R4070679-7 05/16/24 11:07

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	40.0	ND	40.6	97.0	1	80.0-120	

L1732376-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732376-01 05/07/24 16:10 • (DUP) R4066850-2 05/07/24 16:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.80	7.80	1	0.000		1

Sample Narrative:

OS: 7.8 at 21.8C

DUP: 7.8 at 22.4C

L1732402-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1732402-01 05/07/24 16:10 • (DUP) R4066850-3 05/07/24 16:10

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.43	7.45	1	0.269		1

Sample Narrative:

OS: 7.43 at 22.9C

DUP: 7.45 at 23.1C

Laboratory Control Sample (LCS)

(LCS) R4066850-1 05/07/24 16:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 23.4C

Method Blank (MB)

(MB) R4066627-1 05/07/24 11:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4066627-2 05/07/24 11:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00325	108	80.0-120	

L1732256-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732256-03 05/07/24 11:44 • (MS) R4066627-4 05/07/24 11:54 • (MSD) R4066627-5 05/07/24 11:56

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	0.00332	0.00335	111	112	1	75.0-125			0.845	20

QUALITY CONTROL SUMMARY

L1732388-02,03,04,05,06,07,08,09,10,11,12,13

Method Blank (MB)

(MB) R4066755-1 05/07/24 14:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4066755-2 05/07/24 14:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00336	112	80.0-120	

L1732388-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732388-08 05/07/24 14:10 • (MS) R4066755-4 05/07/24 14:19 • (MSD) R4066755-5 05/07/24 14:22

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	0.00329	0.00327	110	109	1	75.0-125			0.634	20

Method Blank (MB)

(MB) R4066787-1 05/07/24 15:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury,Dissolved	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4066787-2 05/07/24 15:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	0.00300	0.00340	113	80.0-120	

L1732878-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732878-01 05/07/24 15:24 • (MS) R4066787-4 05/07/24 15:29 • (MSD) R4066787-5 05/07/24 15:32

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	0.00339	0.00339	113	113	1	75.0-125			0.104	20

Method Blank (MB)

(MB) R4067337-1 05/08/24 12:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

Laboratory Control Sample (LCS)

(LCS) R4067337-2 05/08/24 12:41

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	0.00300	0.00282	94.1	80.0-120	

L1732738-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732738-01 05/08/24 12:44 • (MS) R4067337-4 05/08/24 12:48 • (MSD) R4067337-5 05/08/24 12:51

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	0.00294	0.00293	97.9	97.6	1	75.0-125			0.356	20

Method Blank (MB)

(MB) R4067979-1 05/09/24 17:07

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) R4067979-2 05/09/24 17:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	1.00	0.925	92.5	80.0-120	
Calcium,Dissolved	10.0	9.49	94.9	80.0-120	

L1732176-16 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732176-16 05/09/24 17:10 • (MS) R4067979-4 05/09/24 17:14 • (MSD) R4067979-5 05/09/24 17:15

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	0.960	0.965	93.7	94.2	1	75.0-125			0.581	20
Calcium,Dissolved	10.0	9.32	18.9	18.9	95.5	95.5	1	75.0-125			0.0335	20

Method Blank (MB)

(MB) R4068662-1 05/11/24 16:04

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) R4068662-2 05/11/24 16:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1.00	0.979	97.9	80.0-120	
Calcium	10.0	10.0	100	80.0-120	

Method Blank (MB)

(MB) R4067955-7 05/09/24 17:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony,Dissolved	U		0.00103	0.00400
Arsenic,Dissolved	U		0.000180	0.00200
Barium,Dissolved	U		0.000381	0.00200
Beryllium,Dissolved	U		0.000190	0.00200
Cadmium,Dissolved	U		0.000150	0.00100
Chromium,Dissolved	U		0.00124	0.00200
Cobalt,Dissolved	U		0.0000596	0.00200
Lead,Dissolved	U		0.000849	0.00200
Lithium,Dissolved	U		0.000695	0.00200
Molybdenum,Dissolved	U		0.000348	0.00500
Selenium,Dissolved	U		0.000300	0.00200
Thallium,Dissolved	0.000123	J	0.000121	0.00200

Laboratory Control Sample (LCS)

