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DATE
31 January 2024

SUBJECT
Seventh Post-Closure
Groundwater Monitoring Report
Fourth Quarter 2023

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 (ERM) is submitting this report which provides the results and findings of the Grand Tower Energy Center (GTEC) quarterly post-closure groundwater sampling and coal combustion residuals (CCR) impoundment inspection event conducted during the fourth quarter 2023 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the “Site”). The fourth quarter groundwater sampling event took place between 27 November and 29 November 2023, and the impoundment inspection event was conducted on 29 November 2023. A Site location map is provided in Figure 1.

The fourth quarter 2023 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.

Fourth quarter 2023 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 CCR impoundment;
- Inspection of the groundwater monitoring well array; and
- Groundwater monitoring activity.

QUARTERLY CCR IMPOUNDMENT INSPECTION

During the fourth quarter of 2023, an inspection of the 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 the first three quarters of 2023 has increased from 9” deep to 10” deep in the deepest locations. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

QUARTERLY MONITORING WELL INPSECTION AND GAUGING

During the fourth quarter of 2023, monitoring well inspections were conducted. The monitoring well protectors and casings were inspected for damage and/or signs of settling that might impact the integrity of the surface seals. The inspection tasks also included gauging total depths as well as static groundwater elevations. Both measurements were referenced from the top of casing (TOC) at each of the Site monitoring wells. Total depth and groundwater level measurements were obtained from the monitoring wells using a water level meter with an accuracy of 0.01 foot. The quarterly monitoring well inspection forms can be found in Appendix B. Based upon these measurements, a shallow groundwater contour map for the Site was developed for the fourth quarter of 2023. 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 flow direction arrow, groundwater elevations at each monitoring well, and the Mississippi River elevation at the time of groundwater level gauging.

QUARTERLY GROUNDWATER MONITORING

The Groundwater Protection Standards (GWPS) for the Site are those provided in 35 IAC §845.600(a). Assessment of corrective measures began on 16 June 2022 with the commencement of the initial post-closure groundwater sampling event. During the fourth quarter 2023 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 Teklab, Inc. located in Collinsville, IL which is an IEPA-approved laboratory. Samples were transported under chain-of-custody procedures to the laboratory for analytical testing within laboratory provided coolers containing ice. The laboratory analytical report for the fourth quarter 2023 sampling event is included in Appendix D.

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

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

GROUNDWATER ANALYTICAL RESULTS

The analytical results for the post-closure groundwater sampling event conducted during the fourth quarter 2023 are presented in Table 1. During the fourth quarter 2023 sampling event, the following analytes were detected in the listed wells above the GWPS:

- Sulfate: APW-02,
- 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-07, APW-09[1], APW-10D, APW-10S
- Turbidity: APW-01R, APW02, APW-04, APW-05R, APW-07, APW-08, APW-10D
- Lithium: APW-02, APW-04, APW-05R, APW-06S, APW-10S
- Molybdenum: APW-02, APW-05R, APW-06S

[1]*The duplicate sample collected at APW-09 (DUP-02) exceeded the GWPS for calcium; however the normal sample at APW-09 was below the GWPS during the fourth quarter 2024 sampling event.*

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 CCR impoundment is currently in Corrective Action Monitoring (CAM). After at least eight quarterly CAM events have been completed, the groundwater sampling results will be evaluated to determine if statistically significant increases or decreases have occurred after cap and closure occurred in 2020 in accordance with 35 IAC Section §845.640(f). The statistical evaluation of the first eight CAM groundwater sampling events is anticipated to be completed during the first quarter of 2024. In accordance with 35 IAC Section §845.550(a) an Annual Groundwater Monitoring and Corrective Action Report will also be submitted for the preceding calendar year no later than January 31st of 2024.

At the end of the current five-year monitoring and reporting post-closure time frame, a groundwater performance monitoring report will be submitted to IEPA to either demonstrate restoration of groundwater quality to Class I standards or present a continued groundwater monitoring plan for an additional five years. In addition, the results will be compared to the modeled concentrations to evaluate if a decreasing trend, as defined through modeling, is occurring at the predicted rate. Significant changes from the model results will lead to additional calibration and assessment of future expected rates of decrease for the constituents of concern (COCs).

SUMMARY AND CONCLUSIONS

Based upon the results of the fourth quarter 2023 groundwater sampling event, well inspection, and 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 seven 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 seven post groundwater monitoring events, boron continues to demonstrate a decreasing trend at APW-05R and now below detect at APW-04.
- Historically, woody vegetation has been noted on the impoundment cap and treated with herbicide. Live woody vegetation growth is limited in the impoundment riprap. During this event, erosion noted above the riprap has increased from 9" to 10" in the deepest locations as compared to prior inspections dating back to 2022. ERM will continue to monitor and address woody vegetation and erosion on the impoundment cap, and notify facility personnel so they can manage these issues appropriately. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

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

Grand Tower Energy Center (GTEC)

Closed Coal Combustion Residuals (CCR) Impoundment

Mississippi River

Grand Tower

N

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

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

DRAWN BY: ECLW

Power Plant Rd

N

APW-01R
330.47

330.25

APW-05R
329.04

APW-02
328.90

329

329.25

329.5

APW-06S
329.50

329.75

APW-06D
329.86

APW-03
329.99

APW-04
330.19

APW-09
330.03

APW-07
329.61

329.75

APW-08
330.28

330

Mississippi River

329.75

*Mississippi River
Elevation = 328.84

APW-10D
330.36

APW-10S
329.47

0 250 500 Feet

25th Ave

0 0.425 0.85 Miles

Legend

- Monitoring Well Location
- Groundwater Contour (0.25 Ft. Interval)
- Groundwater Flow Direction
- 328.84 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging November 27, 2023
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. Contours are dashed where inferred
7. BING Imagery, 2022

Figure 2
Sampling Event Results
November 2023
Grand Tower Energy Center, LLC
Grand Tower, Illinois
Jackson County

Environmental Resources Management
www.erm.com
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Source: Esri - World Topoographic Map; NAD 1983 StatePlane Illinois West FIPS 1202 Feet

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TABLES

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-1R-20170907	APW-1R-20170927	APW-1R-20171018	APW-1R-20171108	APW-1R-20171127	APW-1R-20171228	APW-1R-20180117	APW-1R-20180207	APW-1R-20220615	APW-01R-WG-20220915	APW-01R-WG-20221130	APW-01R-WG-20230202	APW-01R-WG-20230627	APW-01R-WG-20230920	APW-01R-WG-20231129
			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
			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
			Sample Type	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
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
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
Sulfate	N	mg/L	400	41	65	65	54	58	88	78	79	33	73 S	69	74	37	79	73
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									33.9	31.7	31.7	89.5	83.2	133	95.6
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
Dissolved Solids, Total	N	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328	355	300
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
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001	0.0011	0.0016	0.0015
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
Barium	D	mg/L	2									0.16	0.153	0.162 B	0.155	0.164	0.21	0.245
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									0.163	0.244	0.219	0.205	0.249	0.204	0.279
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
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
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
Calcium	D	mg/L	103.2[3]									85.6	83.8 S	73.9	71.4	66.4	72.1	57.6
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
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
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
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
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
Iron	T	mg/L	NS									1.42						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 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
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135	0.015	0.0211	0.0193
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
Manganese	T	mg/L	NS									0.139						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
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
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
Nickel	D	mg/L	NS									0.0043		0.0061				
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				
Selenium	D	mg/L	0.05									0.0028	0.0032	0.0033	0.0032	0.0032	0.0037	0.0058
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
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-20220816	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
			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
			Sample Date	09/06/2017	09/26/2017	10/20/2017	11/09/2017	11/29/2017	12/27/2017	01/19/2018	02/07/2018	08/16/2022	09/14/2022	09/14/2022	09/14/2022	11/29/2022	02/01/2023	02/01/2023	06/27/2023	06/27/2023	09/20/2023	11/29/2023
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	FD	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
Radium-226	N	pCi/L	NS	1.96 ± 0.21	0.03 ± 0.1 U	-0.01 ± 0.6 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 ± 0.381 J	0.27 ± 0.11 UJQR	0.14 ± 0.07 U	0.5 ± 0.14 U	0.35 ± 0.12 U	0.0737 ± 0.236 U	0.175 ± 0.279 J	0.21 ± 0.1 U	-0.05 ± 0.07 U	0.38 ± 0.12 U	0.12 ± 0.06 U
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 ± 0.236 J3J	0.4 ± 0.48 UJQR	2.81 ± 1.03	0.24 ± 0.44 U	0.27 ± 0.55 U	1.07 ± 0.466	0.981 ± 0.290	0.21 ± 0.7 U	0.13 ± 0.52 U	3.71 ± 0.93	0.56 ± 0.64 U
Sulfate	N	mg/L	400	462	460	472 S	479	472	426	443	418	496	491	490	418	438	459	458	500	465	460	440
CALC																						
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																						
Turbidity, Field	N	NTU	17.96[1]									36	19.2		132		93.6		104.3		97	169
GEN CHEM																						
Chloride	N	mg/L	200	13	12	11	11	12	12	12	12	9	11	16	9	9	10	10	7	8	7	8
Dissolved Solids, Total	N	mg/L	1200	858	880	904	916	870	848	836	888	930	890 H	905 H	885	855	852	886	920	870	845	926
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
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
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0021	0.0009 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
Arsenic	D	mg/L	0.01									0.0117	0.0048	0.0049	0.0012	0.0187	0.018	0.0138	0.011	0.0107	0.0072	0.0108
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	0.0146	0.0146	0.00993	0.0237
Barium	D	mg/L	2									0.154	0.123	0.135	0.126 B	0.148 B	0.187	0.154	0.142	0.145	0.133	0.205
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739	0.237	0.408	0.238	0.254	0.218	0.214	0.159	0.149	0.206	0.152	0.303
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
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
Boron	D	mg/L	2									8.17	7.49 S	7.9	6.69	6.83	9.21	7.89	8.97	9.34	8.91	9.57 S
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	8.67 S	7.49	7.75	8.32 S	9.14	9.31 S	8.24	9.62
Cadmium	D	mg/L	0.005									0.0033 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
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	0.0008 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.3[1]									175	136 S	165	96.1	129	108	144	147	148	151	121 S
Calcium	T	mg/L	103.3[1]	148	145	171 S	157	158	135	134	175	189	198	178	148 S	149	144	149 S	161 S	167 S	132	132
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
Chromium	T	mg/L	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112	0.0254	0.0148	0.0266	0.0054	0.0254	0.0052	0.0022	0.0024	0.0079	0.008	0.0052
Cobalt	D	mg/L	0.006									0.0033 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
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
Iron	T	mg/L	NS									11.7										
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0251	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
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387	0.0442	0.0455	0.0583	0.0506
Lithium	T	mg/L	0.04	0.05	0.0455	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	0.0459	0.048	0.0422	0.036
Manganese	T	mg/L	NS									0.752										
Mercury	D	mg/L	0.002										0.0002 U	0.0002 U								
Mercury	T	mg/L	0.002	0.0002 U	0.0002 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
Molybdenum	D	mg/L	0.1									0.201	0.139	0.156	0.037	0.145	0.151	0.155	0.227	0.227	0.214	0.229
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	0.175	0.165	0.16	0.229	0.252	0.158	0.147
Nickel	D	mg/L	NS									0.0039			0.0022	0.001 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						
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
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
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
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = piccocuries per liter
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
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-3-20170907	APW-3-20170929	APW-3-20171020	APW-3-20171110	APW-3-20171129	APW-3-20171228	APW-3-20180119	APW-3-20180208	APW-03-WG-20220616	APW-03-WG-20220915	APW-03-WG-20221130	APW-03-WG-20230130	APW-03-WG-20230626	APW-03-WG-20230919	APW-03-WG-20231127
			Location ID	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03	APW-03
			Sample Date	09/06/2017	09/29/2017	10/20/2017	11/10/2017	11/29/2017	12/28/2017	01/19/2018	02/08/2018	06/16/2022	09/15/2022	11/30/2022	01/30/2023	06/26/2023	09/19/2023	11/27/2023
			Sample Type	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	0.28	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
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
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 UJDR	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
Sulfate	N	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322	292	280	133
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									40.3	56.1	103	50.7	6.04	2.72	4
GEN CHEM																		
Chloride	N	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21	17	16	11
Dissolved Solids, Total	N	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524	614	636	556
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
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
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
Arsenic	D	mg/L	0.01									0.0015	0.0014	0.0024	0.002	0.0016	0.0019	0.0013
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
Barium	D	mg/L	2									0.139	0.124	0.108 B	0.139	0.13	0.136	0.122
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									4.23	1.49	2.99	4.98	4.64	4.11	1.69
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
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
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
Calcium	D	mg/L	103.2[1]									174	125	101	121	125	137	111
Calcium	T	mg/L	103.2[1]	86.3	104 S	88.1	74.9	116 S	95	101	77.1	153	143	115	111	139 B	124 S	115
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
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
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
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
Iron	T	mg/L	NS									1.56						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0021	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
Lithium	D	mg/L	0.04									0.0338	0.0288	0.0266	0.0275	0.0262	0.0456	0.0256
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
Manganese	T	mg/L	NS									0.321						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.057	0.0342	0.0648	0.0521	0.0656	0.0487	0.0303
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
Nickel	D	mg/L	NS									0.0016		0.0011				
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				
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
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-4-20170907	APW-4-20170929	APW-4-20171019	APW-4-20171108	APW-4-20171128	APW-4-20171228	APW-4-20180119	APW-4-20180208	APW-04-WG-20220615	APW-04-WG-20220915	APW-04-WG-20221128	APW-04-WG-20230202	APW-04-WG-20230627	APW-04-WG-20230920	APW-04-WG-20231129
			Location ID	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04
			Sample Date	09/08/2017	09/29/2017	10/19/2017	11/08/2017	11/28/2017	12/28/2017	01/19/2018	02/08/2018	06/15/2022	09/15/2022	11/28/2022	02/02/2023	06/27/2023	09/20/2023	11/29/2023
			Sample Type	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	0.18	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
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
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
Sulfate	N	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62	65	66	54
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									19.1	18.3	26.5	37.3	38.7	21.6	22.8
GEN CHEM																		
Chloride	N	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12	9	11
Dissolved Solids, Total	N	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432	476	430
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
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011	0.0014	0.0016	0.002
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
Barium	D	mg/L	2									0.116	0.132	0.13 B	0.116	0.122	0.138	0.165
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									1.41	0.875	7.33	0.619	0.908	0.591	0.645
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
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
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
Calcium	D	mg/L	103.2[3]									111	93.7	108	93.3 S	88.3	101 S	77.9
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
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0041	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
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
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	0.0006 J	0.0025	0.001 U	0.001 U	0.001 U	0.001 U	0.0012
Iron	T	mg/L	NS									0.563						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 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
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311	0.0411	0.0333
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
Manganese	T	mg/L	NS									0.192						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383	0.0503	0.0367	0.0461
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
Nickel	D	mg/L	NS									0.0019		0.0017				
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				
Selenium	D	mg/L	0.05									0.0134	0.0101	0.001 U	0.009	0.0165	0.0096	0.0139
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
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							
			Sample ID Location ID Sample Date Sample Type	APW-5-20170907 APW-05 09/06/2017 N	APW-5-20170928 APW-05 09/28/2017 N	APW-5-20171019 APW-05 10/19/2017 N	APW-5-20171109 APW-05 11/09/2017 N	APW-5-20171129 APW-05 11/29/2017 N	APW-5-20171227 APW-05 12/27/2017 N	APW-5-20180118 APW-05 01/18/2018 N	APW-5-20180207 APW-05 02/07/2018 N
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**								
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								
FIELD PARAM											
Turbidity, Field	N	NTU	17.96[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