(LCS) R4067955-8 05/09/24 17:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	0.0500	0.0505	101	80.0-120	
Arsenic,Dissolved	0.0500	0.0498	99.5	80.0-120	
Barium,Dissolved	0.0500	0.0489	97.8	80.0-120	
Beryllium,Dissolved	0.0500	0.0493	98.5	80.0-120	
Cadmium,Dissolved	0.0500	0.0511	102	80.0-120	
Chromium,Dissolved	0.0500	0.0504	101	80.0-120	
Cobalt,Dissolved	0.0500	0.0515	103	80.0-120	
Lead,Dissolved	0.0500	0.0495	99.0	80.0-120	
Lithium,Dissolved	0.0500	0.0477	95.4	80.0-120	
Molybdenum,Dissolved	0.0500	0.0500	100	80.0-120	
Selenium,Dissolved	0.0500	0.0489	97.9	80.0-120	
Thallium,Dissolved	0.0500	0.0497	99.4	80.0-120	

L1731747-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1731747-01 05/09/24 17:21 • (MS) R4067955-10 05/09/24 17:28 • (MSD) R4067955-11 05/09/24 17:31

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	0.0566	0.0549	113	110	1	75.0-125			3.11	20
Arsenic,Dissolved	0.0500	0.00360	0.0557	0.0566	104	106	1	75.0-125			1.61	20
Barium,Dissolved	0.0500	0.0996	0.158	0.154	118	108	1	75.0-125			3.06	20

L1731747-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1731747-01 05/09/24 17:21 • (MS) R4067955-10 05/09/24 17:28 • (MSD) R4067955-11 05/09/24 17:31

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	0.0500	0.0492	99.7	98.1	1	75.0-125			1.60	20
Cadmium,Dissolved	0.0500	ND	0.0497	0.0509	99.4	102	1	75.0-125			2.36	20
Chromium,Dissolved	0.0500	ND	0.0495	0.0515	98.9	103	1	75.0-125			4.06	20
Cobalt,Dissolved	0.0500	0.0100	0.0596	0.0617	99.1	103	1	75.0-125			3.54	20
Lead,Dissolved	0.0500	ND	0.0486	0.0496	97.3	99.2	1	75.0-125			1.94	20
Lithium,Dissolved	0.0500		0.0937	0.0948	98.8	101	1	75.0-125			1.25	20
Molybdenum,Dissolved	0.0500	ND	0.0540	0.0539	106	106	1	75.0-125			0.118	20
Selenium,Dissolved	0.0500	ND	0.0530	0.0530	103	104	1	75.0-125			0.0884	20
Thallium,Dissolved	0.0500	ND	0.0488	0.0495	97.6	99.1	1	75.0-125			1.50	20

Method Blank (MB)

(MB) R4070241-1 05/15/24 20:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony,Dissolved	U		0.00103	0.00400
Arsenic,Dissolved	U		0.000180	0.00200
Barium,Dissolved	U		0.000381	0.00200
Beryllium,Dissolved	U		0.000190	0.00200
Cadmium,Dissolved	U		0.000150	0.00100
Chromium,Dissolved	0.00136	J	0.00124	0.00200
Cobalt,Dissolved	U		0.0000596	0.00200
Lead,Dissolved	U		0.000849	0.00200
Lithium,Dissolved	U		0.000695	0.00200
Molybdenum,Dissolved	U		0.000348	0.00500
Selenium,Dissolved	0.000811	J	0.000300	0.00200
Thallium,Dissolved	U		0.000121	0.00200

Laboratory Control Sample (LCS)

(LCS) R4070241-2 05/15/24 20:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	0.0500	0.0542	108	80.0-120	
Arsenic,Dissolved	0.0500	0.0506	101	80.0-120	
Barium,Dissolved	0.0500	0.0491	98.3	80.0-120	
Beryllium,Dissolved	0.0500	0.0487	97.5	80.0-120	
Cadmium,Dissolved	0.0500	0.0510	102	80.0-120	
Chromium,Dissolved	0.0500	0.0517	103	80.0-120	
Cobalt,Dissolved	0.0500	0.0514	103	80.0-120	
Lead,Dissolved	0.0500	0.0498	99.5	80.0-120	
Lithium,Dissolved	0.0500	0.0480	96.1	80.0-120	
Molybdenum,Dissolved	0.0500	0.0508	102	80.0-120	
Selenium,Dissolved	0.0500	0.0507	101	80.0-120	
Thallium,Dissolved	0.0500	0.0485	96.9	80.0-120	

L1732878-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732878-01 05/15/24 20:37 • (MS) R4070241-4 05/15/24 20:43 • (MSD) R4070241-5 05/15/24 20:47

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	0.0582	0.0565	116	113	1	75.0-125			3.03	20
Arsenic,Dissolved	0.0500		0.0496	0.0507	98.2	100	1	75.0-125			2.13	20
Barium,Dissolved	0.0500	0.0146	0.0633	0.0633	97.6	97.6	1	75.0-125			0.0135	20

L1732878-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732878-01 05/15/24 20:37 • (MS) R4070241-4 05/15/24 20:43 • (MSD) R4070241-5 05/15/24 20:47

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	0.0498	0.0492	99.6	98.4	1	75.0-125			1.20	20
Cadmium,Dissolved	0.0500		0.0546	0.0537	109	107	1	75.0-125			1.64	20
Chromium,Dissolved	0.0500		0.0491	0.0497	98.2	99.3	1	75.0-125			1.20	20
Cobalt,Dissolved	0.0500	0.00834	0.0574	0.0579	98.1	99.2	1	75.0-125			0.940	20
Lead,Dissolved	0.0500	ND	0.0511	0.0501	102	100	1	75.0-125			2.14	20
Lithium,Dissolved	0.0500		0.118	0.116	94.1	90.3	1	75.0-125			1.61	20
Molybdenum,Dissolved	0.0500	ND	0.0529	0.0511	106	102	1	75.0-125			3.49	20
Selenium,Dissolved	0.0500	ND	0.0538	0.0502	108	100	1	75.0-125			6.95	20
Thallium,Dissolved	0.0500	ND	0.0498	0.0493	99.5	98.7	1	75.0-125			0.871	20

Method Blank (MB)

(MB) R4067672-1 05/09/24 10:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.00103	0.00400
Arsenic	U		0.000180	0.00200
Barium	U		0.000381	0.00200
Beryllium	0.000210	J	0.000190	0.00200
Cadmium	U		0.000150	0.00100
Chromium	U		0.00124	0.00200
Cobalt	U		0.0000596	0.00200
Lead	U		0.000849	0.00200
Lithium	U		0.000695	0.00200
Molybdenum	U		0.000348	0.00500
Selenium	U		0.000300	0.00200
Thallium	0.000156	J	0.000121	0.00200

Laboratory Control Sample (LCS)

(LCS) R4067672-2 05/09/24 10:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0483	96.7	80.0-120	
Arsenic	0.0500	0.0523	105	80.0-120	
Barium	0.0500	0.0467	93.4	80.0-120	
Beryllium	0.0500	0.0502	100	80.0-120	
Cadmium	0.0500	0.0521	104	80.0-120	
Chromium	0.0500	0.0533	107	80.0-120	
Cobalt	0.0500	0.0536	107	80.0-120	
Lead	0.0500	0.0525	105	80.0-120	
Lithium	0.0500	0.0527	105	80.0-120	
Molybdenum	0.0500	0.0488	97.5	80.0-120	
Selenium	0.0500	0.0508	102	80.0-120	
Thallium	0.0500	0.0505	101	80.0-120	

L1732300-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732300-02 05/09/24 10:52 • (MS) R4067672-4 05/09/24 10:58 • (MSD) R4067672-5 05/09/24 11:02

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	0.0527	0.0558	105	112	1	75.0-125			5.87	20
Arsenic	0.0500	ND	0.0536	0.0557	106	111	1	75.0-125			3.95	20
Barium	0.0500	0.0430	0.0940	0.0970	102	108	1	75.0-125			3.17	20

L1732300-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732300-02 05/09/24 10:52 • (MS) R4067672-4 05/09/24 10:58 • (MSD) R4067672-5 05/09/24 11:02

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	0.0482	0.0492	96.1	98.0	1	75.0-125			1.96	20
Cadmium	0.0500	ND	0.0501	0.0505	100	101	1	75.0-125			0.870	20
Chromium	0.0500	ND	0.0526	0.0541	101	104	1	75.0-125			2.89	20
Cobalt	0.0500	ND	0.0515	0.0528	103	105	1	75.0-125			2.55	20
Lead	0.0500	ND	0.0530	0.0528	106	106	1	75.0-125			0.486	20
Lithium	0.0500	0.0830	0.135	0.138	104	110	1	75.0-125			1.97	20
Molybdenum	0.0500	ND	0.0544	0.0564	106	110	1	75.0-125			3.65	20
Selenium	0.0500	0.0322	0.0845	0.0855	105	107	1	75.0-125			1.26	20
Thallium	0.0500	ND	0.0515	0.0519	103	104	1	75.0-125			0.849	20

Method Blank (MB)

(MB) R4068620-1 05/12/24 11:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Antimony	U		0.00103	0.00400
Arsenic	U		0.000180	0.00200
Barium	U		0.000381	0.00200
Beryllium	U		0.000190	0.00200
Cadmium	U		0.000150	0.00100
Chromium	U		0.00124	0.00200
Cobalt	U		0.0000596	0.00200
Lead	U		0.000849	0.00200
Lithium	U		0.000695	0.00200
Molybdenum	U		0.000348	0.00500
Selenium	U		0.000300	0.00200
Thallium	0.000445	J	0.000121	0.00200