				Post-Closure Sampling													
			Sample ID Location ID Sample Date Sample Type	APW-05-WG-20220616 APW-05 06/16/2022 N	DUP-001-WG-20220616 APW-05 06/16/2022 FD	APW-05-WG-20220914 APW-05 09/14/2022 N	DUP-001-WG-20220914 APW-05 09/14/2022 FD	APW-05-WG-20221128 APW-05 11/28/2022 N	DUP-01-WG-20221128 APW-05 11/28/2022 FD	APW-05-WG-20230201 APW-05 02/01/2023 N	DUP-01-WG-20230201 APW-05 02/01/2023 FD	APW-05R-WG-20230627 APW-05 06/27/2023 N	DUP-01-WG-20230627 APW-05 06/27/2023 FD	APW-05R-WG-20230920 APW-05 09/20/2023 N	DUP-01-WG-20230920 APW-05 09/20/2023 FD	APW-05R-WG-20231128 APW-05R 11/28/2023 N	DUP-01-WG-20231128 APW-05R 11/28/2023 FD
Parameter/Analyte	**Total or Dissolved**	**Units**	**35 IAC 845.600**														
UNSPECIFIED																	
Fluoride	N	mg/L	4	0.35	0.33	0.33	0.31	0.37	0.38	0.33	0.33	0.3	0.32	0.35	0.34	0.38	0.35
Radium-226	N	pCi/L	NS	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	0.49 ± 0.13 U	0.36 ± 0.13 U	0.15 ± 0.06 U	0.05 ± 0.04 U
Radium-228	N	pCi/L	NS	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	5.85 ± 1.14 *	0.42 ± 0.71 U	0.73 ± 0.57 J	0.75 ± 0.67 J
Sulfate	N	mg/L	400	224	239	379	403	324	338	325	305	335	326	343	333	330	321
CALC																	
Radium-226/228	N	pCi/L	5	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	6.34 ± 1.53	0.78 ± 0.84 U	0.88 ± 0.63 U	0.8 ± 0.71 U
FIELD PARAM																	
Turbidity, Field	N	NTU	17.96[1]	51.8		9.19		4.65		8.21		42.6		33.7		76.1	
GEN CHEM																	
Chloride	N	mg/L	200	19	19	15	15	19	19	18	18	17	18	14	14	16	16
Dissolved Solids, Total	N	mg/L	1200	650	690	750 H	774 H	714	728 H	696	670	740	695	680	710	705	690
pH, Lab	N	pH units	6.22-9.0[2]	7.35	7.49	7.55	7.57	7.24	7.27	7.31	7.33	7.27 H	7.3 H	7.36 H	7.36 H	7.33 H	7.34 H
METALS																	
Antimony	D	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 SU
Antimony	T	mg/L	0.006	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	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01	0.002	0.0021	0.001	0.001	0.001 U	0.0019	0.0026	0.0018	0.0024	0.0025	0.0023	0.0024	0.0029	0.0018
Arsenic	T	mg/L	0.01	0.0048	0.0041	0.0025	0.0023	0.0022	0.0023	0.0024	0.0025	0.003	0.003	0.0028	0.0026	0.0042	0.0031
Barium	D	mg/L	2	0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135	0.168	0.167	0.167	0.172	0.186	0.127
Barium	T	mg/L	2	0.187	0.174	0.154	0.152	0.14	0.136	0.145	0.148	0.183	0.181	0.162	0.158	0.225	0.158
Beryllium	D	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	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	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2	7.63	7.7	7.42	7.09	6.12	7.03 S	8.68 S	6.76	8.64	8.37	7.91	8.05	8.71	6.44 S
Boron	T	mg/L	2	7.67	8.24 S	7.76	7.62	7.48	7.97	7.35	7.59	8.76	8.68	7.12	8.33 S	9.62	6.77
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	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]	139	141	119	131	87.4	110 S	106 S	111	120	120	118	119	98.4	91.9 S
Calcium	T	mg/L	103.2[1]	127	129 S	127	137	117	118	112	114	136 B	133 B	105	126 S	97.1	134
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	0.0015 U	0.0015 U	0.0015 SU
Chromium	T	mg/L	0.1	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	0.0031	0.0016	0.002	0.0023
Cobalt	D	mg/L	0.006	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	0.001 U	0.001 U	0.001 U	0.001 SU
Cobalt	T	mg/L	0.006	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	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS	2.77	1.89												
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	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001	0.0026	0.0021	0.002	0.0014
Lithium	D	mg/L	0.04	0.0282	0.029	0.0381	0.0373	0.0338	0.0365	0.045	0.0375	0.0384	0.0398	0.0624	0.0509	0.0455	0.0343
Lithium	T	mg/L	0.04	0.0331	0.0363	0.0408	0.0397	0.0373	0.0371	0.0399	0.0402	0.0423	0.0415	0.0367	0.0425	0.0523	0.0371
Manganese	T	mg/L	NS	0.9	0.904												
Mercury	D	mg/L	0.002			0.0002 U	0.0002 U										
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1	0.172	0.17	0.213	0.206	0.293	0.211 S	0.187	0.199	0.213	0.204	0.235	0.233	0.282	0.192
Molybdenum	T	mg/L	0.1	0.203	0.195	0.235	0.224	0.223	0.226	0.217	0.212	0.212	0.21	0.223	0.235	0.203	0.215
Nickel	D	mg/L	NS	0.0036	0.0035			0.0011	0.0024								
Nickel	T	mg/L	NS	0.0037	0.0039			0.002	0.0029								
Selenium	D	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	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
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J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
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	N/A	APW-06D-WG-20220913	APW-06D-WG-20221128	APW-06D-WG-20230201	APW-06D-WG-20230627	APW-06D-WG-20230920	APW-06D-WG-20231128
			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
			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	6/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023
			Sample Type	N	N	N	N	N	N	N	N	Casing deflected, no sample collected during Q2 202	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	N/A	0.2	0.24	0.21	0.2	0.22	0.24
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	N/A	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
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	N/A	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
Sulfate	N	mg/L	400	215	228	206	222	230	236	211	189	N/A	272	254	269	270	218	184
CALC																		
Radium-226/228	N	pCi/L	5									N/A	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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									N/A	18.5	74.4	26.9	181	65.5	3.02
GEN CHEM																		
Chloride	N	mg/L	200	17	17	16	16	16	16	17	17	N/A	14	17	16	15	16	22
Dissolved Solids, Total	N	mg/L	1200	558	560	562	564	590	516 R	482	584	N/A	670 H	580	582	735	565	560
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	N/A	7.42	7.21	7.29	7.39 H	7.3 H	7.36 H
METALS																		
Antimony	D	mg/L	0.006									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									N/A	0.004	0.0116	0.012	0.0102	0.01	0.0161
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	N/A	0.0104	0.0111	0.0107	0.0115	0.0109	0.0135
Barium	D	mg/L	2									N/A	0.129	0.118 B	0.152	0.13	0.121	0.185
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	N/A	0.143	0.142	0.134	0.145	0.128	0.151
Beryllium	D	mg/L	0.004									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									N/A	5.32	4.14	4.39	5.01	3.77	4.67
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	N/A	5.51	4.29	3.95	4.99	3.81	3.8
Cadmium	D	mg/L	0.005									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	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]									N/A	118	105	109	118	114	80.3
Calcium	T	mg/L	103.2[1]	99.9	110	96.7	100	110	107	105 S	105	N/A	123	110	116	128 B	106	98.4
Chromium	D	mg/L	0.1									N/A	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.001 U	0.0013	0.001 U	0.001 U	0.001 U	0.0017	0.003	0.0014	N/A	0.0015 U	0.0063	0.0015 U	0.0057	0.0727	0.0015 U
Cobalt	D	mg/L	0.006									N/A	0.0013	0.0012	0.001	0.001 U	0.001 U	0.0012
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	N/A	0.001 U	0.0035	0.0013	0.0054	0.0035	0.0013
Lead	D	mg/L	0.0075									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.0012	0.001 U	0.0016	0.001 U	0.001 U
Lithium	D	mg/L	0.04									N/A	0.0179	0.0155	0.0194	0.016	0.0197	0.0241
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0162	N/A	0.0185	0.0175	0.0172	0.0184	0.0169	0.0199
Mercury	D	mg/L	0.002									N/A	0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	N/A	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									N/A	0.0669	0.0796	0.0583	0.0643	0.0559	0.0949
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0582	0.0589	0.06	0.0584	0.0465	0.0463	N/A	0.0719	0.0696	0.0683	0.0602	0.0672	0.0557
Nickel	D	mg/L	NS									N/A		0.002				
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025	N/A		0.0093				
Selenium	D	mg/L	0.05									N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									N/A	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	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 = nepheloimetric 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
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-6S-20170907	APW-6S-20170928	APW-6S-20171019	APW-6S-20171109	APW-6S-20171128	APW-6S-20171227	APW-6S-20180118	APW-6S-20180208	APW-6S-WG-20220616	APW-06S-WG-20220913	APW-06S-WG-20221128	APW-06S-WG-20230201	APW-06S-WG-20230627	APW-06S-WG-20230920	APW-06S-WG-20231128
			Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-6S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	09/20/2023	11/28/2023
			Sample Type	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	0.41	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
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
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 ± 0.38 U	0.29 ± 0.51 U
Sulfate	N	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247	208	221	237
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									30.5	15.1	5.56	6.67	9.06	8.99	1.26
GEN CHEM																		
Chloride	N	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24	23	20	22
Dissolved Solids, Total	N	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638	615	565	635
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
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U	0.001 U	0.0013	0.001	0.001 U	0.0019
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
Barium	D	mg/L	2									0.233	0.146	0.19 B	0.219	0.21	0.216	0.269
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									4.92	5.99	6.88	7.12	5.83	6.65	8.41
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
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
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
Calcium	D	mg/L	103.2[1]									124	93.7	98	94.1	100	107	88.8
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
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0027	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
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
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
Iron	T	mg/L	NS									9.35						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 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
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0406	0.0411	0.0487	0.0498
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
Manganese	T	mg/L	NS									0.53						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.229	0.235	0.24	0.244	0.232	0.234	0.309
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
Nickel	D	mg/L	NS									0.0015		0.001 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				
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
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