Laboratory Control Sample (LCS)

(LCS) R4068620-2 05/12/24 11:35

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	0.0500	0.0550	110	80.0-120	
Arsenic	0.0500	0.0474	94.8	80.0-120	
Barium	0.0500	0.0480	96.0	80.0-120	
Beryllium	0.0500	0.0546	109	80.0-120	
Cadmium	0.0500	0.0532	106	80.0-120	
Chromium	0.0500	0.0510	102	80.0-120	
Cobalt	0.0500	0.0503	101	80.0-120	
Lead	0.0500	0.0499	99.7	80.0-120	
Lithium	0.0500	0.0562	112	80.0-120	
Molybdenum	0.0500	0.0503	101	80.0-120	
Selenium	0.0500	0.0513	103	80.0-120	
Thallium	0.0500	0.0486	97.3	80.0-120	

L1732577-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1732577-01 05/12/24 11:39 • (MS) R4068620-4 05/12/24 11:45 • (MSD) R4068620-5 05/12/24 11:48

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 %
Arsenic	0.0500	ND	0.0500	0.0488	98.9	96.5	1	75.0-125			2.37	20
Selenium	0.0500	ND	0.0500	0.0500	99.9	99.9	1	75.0-125			0.0110	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
F1	Sample filtration was performed in the laboratory.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
T8	Sample(s) received past/too close to holding time expiration.

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

Report to: **Randy Homburg**

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

Project Description: **Grand Tower Energy Center Groundwater 1Q24**

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 Arendall**

Site/Facility ID #

P.O. #

Collected by (signature):

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

Quote #

Date Results Needed: STD TAT

Analysis / Container / Preservative

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 # L1736388

J012

Acctnum: **ERMSCMO**
Template: **T243415**
Prelogin: **P1066729**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEX Ground**

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	Pres Chk						Remarks	Sample # (lab only)
APW-03-WG-2024 0430	Grab	GW	54.50	4/30/24	1220	5	X	X	X	X	X								-01
APW-08-WG-2024 0430		GW	57.03		1340	5	X	X	X	X	X								-02
APW-07-WG-2024 0430		GW	58.28		1440	5	X	X	X	X	X								-03
APW-10S-WG-2024 0430		GW	57.72		1545	5	X	X	X	X	X								-04
APW-10D-WG-2024 0430		GW	93.14		1635	5	X	X	X	X	X								-05
APW-06S-WG-2024 0501		GW	58.90	5/1/24	0755	5	X	X	X	X	X								-06
APW-06D-WG-2024 0501		GW	151.56		0855	5	X	X	X	X	X								-07
APW-05R-WG-2024 0501		GW	57.92		1005	5	X	X	X	X	X								-08
APW-09-WG-2024 0430		GW	58.18	4/30/24	1745	5	X	X	X	X	X								-09
APW-02-WG-2024 0501		GW	53.27	5/1/24	1145	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 #

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:		N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date: 5/2/24	Time: 1200	Received by: (Signature) FSCM	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: 74 — If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-3-24 Time: 0900 — Hold: — Condition: NCF / OK

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

Report to: **Randy Homburg**

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

Project Description: **Grand Tower Energy Center Groundwater 1Q24**

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

Quote #

Date Results Needed: STD TAT

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)
										<2							
APW-01R-WG-2024 0501	Grab	GW		5/1/24	1745	5	X	X	X	X	X						-11
APW-04-WG-2024 0501		GW		5/1/24	1650	5	X	X	X	X	X						-12
EB-01-WG-2024 0430		~~GW~~ DW	NA	4/30/24	0915	4	X	X	X	X	X					No diss. bottle	-13
DUP-01-WG-2024 0501		GW		5/1/24	0001	5	X	X	X	X	X						-14
DUP-02-WG-2024 0430		GW		4/30/24	0002	5	X	X	X	X	X						-15

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

SDG # L1732380

Table #

Acctnum: **ERMSCMO**

Template: **T243415**

Prelogin: **P1066729**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEX Ground**

* 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

	Date:	Time:		
Relinquished by : (Signature) Marshall Arendell	5/2/24	1200	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-3-24 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

U1732386

Tracking Numbers		TLAG Temperature
7123 3306 5423		2.1+0.1=2.2
7123 3306 5445		0.2+0.1=0.3
7123 3306 5434		5.3+0.1=5.4

Name

Date