Notes:
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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
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Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-7-20170907	APW-7-20170928	APW-7-20171019	APW-7-20171109	APW-7-20171128	APW-7-20171227	APW-7-20180118	APW-7-20180208	APW-07-WG-20220616	APW-07-WG-20220914	APW-07-WG-20221130	APW-07-WG-20230130	APW-07-WG-20230626	APW-07-WG-20230919	APW-07-WG-20231128
			Location ID	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07
			Sample Date	09/07/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/14/2022	11/30/2022	01/30/2023	06/26/2023	09/19/2023	11/28/2023
			Sample Type	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	0.35	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
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
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
Sulfate	N	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48	54	44	40
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									66.2	34.8	10.5	79.2	14.8	42.9	21
GEN CHEM																		
Chloride	N	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14	10	9	11
Dissolved Solids, Total	N	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824	665	740	790
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
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
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
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.001 U	0.001 U	0.0012	0.0013	0.0016
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
Barium	D	mg/L	2									0.334	0.255	0.354 B	0.411	0.303	0.336	0.465
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									0.148	0.193	0.199	0.267	0.208	0.192	0.243
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
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
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
Calcium	D	mg/L	103.2[3]									222	199	204	199	180 S	196	162
Calcium	T	mg/L	103.2[3]	192	204	171	187	196	193	191	185	238	210	209	200	183 BS	161	177
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0017	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
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
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
Iron	T	mg/L	NS									17.3						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 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
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191	0.0136	0.0184	0.0212
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
Manganese	T	mg/L	NS									1.11						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0026	0.0026	0.0021	0.0027	0.0027	0.0029	0.004
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
Nickel	D	mg/L	NS									0.0008 J		0.001 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				
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
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-8-20170907	APW-8-20170928	APW-8-20171018	APW-8-20171108	APW-8-20171127	APW-8-20171227	APW-8-20180117	APW-8-20180208	APW-08-WG-20220616	APW-08-WG-20220915	APW-08-WG-20221130	APW-08-WG-20230202	APW-08-WG-20230626	APW-08-WG-20230919	APW-08-WG-20231128
			Location ID	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08
			Sample Date	09/07/2017	09/28/2017	10/18/2017	11/08/2017	11/27/2017	12/27/2017	01/17/2018	02/08/2018	06/16/2022	09/15/2022	11/30/2022	02/02/2023	06/26/2023	09/19/2023	11/28/2023
			Sample Type	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	0.3	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
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
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
Sulfate	N	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31	23	24
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									119	139	305	26.9	152	141	169
GEN CHEM																		
Chloride	N	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10	10	11
Dissolved Solids, Total	N	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378	420	440	395
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
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001	0.001	0.0014	0.0019
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
Barium	D	mg/L	2									0.194	0.163	0.146 B	0.15	0.191	0.236	0.255
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									0.0777	0.0993	0.0844	0.0895	0.124	0.117	0.154
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
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
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
Calcium	D	mg/L	103.2[1]									108	79.7	75.4	72.1	92.6	94.1 S	71.3
Calcium	T	mg/L	103.2[1]	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
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0018	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
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
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
Iron	T	mg/L	NS									3.14						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 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
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131	0.0125	0.022	0.0204
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
Manganese	T	mg/L	NS									0.202						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
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
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
Nickel	D	mg/L	NS									0.0023		0.0012				
Nickel	T	mg/L	NS	0.0039	0.0043	0.0029	0.0062	0.0026	0.0027	0.0026	0.0026	0.0054		0.0027				
Selenium	D	mg/L	0.05									0.0027	0.0068	0.0126	0.0128	0.0113	0.0121	0.0231
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
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-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
			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
			Sample Date	09/06/2017	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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	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
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
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
Sulfate	N	mg/L	400	65	47	53	65	50	42	28	25	104	39	36	38	47	32	31	34	35
CALC																				
Radium-226/228	N	pCi/L	5									0.267 ± 0.315 J	0.46 ± 0.58 U	0.83 ± 0.61 U	0.12 ± 0.289 U	0.53 ± 0.74 U	1.17 ± 0.65 U	0.22 ± 0.46 U	0.8 ± 0.67 U	0.23 ± 0.69 U
FIELD PARAM																				
Turbidity, Field	N	NTU	17.96[1]									34.2	7.3	7.28	23.6	24.7	5.64		3.82	
GEN CHEM																				
Chloride	N	mg/L	200	13	13	13	13	13	13	13	768	13	12	12	13	12	11	11	12	12
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
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	7.66 H	7.5 H	7.45 H
METALS																				
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 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
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
Barium	D	mg/L	2									0.129	0.111	0.109 B	0.107	0.116	0.114	0.117	0.109	0.108
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
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
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
Boron	D	mg/L	2									1.32	0.327	0.24	0.239	0.572	0.234	0.236	0.169	0.166
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
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
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[1]									107 B	76.5	78.3	76.3	82.8 S	81	81.1	73.5	73.6
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
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
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
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
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
Iron	T	mg/L	NS									0.496								
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
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
Lithium	D	mg/L	0.04									0.0184	0.0137	0.0131	0.0125	0.0163	0.0196	0.0184	0.0121	0.012
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
Manganese	T	mg/L	NS									0.599								
Mercury	D	mg/L	0.002										0.0002 U							
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0351	0.0182	0.0139	0.0165	0.0211	0.0167	0.0173	0.0154	0.0146
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
Nickel	D	mg/L	NS									0.0017		0.001 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						
Selenium	D	mg/L	0.05									0.021	0.0142	0.0147	0.0179	0.0188	0.0155	0.0162	0.0163	0.0159
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
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
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

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 = nephalometric 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
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-10D-20170907	APW-10D-20170927	APW-10D-20171019	APW-10D-20171109	APW-10D-20171128	APW-10D-20171228	APW-10D-20180118	APW-10D-20180209	APW-10D-WG-20220615	APW-10D-WG-20220916	APW-10D-WG-20221129	APW-10D-WG-20230202	APW-10D-WG-20230626	APW-10D-WG-20230919	APW-10D-WG-20231127
			Location ID	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D	APW-10D
			Sample Date	09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/16/2022	11/29/2022	02/02/2023	06/26/2023	09/19/2023	11/27/2023
			Sample Type	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	0.1	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
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
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 ± 0.55 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
Sulfate	N	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39	44	31	26
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									46.9	21.9	36.4	45.3	176	169	196
GEN CHEM																		
Chloride	N	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13	14	10	10
Dissolved Solids, Total	N	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454	485	468	445
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
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
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
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U	0.0012	0.0011	0.0011	0.0011	0.0018
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
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.304	0.348	0.355	0.448
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									0.0786	0.0711	0.0841	0.0579	0.0704	0.0639	0.0823
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
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
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
Calcium	D	mg/L	103.2[3]									143	124	113	114	114	116	83.4
Calcium	T	mg/L	103.2[3]	118	136	120	121	125	123	148 S	124 S	138	374	118	122	611 B	118	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
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
Cobalt	D	mg/L	0.006									0.0025	0.0021	0.0032	0.003	0.0026	0.0026	0.0038
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
Iron	T	mg/L	NS									0.758						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 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
Lithium	D	mg/L	0.04									0.0135	0.0135	0.0133	0.012	0.0148	0.02	0.0176
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
Manganese	T	mg/L	NS									1.16						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
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
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
Nickel	D	mg/L	NS									0.0054		0.0054				
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				
Selenium	D	mg/L	0.05									0.001 U	0.0016	0.0015	0.0024	0.0013	0.0016	0.0043
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
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U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
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-WG-20220615	APW-10S-WG-20220915	APW-10S-WG-20221129	APW-10S-WG-20230202	APW-10S-WG-20230626	APW-10S-WG-20230919	APW-10S-WG-20231127
			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
			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
			Sample Type	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
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
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
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
CALC																		
Radium-226/228	N	pCi/L	5									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
FIELD PARAM																		
Turbidity, Field	N	NTU	17.96[1]									61.5	34.3	52.6	37.3	57.2	63.6	13.1
GEN CHEM																		
Chloride	N	mg/L	200	10	7	6	6	6	6	6	6	12	15	18	21	14	15	20
Dissolved Solids, Total	N	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H	750	780	725	775	900
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
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
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
Arsenic	D	mg/L	0.01									0.152	0.0612	0.0138	0.171	0.166	0.176	0.251
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
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506	0.506	0.567	0.711
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
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	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									0.57	0.541	7.48	0.497	0.578	0.571	0.682
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
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
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
Calcium	D	mg/L	103.2[3]									169	156	142	145	142	151	137
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
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0091	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
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
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
Iron	T	mg/L	NS									19.6						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 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
Lithium	D	mg/L	0.04									0.0266	0.0286	0.0387 R	0.0268	0.0278	0.0349	0.0359
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
Manganese	T	mg/L	NS									0.243						
Mercury	D	mg/L	0.002										0.0002 U					
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
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
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
Nickel	D	mg/L	NS									0.001 U		0.001 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				
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
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
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 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

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
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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 standard
Highlighted values exceed action level
NS = No standard

APPENDIX A FOURTH QUARTER 2023 CCR IMPOUNDMENT INSPECTION REPORT

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date: 11/29/2023

Time: 11:45-12:05

Name: Marshall Arendell
(Inspector)

Weather:

Temperature:
45 deg. F

☒ Sunny
☐ Cloudy
☐ Raining
☐ Other

Conditions Limiting Visibility:

☐ Snow Cover
☐ Vegetation
☒ None
☐ Other

Observations:

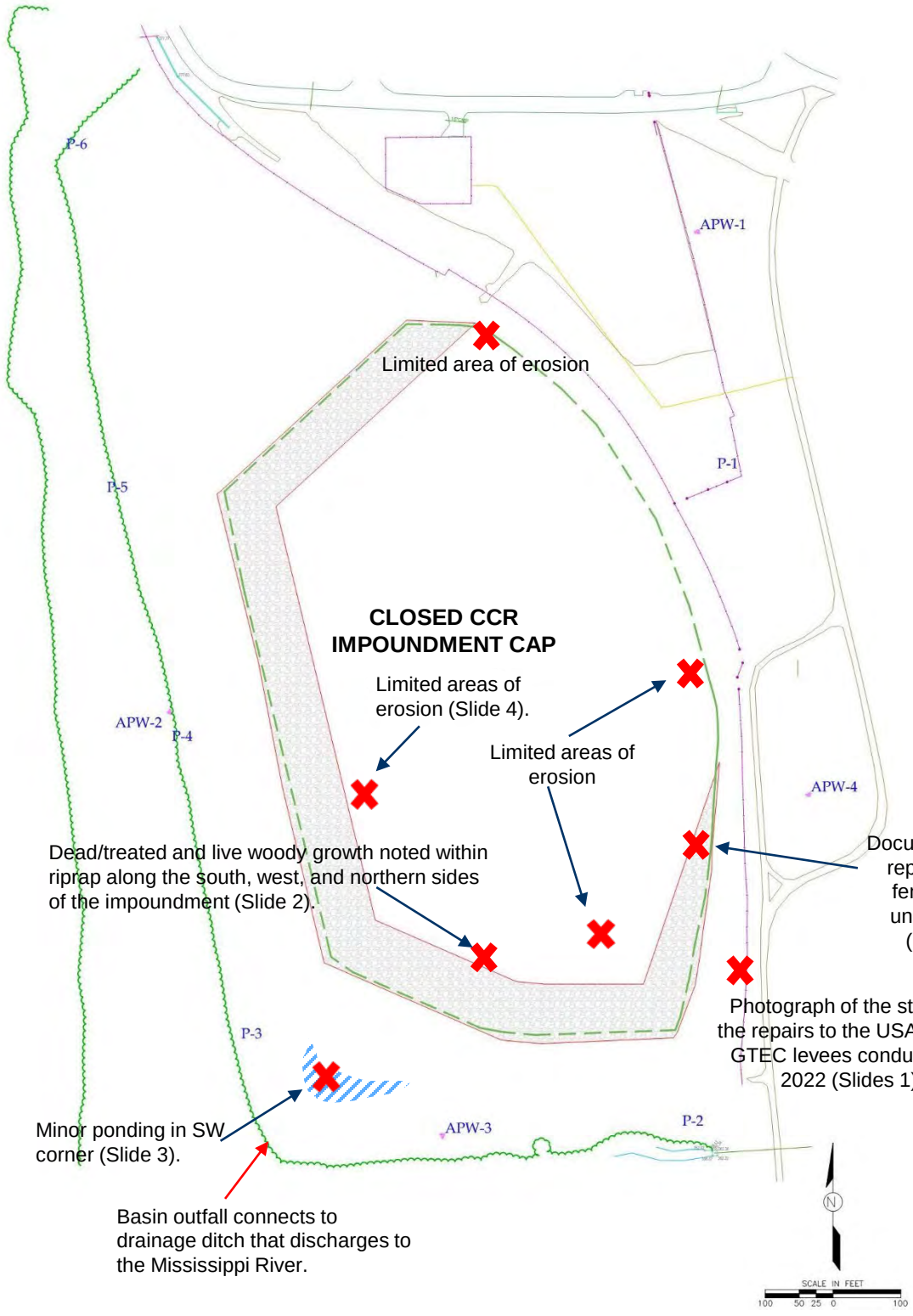
☒ Erosion / Gullies
☐ Cracking / Sloughing
☒ Ponding / Damp Areas
☐ No Problems Identified
☒ Woody Vegetation Growth
☐ Other

Observations in Detail Below:

- ERM onsite for the Q4 2023 inspection of the 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 noted across north, west, and southern CCR impoundment cap faces up to 10” deep. This is an increase from 9" deep noted in previous inspection events.
- Ponding continues to be noted in the SW corner of the basin near the outfall albeit considerably reduced compared to Q3 2023 observations.
- The impoundment cap was mowed during Q3 2023 and found to be in generally good condition.
- The inspector recommends continued treatment of woody growth within the riprap on the impoundment cap with appropriate management methods such as brushhogging, mowing, cutting, herbicide applications, 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 Q4 2023 Closed CCR Impoundment Cap Inspection

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

Facing south 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

Facing southwest towards impoundment cap.

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

Facing northeast towards impoundment cap.

Facing east away from impoundment cap.

Minor Ponding in the SW Corner of Site Basin Near the Outfall

Minor ponded area in southwest corner of basin near the outfall, as viewed from mowed impoundment cap. Note that ponding is much less than that noted in Q3 2023.

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

Erosion from western side of impoundment cap.

APPENDIX B FOURTH QUARTER 2023 GROUDNWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-02	Date:	11/27/2023
Total Depth (Actual):	58.30 (BTOC)	Time:	11:44 AM
Total Depth (Measured):	59.05 (BTOC)	Collection Order:	4
Depth to Water (Measured):	35.71 (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:	11/27/2023
Total Depth (Actual):	59.90 (BTOC)	Time:	1:00 PM
Total Depth (Measured):	60.15 (BTOC)	Collection Order:	12
Depth to Water (Measured):	35.80 (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-04	Date:	11/27/2023
Total Depth (Actual):	60.27 (BTOC)	Time:	12:15 PM
Total Depth (Measured):	60.45 (BTOC)	Collection Order:	7
Depth to Water (Measured):	37.25 (BTOC)		

Is well screen occluded more than 10%? No

If Yes, list steps for redevelopment:

LNAPL Present: No

If Yes, measured thickness =

DNAPL Present: No

If Yes, measured thickness =

Well Completion Type:

Condition of protector: INTACT Yes

Well ID present and readable: Yes

Locks intact: Yes

Weep hole present: No

Water present in protector: No

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

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

Comments:

Well Surface Seal: INTACT

Is surrounding area sloped away from well: No

Any observed ponding: No

Is surface run-off flow evident around well: No

Well Casing Condition: INTACT

Size of well (diameter) = 2 inches

Marking point present: Yes

Well cap in place: Yes

Comments:

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-05R	Date:	11/27/2023
Total Depth (Actual):	62.98 (BTOC)	Time:	11:40 AM
Total Depth (Measured):	63.70 (BTOC)	Collection Order:	3
Depth to Water (Measured):	34.76 (BTOC)		

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

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D	Date:	11/27/2023
Total Depth (Actual):	155.10 (BTOC)	Time:	11:30 AM
Total Depth (Measured):	156.95 (BTOC)	Collection Order:	2
Depth to Water (Measured):	33.70 (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 protector surrounded by sand.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06S	Date:	11/27/2023
Total Depth (Actual):	63.88 (BTOC)	Time:	11:25 AM
Total Depth (Measured):	64.98 (BTOC)	Collection Order:	1
Depth to Water (Measured):	34.01 (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 protector surrounded by sand.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07	Date:	11/27/2023
Total Depth (Actual):	62.39 (BTOC)	Time:	12:45 PM
Total Depth (Measured):	63.84 (BTOC)	Collection Order:	10
Depth to Water (Measured):	31.00 (BTOC)		

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

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-08	Date:	11/27/2023
Total Depth (Actual):	62.36 (BTOC)	Time:	12:50 PM
Total Depth (Measured):	62.50 (BTOC)	Collection Order:	11
Depth to Water (Measured):	32.43 (BTOC)		

Is well screen occluded more than 10%? No
If Yes, list steps for redevelopment:

LNAPL Present: No
If Yes, measured thickness =
DNAPL Present: No
If Yes, measured thickness =

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-09	Date:	11/27/2023
Total Depth (Actual):	63.18 (BTOC)	Time:	12:00 PM
Total Depth (Measured):	63.55 (BTOC)	Collection Order:	5
Depth to Water (Measured):	36.81 (BTOC)		

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

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10D	Date:	11/27/2023
Total Depth (Actual):	98.09 (BTOC)	Time:	12:35 PM
Total Depth (Measured):	99.25 (BTOC)	Collection Order:	8
Depth to Water (Measured):	29.05 (BTOC)		

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

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-10S	Date:	11/27/2023
Total Depth (Actual):	62.55 (BTOC)	Time:	12:40 PM
Total Depth (Measured):	63.29 (BTOC)	Collection Order:	9
Depth to Water (Measured):	30.00 (BTOC)		

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

Well Completion Type:

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

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

APPENDIX C FOURTH QUARTER 2023 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2023/11/29
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.37 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.55 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 58.37 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 250 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.3 - 58.3 ()
Sampler marshall arendell and nolan legg	**Volume of Water in Well / Total Volume Purged** 3.56 (gal) / 3 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:00	36.55	250	0	10.7	6.45	442	NM	2.25	90.4	631	NM	TURBID, NO ODOR
09:05	36.55	250	0.5	12.3	6.1	458	NM	1.9	90.9	874	NM	TURBID, NO ODOR
09:10	36.55	250	0.75	13.2	6.07	473	NM	1.75	90.6	528	NM	TURBID, NO ODOR
09:15	36.55	250	1	13.8	6.08	484	NM	1.54	90.9	332	NM	TURBID, NO ODOR
09:20	36.55	250	1.25	14	6.1	492	NM	1.49	91.3	246	NM	TURBID, NO ODOR
09:25	36.55	250	1.5	14.3	6.11	500	NM	1.43	91.6	188	NM	TURBID, NO ODOR
09:30	36.55	250	1.75	14.1	6.13	507	NM	1.43	92.2	151	NM	TURBID, NO ODOR
09:35	36.55	250	2	14.5	6.16	516	NM	1.37	92.7	117	NM	TURBID, NO ODOR
09:40	36.55	250	2.25	14.7	6.17	518	NM	1.36	92.8	104	NM	TURBID, NO ODOR
09:45	36.55	250	2.5	14.8	6.18	524	NM	1.32	92.8	95	NM	TURBID, NO ODOR
09:50	36.55	250	2.75	15.1	6.19	528	NM	1.29	93.3	97.3	NM	TURBID, NO ODOR
09:55	36.55	250	3	15.2	6.2	530	NM	1.28	93.5	95.6	NM	TURBID, NO ODOR

Sample ID(s): APW-01R-WG-20231129	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	11/30/2023 22:09

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 54.05 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.7 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 59.05 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 300 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.2 - 57.2 ()
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 4.14 (gal) / 2 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
12:45	36.05	300	0	13	6.95	1057	NM	3.51	42.3	226	NM	TURBID, NO ODOR
12:50	37.76	300	0.5	14.2	6.86	1060	NM	1.87	53	564	NM	TURBID, NO ODOR
12:55	39.75	300	1	14.7	6.86	1060	NM	1.7	53.3	198	NM	TURBID, NO ODOR
13:00	40.71	300	1.25	14.5	6.87	1068	NM	1.53	53.5	178	NM	TURBID, NO ODOR
13:05	41.72	300	1.5	14.2	6.89	1066	NM	1.31	53	183	NM	TURBID, NO ODOR
13:10	42.43	300	1.75	14.2	6.9	1067	NM	1.3	52.1	173	NM	TURBID, NO ODOR
13:15	43.55	300	2	14	6.9	1066	NM	1.28	51.3	169	NM	TURBID, NO ODOR

Sample ID(s): APW-02-WG-20231128	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/14/2023 22:07

Low Flow Groundwater Sampling Field Data Form

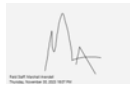
Well ID: APW-03
Well Permit No:

Date: 2023/11/27
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.15 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.55 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.15 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 337.5 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 4.01 (gal) / 3.25 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:30	35.55	250	0	12.8	6.83	861	NM	1.21	110.8	156	NM	CLOUDY, NO ODOR
13:35	35.55	350	0.25	13	6.84	840	NM	0.64	113.3	119	NM	CLOUDY, NO ODOR
13:40	35.55	350	0.75	13.4	6.85	835	NM	0.37	113.9	78.7	NM	CLOUDY, NO ODOR
13:45	35.55	350	1.25	13.4	6.88	820	NM	0.28	112.3	49.5	NM	CLOUDY, NO ODOR
13:50	35.55	350	1.75	13.2	6.89	819	NM	0.24	111.4	22.2	NM	CLEAR, NO ODOR
13:55	35.55	350	2.25	13.5	6.9	814	NM	0.19	109.2	9.79	NM	CLEAR, NO ODOR
14:00	35.55	350	2.75	13.5	6.9	814	NM	0.18	108.6	7.6	NM	CLEAR, NO ODOR
14:05	35.55	350	3.25	13.5	6.9	814	NM	0.16	107	4	NM	CLEAR, NO ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-03-WG-20231127		Marshall Arendell 	11/30/2023 22:07
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-04
Well Permit No:

Date: 2023/11/29
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 55.45 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 37.45 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.45 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 328.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ()
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 3.7 (gal) / 3 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
07:55	37.45	500	0	13	7.49	614	NM	1.97	89	115	NM	CLOUDY, NO ODOR
08:00	37.45	300	0.5	14	7.21	633	NM	0.51	84.1	150	NM	CLOUDY, NO ODOR
08:05	37.45	300	1	13.6	7.16	638	NM	0.39	79.2	77.6	NM	CLOUDY, NO ODOR
08:10	37.45	300	1.5	13.4	7.14	642	NM	0.3	75.8	33.3	NM	CLOUDY, NO ODOR
08:15	37.45	300	2	13.9	7.13	637	NM	0.32	73.8	22	NM	CLOUDY, NO ODOR
08:20	37.45	300	2.5	14.2	7.12	636	NM	0.32	72.2	21.5	NM	CLOUDY, NO ODOR
08:25	37.45	300	3	14.3	7.11	635	NM	0.31	71	22.8	NM	CLOUDY, NO ODOR

Sample ID(s): APW-04-WG-20231130	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/14/2023 22:08

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05R
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.7 (ft)	**Reference Elevation** ()
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.71 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.7 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 300 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / - ()
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 4.73 (gal) / 3.25 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:05	34.75	300	0	11.7	7.23	879	NM	2.8	60.1	85.1	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
11:10	34.75	300	0.5	13.9	7.1	915	NM	1.75	57.1	901	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:15	34.75	300	1	14.2	7.1	916	NM	1.45	53.9	597	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:20	34.75	300	1.25	14.6	7.1	919	NM	1.06	47.3	414	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:25	34.75	300	1.5	14.9	7.11	921	NM	0.75	38.8	268	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:30	34.75	300	1.75	15	7.11	921	NM	0.65	31.8	199	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:35	34.75	300	2	15.2	7.11	921	NM	0.53	24.5	152	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:40	34.75	300	2.25	15.1	7.12	921	NM	0.43	14.3	134	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:45	34.75	300	2.5	15.1	7.13	922	NM	0.29	-3.3	98.4	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:50	34.75	300	2.75	15.2	7.13	922	NM	0.26	-7.1	83.8	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
11:55	34.75	300	3	15.2	7.13	920	NM	0.23	-12.5	82.5	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR
12:00	34.75	300	3.25	15.3	7.13	921	NM	0.21	-16.4	76.1	NM	TURBID, SLIGHT ROTTEN-EGG LIKE ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-05R-WG-20231128,DUP-01-WG-20231128		Marshall Arendell 	12/01/2023 18:44
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06D
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 151.95 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.76 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 156.95 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 300 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler marshall arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 20.1 (gal) / 4.5 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:45	33.75	300	0	12.7	7.14	769	NM	1.81	36.1	30	NM	CLEAR, NO ODOR
09:50	33.75	250	0.5	12.7	7.09	767	NM	1.02	25.6	250	NM	TURBID, NO ODOR
09:55	33.75	250	1	13.4	7.08	770	NM	0.83	19.8	131	NM	CLOUDY, NO ODOR
10:00	33.75	250	1.5	13.6	7.08	770	NM	0.74	16.9	116	NM	CLOUDY, NO ODOR
10:05	33.75	250	2	13.7	7.08	770	NM	0.58	12.7	73.9	NM	CLOUDY, NO ODOR
10:10	33.75	250	2.5	13.7	7.08	769	NM	0.41	5.5	48.2	NM	CLOUDY, NO ODOR
10:15	33.75	250	3	14	7.08	768	NM	0.38	3.9	19.5	NM	CLEAR, NO ODOR
10:20	33.75	250	3.5	13.8	7.08	769	NM	0.34	2.1	5.85	NM	CLEAR, NO ODOR
10:25	33.75	250	4	13.7	7.08	769	NM	0.3	0.4	4.49	NM	CLEAR, NO ODOR
10:30	33.75	250	4.5	13.9	7.08	769	NM	0.26	-2.7	3.02	NM	CLEAR, NO ODOR

Sample ID(s): APW-06D-WG-20231128	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/14/2023 22:17

Low Flow Groundwater Sampling Field Data Form

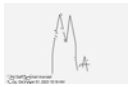
Well ID: APW-07
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.84 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.84 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 5.36 (gal) / 5 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:15	31	400	0	12.4	6.62	1148	NM	1.8	64.9	181	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:20	31	400	0.5	12.6	6.6	1166	NM	1.04	59.4	182	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:25	31	400	1	12.9	6.6	1173	NM	0.87	55.1	105	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:30	31	400	1.5	13	6.61	1178	NM	0.57	49.4	78.4	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:35	31	400	2	13	6.61	1179	NM	0.53	45.5	66.9	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:40	31	400	2.5	13	6.61	1181	NM	0.44	42.6	57.3	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:45	31	400	3	13.2	6.62	1182	NM	0.34	38.3	51.2	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:50	31	400	3.5	13.2	6.62	1183	NM	0.31	33.3	43.4	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
14:55	31	400	4	13.3	6.62	1183	NM	0.22	27	23.1	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
15:00	31	400	4.5	13.5	6.62	1183	NM	0.22	24.5	22.6	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR
15:05	31	400	5	13.5	6.62	1181	NM	0.19	21.9	21	NM	CLOUDY, SLIGHTLY ROTTEN-EGG LIKE ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-07-WG-20231128		Marshall Arendell 	12/01/2023 16:16
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 57.5 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 32.4 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.5 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 400 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 4.91 (gal) / 4.5 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:40	32.4	400	0	10.7	7.18	627	NM	2.37	38.9	124	NM	CLOUDY, NO ODOR
15:45	32.4	400	0.5	12.7	6.96	646	NM	1.17	34	1000	NM	OVERRANGE, TURBID, NO ODOR
15:50	32.4	400	1	13.8	6.93	645	NM	0.8	26.5	1000	NM	OVERRANGE, TURBID, NO ODOR
15:55	32.4	400	1.5	13.7	6.92	643	NM	0.62	24.4	680	NM	TURBID, NO ODOR
16:00	32.4	400	2	13.8	6.92	641	NM	0.45	22.6	439	NM	TURBID, NO ODOR
16:05	32.4	400	2.5	13.9	6.92	640	NM	0.39	21.6	326	NM	TURBID, NO ODOR
16:10	32.4	400	3	13.7	6.93	637	NM	0.35	20.1	234	NM	TURBID, NO ODOR
16:15	32.4	400	3.5	13.8	6.93	635	NM	0.28	19	179	NM	TURBID, NO ODOR
16:20	32.4	400	4	13.8	6.94	631	NM	0.24	18.2	162	NM	TURBID, NO ODOR
16:25	32.4	400	4.5	13.8	6.94	629	NM	0.21	17.7	169	NM	TURBID, NO ODOR

Sample ID(s): APW-08-WG-20231128	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/01/2023 16:39

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2023/11/29
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.55 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.56 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.55 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 327.8 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 4.4 (gal) / 3 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
10:35	36.6	150	0	14.1	7.44	545	NM	4.77	89.5	44.6	NM	CLOUDY, NO ODOR
10:40	36.6	350	0.5	15	7.22	574	NM	2.6	84.5	71.3	NM	CLOUDY, NO ODOR
10:45	36.6	350	0.75	15	7.2	577	NM	1.37	80.8	49.9	NM	CLOUDY, NO ODOR
10:50	36.6	350	1.25	15.2	7.2	575	NM	1.11	79.2	22.8	NM	CLOUDY, NO ODOR
10:55	36.6	350	1.75	15.3	7.2	574	NM	1.05	78.9	19	NM	CLOUDY, NO ODOR
11:00	36.6	350	2.25	15.2	7.2	573	NM	0.94	78.3	12.2	NM	CLEAR, NO ODOR
11:05	36.6	350	2.5	15.3	7.2	572	NM	0.84	77.9	6.57	NM	CLEAR, NO ODOR
11:10	36.6	350	2.75	15.3	7.2	572	NM	0.83	77.8	4.4	NM	CLEAR, NO ODOR
11:15	36.6	350	3	15.3	7.2	571	NM	0.78	77.7	3.82	NM	CLEAR, NO ODOR

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-09-WG-20231129,DUP-02-WG-20231129		Marshall Arendell 	12/01/2023 18:41
Analysis:			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2023/11/27
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 94.25 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 29.1 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 99.25 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 355 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler marshall arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 11.45 (gal) / 4.5 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:40	29.1	450	0	13.2	6.97	668	NM	3.38	113.2	194	NM	CLOUDY, NO ODOR
14:45	29.1	300	0.5	12.4	6.82	665	NM	1.13	111.7	1000	NM	OVERRANGE, TURBID, NO ODOR
14:50	29.1	200	1	12.8	6.83	670	NM	0.59	108.6	1000	NM	OVERRANGE, TURBID, NO ODOR
14:55	29.1	500	1.5	12.7	6.83	667	NM	0.53	107.4	1000	NM	OVERRANGE, TURBID, NO ODOR
15:00	29.1	350	2	13.8	6.83	670	NM	0.43	105.7	801	NM	TURBID, NO ODOR
15:05	29.1	350	2.5	13.7	6.83	671	NM	0.36	104.3	433	NM	TURBID, NO ODOR
15:10	29.1	350	3	13.6	6.83	671	NM	0.34	103.4	300	NM	TURBID, NO ODOR
15:15	29.1	350	3.5	13.5	6.82	670	NM	0.32	102.4	211	NM	TURBID, NO ODOR
15:20	29.1	350	4	13.4	6.82	671	NM	0.3	102.1	203	NM	CLOUDY, NO ODOR
15:25	29.1	350	4.5	13.3	6.82	671	NM	0.28	101.9	196	NM	CLOUDY, NO ODOR

Sample ID(s): APW-10D-WG-20231127	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/01/2023 18:56

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-10S Well Permit No:	Date: 2023/11/27 sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.29 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 30 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.29 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 363.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall Arendell and Nolan legg	**Volume of Water in Well / Total Volume Purged** 5.43 (gal) / 5 (gal)	**Well Construction** PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:40	30.3	400	0	13.4	6.66	1247	NM	1.26	137.7	37.5	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
15:45	30.3	450	0.5	12.9	6.73	1256	NM	0.26	119.2	47.9	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
15:50	30.3	350	1	13.4	6.74	1258	NM	0.17	87.1	41.3	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
15:55	30.3	350	1.5	13.4	6.75	1260	NM	0.14	71.7	33.2	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:00	30.3	350	2	13.4	6.74	1259	NM	0.11	43.9	21.4	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:05	30.3	350	2.5	13.6	6.74	1261	NM	0.1	27.7	22.3	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:10	30.3	350	3	13.7	6.74	1261	NM	0.09	9.4	24.8	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:15	30.3	350	3.5	13.6	6.74	1261	NM	0.09	-5.6	21.7	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:20	30.3	350	4	13.4	6.74	1262	NM	0.08	-19.2	13.5	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:25	30.3	350	4.5	13.3	6.74	1261	NM	0.07	-23.9	14	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR
16:30	30.3	350	5	13.2	6.74	1261	NM	0.07	-26.2	13.1	NM	CLEAR, SLIGHT ROTTEN-EGG LIKE ODOR

Sample ID(s): APW-10S-WG-20231127	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Marshall Arendell 	12/01/2023 19:14

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2023/11/28
sunny, cold

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.95 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 33.95 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 64.98 (ft)
Project Name 20231130-GWMonitor	**Average Purge Rate** 250 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler marshall Arendell and Nolan Legg	**Volume of Water in Well / Total Volume Purged** 5.06 (gal) / 5.5 (gal)	**Well Construction**

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:00	34.3	250	0	13.9	7.17	889	NM	0.57	72.6	83.3	NM	CLEAR, NO ODOR
08:05	34.3	250	0.5	12.5	7.12	880	NM	0.35	56.3	16	NM	CLEAR, NO ODOR
08:10	34.3	250	1	13	7.09	879	NM	0.24	33.8	8.06	NM	CLEAR, NO ODOR
08:15	34.3	250	1.5	13	7.1	880	NM	0.2	22.7	5.63	NM	CLEAR, NO ODOR
08:20	34.3	250	2	13.3	7.1	882	NM	0.17	10.5	4.51	NM	CLEAR, NO ODOR
08:25	34.3	250	2.5	13.2	7.1	882	NM	0.15	1.5	2.6	NM	CLEAR, NO ODOR
08:30	34.3	250	3	13.5	7.1	880	NM	0.14	-5.5	1.35	NM	CLEAR, NO ODOR
08:35	34.3	250	3.5	13.1	7.09	880	NM	0.12	-17	2.26	NM	CLEAR, NO ODOR
08:40	34.3	250	4	13.1	7.09	882	NM	0.12	-24.6	1.57	NM	CLEAR, NO ODOR
08:45	34.3	250	4.5	13	7.09	881	NM	0.11	-37.3	2.49	NM	CLEAR, NO ODOR
08:50	34.3	250	5	13.1	7.08	880	NM	0.1	-40.7	1.75	NM	CLEAR, NO ODOR
08:55	34.3	250	5.5	13.1	7.08	880	NM	0.09	-44.8	1.26	NM	CLEAR, NO ODOR

Sample ID(s): APW-06S-WG-20231128	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis:		Marshall Arendell 	12/14/2023 22:13

APPENDIX D FOURTH QUARTER 2023 LABORATORY ANALYTICAL REPORT

January 02, 2024

Clay Sansoucie
ERM
1968 Craig Road
Suite 100
St. Louis, MO 63146
TEL: (314) 956-0269
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: 0599247 **WorkOrder:** 23112078

Dear Clay Sansoucie:

TEKLAB, INC received 15 samples on 11/29/2023 2:30:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: ERM
Client Project: 0599247

Work Order: 23112078
Report Date: 02-Jan-24

This reporting package includes the following:

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Definitions

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Qualifiers

- Unknown hydrocarbon

B - Analyte detected in associated Method Blank

C - RL shown is a Client Requested Quantitation Limit

E - Value above quantitation range

H - Holding times exceeded

I - Associated internal standard was outside method criteria

J - Analyte detected below quantitation limits

M - Manual Integration used to determine area response

ND - Not Detected at the Reporting Limit

R - RPD outside accepted recovery limits

S - Spike Recovery outside recovery limits

T - TIC(Tentatively identified compound)

X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: ERM
Client Project: 0599247

Work Order: 23112078
Report Date: 02-Jan-24

Cooler Receipt Temp: 3.0 °C

Ra226/228 analyses were performed by Summit Environmental Technologies, Inc. See attached report for results and QC.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2024	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2024	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2024	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2024	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2025	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-001 **Client Sample ID:** APW-03-WG-20231127

Matrix: GROUNDWATER **Collection Date:** 11/27/2023 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**556**	mg/L	1	11/30/2023 10:29	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**133**	mg/L	10	12/01/2023 20:46	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.24**		1	11/30/2023 15:19	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.24**	mg/L	1	11/30/2023 10:13	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	12/01/2023 20:36	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0018**	mg/L	5	12/11/2023 9:48	215495
Arsenic	NELAP	0.0010		**0.0013**	mg/L	5	12/05/2023 19:36	215495
Barium	NELAP	0.0010		**0.122**	mg/L	5	12/05/2023 19:36	215495
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:36	215495
Boron	NELAP	0.0250		**1.69**	mg/L	5	12/05/2023 19:36	215495
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:36	215495
Calcium	NELAP	0.125		**111**	mg/L	5	12/07/2023 11:49	215495
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/08/2023 11:38	215495
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:36	215495
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:36	215495
Lithium	*	0.0030		**0.0256**	mg/L	5	12/05/2023 19:36	215495
Molybdenum	NELAP	0.0015		**0.0303**	mg/L	5	12/07/2023 11:49	215495
Selenium	NELAP	0.0010		**0.0012**	mg/L	5	12/05/2023 19:36	215495
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 19:36	215495
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:29	215460
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	12/05/2023 21:02	215460
Barium	NELAP	0.0010		**0.167**	mg/L	5	12/05/2023 21:02	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:02	215460
Boron	NELAP	0.0250		**2.22**	mg/L	5	12/05/2023 21:02	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:02	215460
Calcium	NELAP	0.125		**115**	mg/L	5	12/07/2023 13:09	215460
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/08/2023 12:03	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:02	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:02	215460
Lithium	*	0.0030		**0.0324**	mg/L	5	12/05/2023 21:02	215460
Molybdenum	NELAP	0.0015		**0.0319**	mg/L	5	12/07/2023 13:09	215460
Selenium	NELAP	0.0010		**0.0019**	mg/L	5	12/05/2023 21:02	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:02	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:09	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-002 **Client Sample ID:** APW-10D-WG-20231127

Matrix: GROUNDWATER **Collection Date:** 11/27/2023 15:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**445**	mg/L	2.5	11/30/2023 10:29	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**26**	mg/L	1	12/01/2023 20:57	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.08**		1	11/30/2023 15:21	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.14**	mg/L	1	11/30/2023 10:16	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**10**	mg/L	1	12/01/2023 20:57	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0013**	mg/L	5	12/06/2023 11:51	215379
Arsenic	NELAP	0.0010		**0.0018**	mg/L	5	12/04/2023 18:20	215379
Barium	NELAP	0.0010		**0.448**	mg/L	5	12/04/2023 18:20	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:20	215379
Boron	NELAP	0.0250		**0.0823**	mg/L	5	12/04/2023 18:20	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:20	215379
Calcium	NELAP	0.125		**83.4**	mg/L	5	12/07/2023 9:58	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:20	215379
Cobalt	NELAP	0.0010		**0.0038**	mg/L	5	12/04/2023 18:20	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:20	215379
Lithium	*	0.0030		**0.0176**	mg/L	5	12/04/2023 18:20	215379
Molybdenum	NELAP	0.0015		**0.0025**	mg/L	5	12/04/2023 18:20	215379
Selenium	NELAP	0.0010		**0.0043**	mg/L	5	12/04/2023 18:20	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 18:20	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:33	215460
Arsenic	NELAP	0.0010		**0.0021**	mg/L	5	12/05/2023 21:08	215460
Barium	NELAP	0.0010		**0.398**	mg/L	5	12/05/2023 21:08	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:08	215460
Boron	NELAP	0.0250		**0.0754**	mg/L	5	12/05/2023 21:08	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:08	215460
Calcium	NELAP	0.125		**120**	mg/L	5	12/07/2023 13:15	215460
Chromium	NELAP	0.0015		**0.0021**	mg/L	5	12/08/2023 12:53	215460
Cobalt	NELAP	0.0010		**0.0039**	mg/L	5	12/05/2023 21:08	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:08	215460
Lithium	*	0.0030		**0.0154**	mg/L	5	12/05/2023 21:08	215460
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/07/2023 13:15	215460
Selenium	NELAP	0.0010		**0.0033**	mg/L	5	12/05/2023 21:08	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:08	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:11	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-003 **Client Sample ID:** APW-10S-WG-20231127

Matrix: GROUNDWATER **Collection Date:** 11/27/2023 16:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	100		**900**	mg/L	5	11/30/2023 10:30	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	12/01/2023 21:22	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.01**		1	11/30/2023 15:22	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.18**	mg/L	1	11/30/2023 10:19	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**20**	mg/L	1	12/01/2023 21:21	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 11:57	215379
Arsenic	NELAP	0.0010		**0.251**	mg/L	5	12/04/2023 18:26	215379
Barium	NELAP	0.0010		**0.711**	mg/L	5	12/04/2023 18:26	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:26	215379
Boron	NELAP	0.0250		**0.682**	mg/L	5	12/04/2023 18:26	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:26	215379
Calcium	NELAP	0.125		**137**	mg/L	5	12/07/2023 10:04	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:26	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:26	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:26	215379
Lithium	*	0.0030		**0.0359**	mg/L	5	12/04/2023 18:26	215379
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:26	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:26	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 18:26	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:53	215460
Arsenic	NELAP	0.0010		**0.276**	mg/L	5	12/05/2023 21:33	215460
Barium	NELAP	0.0010		**0.804**	mg/L	5	12/05/2023 21:33	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:33	215460
Boron	NELAP	0.0250		**0.555**	mg/L	5	12/07/2023 15:11	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:33	215460
Calcium	NELAP	0.125	S	**129**	mg/L	5	12/07/2023 15:11	215460
Chromium	NELAP	0.0015		**0.0016**	mg/L	5	12/12/2023 9:35	215460
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	12/05/2023 21:33	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:33	215460
Lithium	*	0.0030		**0.0401**	mg/L	5	12/05/2023 21:33	215460
Molybdenum	NELAP	0.0015		**0.0021**	mg/L	5	12/07/2023 15:11	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:33	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:33	215460
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:13	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-004 **Client Sample ID:** APW-06S-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**635**	mg/L	2.5	11/30/2023 10:30	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**237**	mg/L	10	12/01/2023 21:34	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.12**		1	11/30/2023 15:24	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.33**	mg/L	1	11/30/2023 10:22	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**22**	mg/L	1	12/01/2023 21:29	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 12:02	215379
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	12/04/2023 18:32	215379
Barium	NELAP	0.0010		**0.269**	mg/L	5	12/04/2023 18:32	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:32	215379
Boron	NELAP	0.0250		**8.41**	mg/L	5	12/04/2023 18:32	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:32	215379
Calcium	NELAP	0.125		**88.8**	mg/L	5	12/07/2023 10:10	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:32	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:32	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:32	215379
Lithium	*	0.0030		**0.0498**	mg/L	5	12/04/2023 18:32	215379
Molybdenum	NELAP	0.0015		**0.309**	mg/L	5	12/04/2023 18:32	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:32	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 18:32	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:37	215460
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	12/05/2023 21:14	215460
Barium	NELAP	0.0010		**0.305**	mg/L	5	12/05/2023 21:14	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:14	215460
Boron	NELAP	0.0250		**9.19**	mg/L	5	12/05/2023 21:14	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:14	215460
Calcium	NELAP	0.125		**90.0**	mg/L	5	12/07/2023 13:21	215460
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/12/2023 9:00	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:14	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:14	215460
Lithium	*	0.0030		**0.0564**	mg/L	5	12/05/2023 21:14	215460
Molybdenum	NELAP	0.0015		**0.207**	mg/L	5	12/07/2023 13:21	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:14	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:14	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:16	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-005 **Client Sample ID:** APW-06D-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 10:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**560**	mg/L	2.5	11/30/2023 10:31	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**184**	mg/L	10	12/01/2023 21:42	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.36**		1	11/30/2023 15:26	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.24**	mg/L	1	11/30/2023 10:24	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**22**	mg/L	1	12/01/2023 21:37	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 12:07	215379
Arsenic	NELAP	0.0010		**0.0161**	mg/L	5	12/04/2023 18:38	215379
Barium	NELAP	0.0010		**0.185**	mg/L	5	12/04/2023 18:38	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:38	215379
Boron	NELAP	0.0250		**4.67**	mg/L	5	12/04/2023 18:38	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:38	215379
Calcium	NELAP	0.125		**80.3**	mg/L	5	12/07/2023 10:16	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:38	215379
Cobalt	NELAP	0.0010		**0.0012**	mg/L	5	12/04/2023 18:38	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:38	215379
Lithium	*	0.0030		**0.0241**	mg/L	5	12/04/2023 18:38	215379
Molybdenum	NELAP	0.0015		**0.0949**	mg/L	5	12/04/2023 18:38	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:38	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 18:38	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:41	215460
Arsenic	NELAP	0.0010		**0.0135**	mg/L	5	12/05/2023 21:21	215460
Barium	NELAP	0.0010		**0.151**	mg/L	5	12/05/2023 21:21	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:21	215460
Boron	NELAP	0.0250		**3.80**	mg/L	5	12/05/2023 21:21	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:21	215460
Calcium	NELAP	0.125		**98.4**	mg/L	5	12/07/2023 13:27	215460
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/12/2023 9:05	215460
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	12/05/2023 21:21	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:21	215460
Lithium	*	0.0030		**0.0199**	mg/L	5	12/05/2023 21:21	215460
Molybdenum	NELAP	0.0015		**0.0557**	mg/L	5	12/07/2023 13:27	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:21	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:21	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:18	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-006 **Client Sample ID:** APW-05R-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 12:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**705**	mg/L	2.5	11/30/2023 10:31	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**330**	mg/L	10	12/01/2023 21:50	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.33**		1	11/30/2023 15:27	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.38**	mg/L	1	11/30/2023 10:35	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**16**	mg/L	1	12/01/2023 21:45	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 12:12	215379
Arsenic	NELAP	0.0010		**0.0029**	mg/L	5	12/04/2023 18:44	215379
Barium	NELAP	0.0010		**0.186**	mg/L	5	12/04/2023 18:44	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:44	215379
Boron	NELAP	0.0250		**8.71**	mg/L	5	12/04/2023 18:44	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:44	215379
Calcium	NELAP	0.125		**98.4**	mg/L	5	12/07/2023 10:22	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 18:44	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:44	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:44	215379
Lithium	*	0.0030		**0.0455**	mg/L	5	12/04/2023 18:44	215379
Molybdenum	NELAP	0.0015		**0.282**	mg/L	5	12/04/2023 18:44	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 18:44	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 18:44	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:45	215460
Arsenic	NELAP	0.0010		**0.0042**	mg/L	5	12/05/2023 21:27	215460
Barium	NELAP	0.0010		**0.225**	mg/L	5	12/05/2023 21:27	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:27	215460
Boron	NELAP	0.0250		**9.62**	mg/L	5	12/05/2023 21:27	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:27	215460
Calcium	NELAP	0.125		**97.1**	mg/L	5	12/07/2023 13:33	215460
Chromium	NELAP	0.0015		**0.0020**	mg/L	5	12/12/2023 9:10	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:27	215460
Lead	NELAP	0.0010		**0.0020**	mg/L	5	12/05/2023 21:27	215460
Lithium	*	0.0030		**0.0523**	mg/L	5	12/05/2023 21:27	215460
Molybdenum	NELAP	0.0015		**0.203**	mg/L	5	12/07/2023 13:33	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 21:27	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 21:27	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:20	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-007 **Client Sample ID:** APW-02-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 13:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**920**	mg/L	2.5	11/30/2023 10:31	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**440**	mg/L	10	12/01/2023 21:58	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.11**		1	11/30/2023 15:29	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	11/30/2023 10:37	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	12/01/2023 21:53	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 13:36	215379
Arsenic	NELAP	0.0010		**0.0168**	mg/L	5	12/04/2023 20:03	215379
Barium	NELAP	0.0010		**0.205**	mg/L	5	12/04/2023 20:03	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 20:03	215379
Boron	NELAP	0.0250	S	**9.57**	mg/L	5	12/04/2023 20:03	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 20:03	215379
Calcium	NELAP	0.125	S	**121**	mg/L	5	12/07/2023 12:08	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 20:03	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 20:03	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 20:03	215379
Lithium	*	0.0030		**0.0506**	mg/L	5	12/04/2023 20:03	215379
Molybdenum	NELAP	0.0015		**0.205**	mg/L	5	12/04/2023 20:03	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 20:03	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 20:03	215379
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 10:49	215460
Arsenic	NELAP	0.0010		**0.0237**	mg/L	5	12/05/2023 22:16	215460
Barium	NELAP	0.0010		**0.303**	mg/L	5	12/05/2023 22:16	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:16	215460
Boron	NELAP	0.0250		**9.62**	mg/L	5	12/05/2023 22:16	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:16	215460
Calcium	NELAP	0.125		**132**	mg/L	5	12/07/2023 14:28	215460
Chromium	NELAP	0.0015		**0.0092**	mg/L	5	12/12/2023 9:15	215460
Cobalt	NELAP	0.0010		**0.0027**	mg/L	5	12/12/2023 9:15	215460
Lead	NELAP	0.0010		**0.0057**	mg/L	5	12/05/2023 22:16	215460
Lithium	*	0.0030		**0.0560**	mg/L	5	12/05/2023 22:16	215460
Molybdenum	NELAP	0.0015		**0.147**	mg/L	5	12/07/2023 14:28	215460
Selenium	NELAP	0.0010		**0.0015**	mg/L	5	12/12/2023 9:15	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:16	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:22	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-008 **Client Sample ID:** APW-07-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**790**	mg/L	2.5	11/30/2023 10:32	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**40**	mg/L	1	12/01/2023 22:17	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**6.86**		1	11/30/2023 15:32	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.20**	mg/L	1	11/30/2023 10:40	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	12/01/2023 22:17	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 12:17	215379
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	12/04/2023 19:33	215379
Barium	NELAP	0.0010		**0.465**	mg/L	5	12/04/2023 19:33	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:33	215379
Boron	NELAP	0.0250		**0.243**	mg/L	5	12/04/2023 19:33	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:33	215379
Calcium	NELAP	0.125		**162**	mg/L	5	12/07/2023 10:28	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:33	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:33	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:33	215379
Lithium	*	0.0030		**0.0212**	mg/L	5	12/04/2023 19:33	215379
Molybdenum	NELAP	0.0015		**0.0040**	mg/L	5	12/04/2023 19:33	215379
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:33	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 19:33	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:24	215460
Arsenic	NELAP	0.0010		**0.0022**	mg/L	5	12/05/2023 22:22	215460
Barium	NELAP	0.0010		**0.522**	mg/L	5	12/05/2023 22:22	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:22	215460
Boron	NELAP	0.0250		**0.274**	mg/L	5	12/05/2023 22:22	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:22	215460
Calcium	NELAP	0.125		**177**	mg/L	5	12/07/2023 14:34	215460
Chromium	NELAP	0.0015		**0.0024**	mg/L	5	12/12/2023 9:20	215460
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	12/12/2023 9:20	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:22	215460
Lithium	*	0.0030		**0.0231**	mg/L	5	12/05/2023 22:22	215460
Molybdenum	NELAP	0.0015		**0.0042**	mg/L	5	12/07/2023 14:34	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/12/2023 9:20	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:22	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:35	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-009 **Client Sample ID:** APW-08-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 16:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**395**	mg/L	2.5	11/30/2023 10:32	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**24**	mg/L	1	12/01/2023 22:25	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.27**		1	11/30/2023 15:34	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	11/30/2023 10:43	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	12/01/2023 22:25	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 13:20	215379
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	12/04/2023 19:39	215379
Barium	NELAP	0.0010		**0.255**	mg/L	5	12/04/2023 19:39	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:39	215379
Boron	NELAP	0.0250		**0.154**	mg/L	5	12/04/2023 19:39	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:39	215379
Calcium	NELAP	0.125		**71.3**	mg/L	5	12/07/2023 10:34	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:39	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:39	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:39	215379
Lithium	*	0.0030		**0.0204**	mg/L	5	12/04/2023 19:39	215379
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:39	215379
Selenium	NELAP	0.0010		**0.0231**	mg/L	5	12/04/2023 19:39	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 19:39	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:28	215460
Arsenic	NELAP	0.0010		**0.0025**	mg/L	5	12/05/2023 22:28	215460
Barium	NELAP	0.0010		**0.261**	mg/L	5	12/05/2023 22:28	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:28	215460
Boron	NELAP	0.0250		**0.155**	mg/L	5	12/05/2023 22:28	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:28	215460
Calcium	NELAP	0.125		**81.2**	mg/L	5	12/07/2023 14:41	215460
Chromium	NELAP	0.0015		**0.0049**	mg/L	5	12/12/2023 9:25	215460
Cobalt	NELAP	0.0010		**0.0021**	mg/L	5	12/12/2023 9:25	215460
Lead	NELAP	0.0010		**0.0018**	mg/L	5	12/05/2023 22:28	215460
Lithium	*	0.0030		**0.0211**	mg/L	5	12/05/2023 22:28	215460
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/07/2023 14:41	215460
Selenium	NELAP	0.0010		**0.0221**	mg/L	5	12/12/2023 9:25	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:28	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:38	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-010 **Client Sample ID:** APW-04-WG-20231129

Matrix: GROUNDWATER **Collection Date:** 11/29/2023 8:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**430**	mg/L	1	11/30/2023 10:40	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**54**	mg/L	2	12/05/2023 12:03	R340126
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.31**		1	11/30/2023 15:36	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.18**	mg/L	1	11/30/2023 10:45	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**11**	mg/L	1	12/01/2023 22:36	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 13:25	215379
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	12/04/2023 19:45	215379
Barium	NELAP	0.0010		**0.165**	mg/L	5	12/04/2023 19:45	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:45	215379
Boron	NELAP	0.0250		**0.645**	mg/L	5	12/04/2023 19:45	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:45	215379
Calcium	NELAP	0.125		**77.9**	mg/L	5	12/07/2023 10:41	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:45	215379
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:45	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:45	215379
Lithium	*	0.0030		**0.0333**	mg/L	5	12/04/2023 19:45	215379
Molybdenum	NELAP	0.0015		**0.0461**	mg/L	5	12/04/2023 19:45	215379
Selenium	NELAP	0.0010		**0.0139**	mg/L	5	12/04/2023 19:45	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 19:45	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:33	215460
Arsenic	NELAP	0.0010		**0.0028**	mg/L	5	12/05/2023 22:35	215460
Barium	NELAP	0.0010		**0.153**	mg/L	5	12/05/2023 22:35	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:35	215460
Boron	NELAP	0.0250		**0.559**	mg/L	5	12/05/2023 22:35	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:35	215460
Calcium	NELAP	0.125		**124**	mg/L	5	12/12/2023 9:30	215460
Chromium	NELAP	0.0015		**0.0033**	mg/L	5	12/12/2023 9:30	215460
Cobalt	NELAP	0.0010		**0.0012**	mg/L	5	12/12/2023 9:30	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:35	215460
Lithium	*	0.0030		**0.0298**	mg/L	5	12/05/2023 22:35	215460
Molybdenum	NELAP	0.0015		**0.0347**	mg/L	5	12/07/2023 14:47	215460
Selenium	NELAP	0.0010		**0.0150**	mg/L	5	12/12/2023 9:30	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:35	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:40	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-011 **Client Sample ID:** APW-01R-WG-20231129

Matrix: GROUNDWATER **Collection Date:** 11/29/2023 10:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**300**	mg/L	2.5	11/30/2023 10:41	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**73**	mg/L	5	12/05/2023 12:40	R340126
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**6.59**		1	11/30/2023 15:41	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.17**	mg/L	1	11/30/2023 10:47	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**7**	mg/L	1	12/01/2023 23:10	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 13:31	215379
Arsenic	NELAP	0.0010		**0.0015**	mg/L	5	12/04/2023 19:51	215379
Barium	NELAP	0.0010		**0.245**	mg/L	5	12/04/2023 19:51	215379
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:51	215379
Boron	NELAP	0.0250		**0.279**	mg/L	5	12/04/2023 19:51	215379
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:51	215379
Calcium	NELAP	0.125		**57.6**	mg/L	5	12/07/2023 12:01	215379
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:51	215379
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	12/04/2023 19:51	215379
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/04/2023 19:51	215379
Lithium	*	0.0030		**0.0193**	mg/L	5	12/04/2023 19:51	215379
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/04/2023 19:51	215379
Selenium	NELAP	0.0010		**0.0058**	mg/L	5	12/04/2023 19:51	215379
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/04/2023 19:51	215379
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:37	215460
Arsenic	NELAP	0.0010		**0.0033**	mg/L	5	12/05/2023 22:41	215460
Barium	NELAP	0.0010		**0.259**	mg/L	5	12/05/2023 22:41	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:41	215460
Boron	NELAP	0.0250		**0.263**	mg/L	5	12/05/2023 22:41	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:41	215460
Calcium	NELAP	0.125		**94.3**	mg/L	5	12/12/2023 10:29	215460
Chromium	NELAP	0.0015		**0.0049**	mg/L	5	12/12/2023 10:29	215460
Cobalt	NELAP	0.0010		**0.0027**	mg/L	5	12/12/2023 10:29	215460
Lead	NELAP	0.0010		**0.0020**	mg/L	5	12/05/2023 22:41	215460
Lithium	*	0.0030		**0.0189**	mg/L	5	12/05/2023 22:41	215460
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/12/2023 10:29	215460
Selenium	NELAP	0.0010		**0.0054**	mg/L	5	12/12/2023 10:29	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:41	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:42	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-012 **Client Sample ID:** APW-09-WG-20231129

Matrix: GROUNDWATER **Collection Date:** 11/29/2023 11:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**380**	mg/L	1	12/01/2023 10:01	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**34**	mg/L	1	12/01/2023 23:18	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.50**		1	11/30/2023 15:43	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.20**	mg/L	1	11/30/2023 10:50	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	12/01/2023 23:18	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0011**	mg/L	5	12/11/2023 9:52	215495
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	12/05/2023 19:42	215495
Barium	NELAP	0.0010		**0.109**	mg/L	5	12/05/2023 19:42	215495
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:42	215495
Boron	NELAP	0.0250		**0.169**	mg/L	5	12/05/2023 19:42	215495
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:42	215495
Calcium	NELAP	0.125		**73.5**	mg/L	5	12/07/2023 11:55	215495
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/08/2023 11:45	215495
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:42	215495
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:42	215495
Lithium	*	0.0030		**0.0121**	mg/L	5	12/05/2023 19:42	215495
Molybdenum	NELAP	0.0015		**0.0154**	mg/L	5	12/07/2023 11:55	215495
Selenium	NELAP	0.0010		**0.0163**	mg/L	5	12/05/2023 19:42	215495
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 19:42	215495
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:41	215460
Arsenic	NELAP	0.0010		**0.0026**	mg/L	5	12/05/2023 22:47	215460
Barium	NELAP	0.0010		**0.131**	mg/L	5	12/05/2023 22:47	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:47	215460
Boron	NELAP	0.0250		**0.191**	mg/L	5	12/05/2023 22:47	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:47	215460
Calcium	NELAP	0.125		**80.9**	mg/L	5	12/12/2023 10:34	215460
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/12/2023 10:34	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/12/2023 10:34	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:47	215460
Lithium	*	0.0030		**0.0138**	mg/L	5	12/05/2023 22:47	215460
Molybdenum	NELAP	0.0015		**0.0188**	mg/L	5	12/12/2023 10:34	215460
Selenium	NELAP	0.0010		**0.0214**	mg/L	5	12/12/2023 10:34	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:47	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:45	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-013 **Client Sample ID:** DUP-01-WG-20231128

Matrix: GROUNDWATER **Collection Date:** 11/28/2023 0:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**690**	mg/L	2.5	11/30/2023 10:40	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**321**	mg/L	10	12/01/2023 23:32	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.34**		1	11/30/2023 15:45	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.35**	mg/L	1	11/30/2023 10:52	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**16**	mg/L	1	12/01/2023 23:26	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010	S	**< 0.0010**	mg/L	5	12/11/2023 10:00	215495
Arsenic	NELAP	0.0010		**0.0018**	mg/L	5	12/07/2023 13:39	215495
Barium	NELAP	0.0010		**0.127**	mg/L	5	12/07/2023 13:39	215495
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/07/2023 13:39	215495
Boron	NELAP	0.0250	S	**6.44**	mg/L	5	12/07/2023 13:39	215495
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/07/2023 13:39	215495
Calcium	NELAP	0.125	S	**91.9**	mg/L	5	12/07/2023 13:39	215495
Chromium	NELAP	0.0015	S	**< 0.0015**	mg/L	5	12/08/2023 12:09	215495
Cobalt	NELAP	0.0010	S	**< 0.0010**	mg/L	5	12/12/2023 11:53	215495
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/07/2023 13:39	215495
Lithium	*	0.0030		**0.0343**	mg/L	5	12/07/2023 13:39	215495
Molybdenum	NELAP	0.0015		**0.192**	mg/L	5	12/07/2023 13:39	215495
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/07/2023 13:39	215495
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/07/2023 13:39	215495
Matrix spike did not recover within control limits due to sample composition.								
Matrix spike control limits are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:45	215460
Arsenic	NELAP	0.0010		**0.0031**	mg/L	5	12/05/2023 22:53	215460
Barium	NELAP	0.0010		**0.158**	mg/L	5	12/05/2023 22:53	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:53	215460
Boron	NELAP	0.0250		**6.77**	mg/L	5	12/05/2023 22:53	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:53	215460
Calcium	NELAP	0.125		**134**	mg/L	5	12/12/2023 10:39	215460
Chromium	NELAP	0.0015		**0.0023**	mg/L	5	12/12/2023 10:39	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/12/2023 10:39	215460
Lead	NELAP	0.0010		**0.0014**	mg/L	5	12/05/2023 22:53	215460
Lithium	*	0.0030		**0.0371**	mg/L	5	12/05/2023 22:53	215460
Molybdenum	NELAP	0.0015		**0.215**	mg/L	5	12/07/2023 15:05	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/12/2023 10:39	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:53	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:47	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-014 **Client Sample ID:** DUP-02-WG-20231129

Matrix: GROUNDWATER **Collection Date:** 11/29/2023 0:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**376**	mg/L	1	11/30/2023 10:41	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**35**	mg/L	1	12/01/2023 23:34	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**7.45**		1	11/30/2023 15:46	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.21**	mg/L	1	11/30/2023 11:06	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	12/01/2023 23:34	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 9:56	215495
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	12/05/2023 19:48	215495
Barium	NELAP	0.0010		**0.108**	mg/L	5	12/05/2023 19:48	215495
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:48	215495
Boron	NELAP	0.0250		**0.166**	mg/L	5	12/05/2023 19:48	215495
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:48	215495
Calcium	NELAP	0.125		**73.6**	mg/L	5	12/07/2023 12:57	215495
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/05/2023 19:48	215495
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:48	215495
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:48	215495
Lithium	*	0.0030		**0.0120**	mg/L	5	12/05/2023 19:48	215495
Molybdenum	NELAP	0.0015		**0.0146**	mg/L	5	12/07/2023 12:57	215495
Selenium	NELAP	0.0010		**0.0159**	mg/L	5	12/05/2023 19:48	215495
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 19:48	215495
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:49	215460
Arsenic	NELAP	0.0010		**0.0028**	mg/L	5	12/05/2023 22:59	215460
Barium	NELAP	0.0010		**0.143**	mg/L	5	12/05/2023 22:59	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:59	215460
Boron	NELAP	0.0250		**0.221**	mg/L	5	12/05/2023 22:59	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:59	215460
Calcium	NELAP	0.125		**111**	mg/L	5	12/12/2023 10:43	215460
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/12/2023 10:43	215460
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/12/2023 10:43	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 22:59	215460
Lithium	*	0.0030		**0.0163**	mg/L	5	12/05/2023 22:59	215460
Molybdenum	NELAP	0.0015		**0.0171**	mg/L	5	12/07/2023 16:43	215460
Selenium	NELAP	0.0010		**0.0194**	mg/L	5	12/07/2023 16:43	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 22:59	215460
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:49	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Lab ID: 23112078-015 **Client Sample ID:** EB-01-WQ-20231127

Matrix: GROUNDWATER **Collection Date:** 11/27/2023 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**< 20**	mg/L	1	11/30/2023 10:30	R339971
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	12/01/2023 23:42	R340009
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	**5.15**		1	11/30/2023 15:52	R339913
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	11/30/2023 11:09	R339841
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	12/01/2023 23:42	R340022
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0012**	mg/L	5	12/11/2023 10:25	215495
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	12/05/2023 19:54	215495
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Calcium	NELAP	0.125		**< 0.125**	mg/L	5	12/07/2023 13:03	215495
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	12/05/2023 19:54	215495
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Lithium	*	0.0030		**< 0.0030**	mg/L	5	12/05/2023 19:54	215495
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/07/2023 13:03	215495
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/05/2023 19:54	215495
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/05/2023 19:54	215495
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	12/11/2023 11:53	215460
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 0:19	215460
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 0:19	215460
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 0:19	215460
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	12/06/2023 0:19	215460
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 0:19	215460
Calcium	NELAP	0.125	SR	**< 0.125**	mg/L	5	12/12/2023 10:58	215460
Chromium	NELAP	0.0015	SR	**< 0.0015**	mg/L	5	12/12/2023 10:58	215460
Cobalt	NELAP	0.0010	SR	**< 0.0010**	mg/L	5	12/12/2023 10:58	215460
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	12/06/2023 0:19	215460
Lithium	*	0.0030		**< 0.0030**	mg/L	5	12/06/2023 0:19	215460
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	12/07/2023 16:49	215460
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	12/07/2023 16:49	215460
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	12/06/2023 0:19	215460

RPD for MS/MSD was outside control limits.

Matrix spike recovered outside upper control limits. Sample results are below the reporting limit. Data is reportable.

SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	12/06/2023 12:51	215503
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236
Radium-228	*	0		**See Attached**	pci/L	1	12/21/2023 14:33	R341236

Client: ERM
Client Project: 0599247

Work Order: 23112078
Report Date: 02-Jan-24

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
23112078-001	APW-03-WG-20231127	Groundwater	4	11/27/2023 14:10
23112078-002	APW-10D-WG-20231127	Groundwater	4	11/27/2023 15:30
23112078-003	APW-10S-WG-20231127	Groundwater	4	11/27/2023 16:35
23112078-004	APW-06S-WG-20231128	Groundwater	4	11/28/2023 9:00
23112078-005	APW-06D-WG-20231128	Groundwater	4	11/28/2023 10:35
23112078-006	APW-05R-WG-20231128	Groundwater	4	11/28/2023 12:05
23112078-007	APW-02-WG-20231128	Groundwater	4	11/28/2023 13:20
23112078-008	APW-07-WG-20231128	Groundwater	4	11/28/2023 15:10
23112078-009	APW-08-WG-20231128	Groundwater	4	11/28/2023 16:30
23112078-010	APW-04-WG-20231129	Groundwater	4	11/29/2023 8:30
23112078-011	APW-01R-WG-20231129	Groundwater	4	11/29/2023 10:00
23112078-012	APW-09-WG-20231129	Groundwater	4	11/29/2023 11:30
23112078-013	DUP-01-WG-20231128	Groundwater	4	11/28/2023 0:01
23112078-014	DUP-02-WG-20231129	Groundwater	4	11/29/2023 0:02
23112078-015	EB-01-WQ-20231127	Groundwater	4	11/27/2023 11:00

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23112078-001A	APW-03-WG-20231127	11/27/2023 14:10	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:29
	SW-846 9036 (Total)				12/01/2023 20:46
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:19
	SW-846 9214 (Total)				11/30/2023 10:13
	SW-846 9251 (Total)				12/01/2023 20:36
23112078-001B	APW-03-WG-20231127	11/27/2023 14:10	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-001C	APW-03-WG-20231127	11/27/2023 14:10	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:02
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 13:09
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 12:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:29
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:09
23112078-001D	APW-03-WG-20231127	11/27/2023 14:10	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/05/2023 19:36
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/07/2023 11:49
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/08/2023 11:38
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/11/2023 9:48
23112078-002A	APW-10D-WG-20231127	11/27/2023 15:30	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:29
	SW-846 9036 (Total)				12/01/2023 20:57
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:21
	SW-846 9214 (Total)				11/30/2023 10:16
	SW-846 9251 (Total)				12/01/2023 20:57
23112078-002B	APW-10D-WG-20231127	11/27/2023 15:30	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-002C	APW-10D-WG-20231127	11/27/2023 15:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 13:15
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 12:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:33
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:11
23112078-002D	APW-10D-WG-20231127	11/27/2023 15:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 18:20
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 11:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 9:58

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23112078-003A	APW-10S-WG-20231127	11/27/2023 16:35	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:30
	SW-846 9036 (Total)				12/01/2023 21:22
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:22
	SW-846 9214 (Total)				11/30/2023 10:19
	SW-846 9251 (Total)				12/01/2023 21:21
23112078-003B	APW-10S-WG-20231127	11/27/2023 16:35	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-003C	APW-10S-WG-20231127	11/27/2023 16:35	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 15:11
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:36
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:35
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:13
23112078-003D	APW-10S-WG-20231127	11/27/2023 16:35	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 18:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 11:57
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:04
23112078-004A	APW-06S-WG-20231128	11/28/2023 9:00	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:30
	SW-846 9036 (Total)				12/01/2023 21:34
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:24
	SW-846 9214 (Total)				11/30/2023 10:22
	SW-846 9251 (Total)				12/01/2023 21:29
23112078-004B	APW-06S-WG-20231128	11/28/2023 9:00	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-004C	APW-06S-WG-20231128	11/28/2023 9:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:14
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 13:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 12:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:00
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:16
23112078-004D	APW-06S-WG-20231128	11/28/2023 9:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 18:32
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 12:02

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:10
23112078-005A	APW-06D-WG-20231128	11/28/2023 10:35	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:31
	SW-846 9036 (Total)				12/01/2023 21:42
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:26
	SW-846 9214 (Total)				11/30/2023 10:24
	SW-846 9251 (Total)				12/01/2023 21:37
23112078-005B	APW-06D-WG-20231128	11/28/2023 10:35	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-005C	APW-06D-WG-20231128	11/28/2023 10:35	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 13:27
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:06
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:05
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:18
23112078-005D	APW-06D-WG-20231128	11/28/2023 10:35	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 18:38
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 12:07
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:16
23112078-006A	APW-05R-WG-20231128	11/28/2023 12:05	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:31
	SW-846 9036 (Total)				12/01/2023 21:50
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:27
	SW-846 9214 (Total)				11/30/2023 10:35
	SW-846 9251 (Total)				12/01/2023 21:45
23112078-006B	APW-05R-WG-20231128	11/28/2023 12:05	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-006C	APW-05R-WG-20231128	11/28/2023 12:05	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 21:27
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 13:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:12
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:10
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:20
23112078-006D	APW-05R-WG-20231128	11/28/2023 12:05	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 18:44

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 12:12
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:22
23112078-007A	APW-02-WG-20231128	11/28/2023 13:20	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:31
	SW-846 9036 (Total)				12/01/2023 21:58
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:29
	SW-846 9214 (Total)				11/30/2023 10:37
	SW-846 9251 (Total)				12/01/2023 21:53
23112078-007B	APW-02-WG-20231128	11/28/2023 13:20	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-007C	APW-02-WG-20231128	11/28/2023 13:20	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:16
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 10:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:15
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:22
23112078-007D	APW-02-WG-20231128	11/28/2023 13:20	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 20:03
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 13:36
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 12:08
23112078-008A	APW-07-WG-20231128	11/28/2023 15:10	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:32
	SW-846 9036 (Total)				12/01/2023 22:17
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:32
	SW-846 9214 (Total)				11/30/2023 10:40
	SW-846 9251 (Total)				12/01/2023 22:17
23112078-008B	APW-07-WG-20231128	11/28/2023 15:10	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-008C	APW-07-WG-20231128	11/28/2023 15:10	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:34
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:20
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:35
23112078-008D	APW-07-WG-20231128	11/28/2023 15:10	11/29/2023 14:30		

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 19:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 12:17
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:28
23112078-009A	APW-08-WG-20231128	11/28/2023 16:30	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:32
	SW-846 9036 (Total)				12/01/2023 22:25
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:34
	SW-846 9214 (Total)				11/30/2023 10:43
	SW-846 9251 (Total)				12/01/2023 22:25
23112078-009B	APW-08-WG-20231128	11/28/2023 16:30	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-009C	APW-08-WG-20231128	11/28/2023 16:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 13:30
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:25
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:38
23112078-009D	APW-08-WG-20231128	11/28/2023 16:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 19:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 13:20
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:34
23112078-010A	APW-04-WG-20231129	11/29/2023 8:30	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:40
	SW-846 9036 (Total)				12/05/2023 12:03
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:36
	SW-846 9214 (Total)				11/30/2023 10:45
	SW-846 9251 (Total)				12/01/2023 22:36
23112078-010B	APW-04-WG-20231129	11/29/2023 8:30	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-010C	APW-04-WG-20231129	11/29/2023 8:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:47
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 14:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 9:30
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:40

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23112078-010D	APW-04-WG-20231129	11/29/2023 8:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 19:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 13:25
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 10:41
23112078-011A	APW-01R-WG-20231129	11/29/2023 10:00	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:41
	SW-846 9036 (Total)				12/05/2023 12:40
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:41
	SW-846 9214 (Total)				11/30/2023 10:47
	SW-846 9251 (Total)				12/01/2023 23:10
23112078-011B	APW-01R-WG-20231129	11/29/2023 10:00	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-011C	APW-01R-WG-20231129	11/29/2023 10:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 14:51
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 10:29
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:42
23112078-011D	APW-01R-WG-20231129	11/29/2023 10:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/04/2023 19:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/06/2023 13:31
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/01/2023 8:52	12/07/2023 12:01
23112078-012A	APW-09-WG-20231129	11/29/2023 11:30	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				12/01/2023 10:01
	SW-846 9036 (Total)				12/01/2023 23:18
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:43
	SW-846 9214 (Total)				11/30/2023 10:50
	SW-846 9251 (Total)				12/01/2023 23:18
23112078-012B	APW-09-WG-20231129	11/29/2023 11:30	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-012C	APW-09-WG-20231129	11/29/2023 11:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:47
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 14:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 14:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 10:34

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:45
23112078-012D	APW-09-WG-20231129	11/29/2023 11:30	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/05/2023 19:42
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/07/2023 11:55
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/08/2023 11:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/11/2023 9:52
23112078-013A	DUP-01-WG-20231128	11/28/2023 0:01	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:40
	SW-846 9036 (Total)				12/01/2023 23:32
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:45
	SW-846 9214 (Total)				11/30/2023 10:52
	SW-846 9251 (Total)				12/01/2023 23:26
23112078-013B	DUP-01-WG-20231128	11/28/2023 0:01	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-013C	DUP-01-WG-20231128	11/28/2023 0:01	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 15:05
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 15:04
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 10:39
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:47
23112078-013D	DUP-01-WG-20231128	11/28/2023 0:01	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/07/2023 13:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/08/2023 12:09
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/11/2023 10:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/12/2023 11:53
23112078-014A	DUP-02-WG-20231129	11/29/2023 0:02	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:41
	SW-846 9036 (Total)				12/01/2023 23:34
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:46
	SW-846 9214 (Total)				11/30/2023 11:06
	SW-846 9251 (Total)				12/01/2023 23:34
23112078-014B	DUP-02-WG-20231129	11/29/2023 0:02	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-014C	DUP-02-WG-20231129	11/29/2023 0:02	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/05/2023 22:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 16:43

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 15:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 10:43
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:49
23112078-014D	DUP-02-WG-20231129	11/29/2023 0:02	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/05/2023 19:48
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/07/2023 12:57
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/11/2023 9:56
23112078-015A	EB-01-WQ-20231127	11/27/2023 11:00	11/29/2023 14:30		
	Standard Methods 2540 C (Total) 1997, 2011				11/30/2023 10:30
	SW-846 9036 (Total)				12/01/2023 23:42
	SW-846 9040B, Laboratory Analyzed				11/30/2023 15:52
	SW-846 9214 (Total)				11/30/2023 11:09
	SW-846 9251 (Total)				12/01/2023 23:42
23112078-015B	EB-01-WQ-20231127	11/27/2023 11:00	11/29/2023 14:30		
	EPA 903.0/904.0, Radium 226/228				12/21/2023 14:33
23112078-015C	EB-01-WQ-20231127	11/27/2023 11:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/06/2023 0:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/07/2023 16:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/08/2023 15:10
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/11/2023 11:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			12/04/2023 10:16	12/12/2023 10:58
	SW-846 7470A (Total)			12/05/2023 8:14	12/06/2023 12:51
23112078-015D	EB-01-WQ-20231127	11/27/2023 11:00	11/29/2023 14:30		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/05/2023 19:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/07/2023 13:03
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			12/04/2023 17:50	12/11/2023 10:25

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R339971 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	11/30/2023

Batch R339971 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**990**	1000	0	99.0	90	110	11/30/2023

Batch R339971 **SampType:** DUP Units **mg/L** RPD Limit **10**
SampID: 23112078-012ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**350**				380.0	8.22	12/01/2023

SW-846 9036 (TOTAL)

Batch R340009 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	12/01/2023

Batch R340009 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	95.5	90	110	12/01/2023

Batch R340009 **SampType:** MS Units **mg/L**
SampID: 23112078-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		100		**316**	200.0	133.3	91.2	85	115	12/01/2023

Batch R340009 **SampType:** MSD Units **mg/L** RPD Limit **10**
SampID: 23112078-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		100		**319**	200.0	133.3	92.9	315.7	1.06	12/01/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 9036 (TOTAL)

Batch R340126 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	12/05/2023

Batch R340126 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	95.0	90	110	12/05/2023

Batch R340126 **SampType:** MS Units **mg/L**
SampID: 23112078-010AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20		**92**	40.00	53.68	94.8	85	115	12/05/2023

Batch R340126 **SampType:** MSD Units **mg/L** RPD Limit **10**
SampID: 23112078-010AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20		**92**	40.00	53.68	96.7	91.58	0.84	12/05/2023

SW-846 9040B, LABORATORY ANALYZED

Batch R339913 **SampType:** LCS Units
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Lab pH		1.00		**6.97**	7.000	0	99.6	99.29	100.7	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**
SampID: 23112078-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.20**				7.240	0.55	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**
SampID: 23112078-002ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.07**				7.080	0.14	11/30/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 9040B, LABORATORY ANALYZED

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-003ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.03**				7.010	0.28	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-004ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.14**				7.120	0.28	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.38**				7.360	0.27	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.32**				7.330	0.14	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-007ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.13**				7.110	0.28	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-008ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**6.85**				6.860	0.15	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.32**				7.270	0.69	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-010ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.33**				7.310	0.27	11/30/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 9040B, LABORATORY ANALYZED

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-011ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**6.58**				6.590	0.15	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-012ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.51**				7.500	0.13	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-013ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.33**				7.340	0.14	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-014ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**7.45**				7.450	0.00	11/30/2023

Batch R339913 **SampType:** DUP Units RPD Limit **10**

SampID: 23112078-015ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00	H	**5.16**				5.150	0.19	11/30/2023

SW-846 9214 (TOTAL)

Batch R339841 **SampType:** MBLK Units **mg/L**

SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0500	0	0	-100	100	11/29/2023

Batch R339841 **SampType:** LCS Units **mg/L**

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**1.00**	1.000	0	99.5	90	110	11/29/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 9214 (TOTAL)

Batch R339841 **SampType:** MS Units **mg/L**
SampID: 23112078-005AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.31**	2.000	0.2400	103.6	75	125	11/30/2023

Batch R339841 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23112078-005AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.38**	2.000	0.2400	107.2	2.311	3.11	11/30/2023

Batch R339841 **SampType:** MS Units **mg/L**
SampID: 23112078-013AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.50**	2.000	0.3540	107.4	75	125	11/30/2023

Batch R339841 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23112078-013AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.41**	2.000	0.3540	102.7	2.501	3.79	11/30/2023

SW-846 9251 (TOTAL)

Batch R340022 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	12/01/2023

Batch R340022 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	101.0	90	110	12/01/2023

Batch R340022 **SampType:** MS Units **mg/L**
SampID: 23112078-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**30**	20.00	11.15	93.3	85	115	12/01/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 9251 (TOTAL)

Batch R340022 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 23112078-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**30**	20.00	11.15	93.4	29.80	0.07	12/01/2023

Batch R340022 **SampType:** MS Units **mg/L**

SampID: 23112078-010AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**30**	20.00	10.55	95.6	85	115	12/01/2023

Batch R340022 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 23112078-010AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**30**	20.00	10.55	94.8	29.66	0.54	12/01/2023

Batch R340139 **SampType:** MBLK Units **mg/L**

SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	12/05/2023

Batch R340139 **SampType:** LCS Units **mg/L**

SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**21**	20.00	0	102.9	90	110	12/05/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 215379 **SampType:** MBLK Units **mg/L**

SampID: MBLK-215379

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/06/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/04/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	12/04/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	12/04/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	12/04/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/04/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	12/05/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	12/04/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/04/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/04/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	12/04/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	12/04/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/04/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	12/04/2023

Batch 215379 **SampType:** LCS Units **mg/L**

SampID: LCS-215379

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.438**	0.5000	0	87.6	80	120	12/06/2023
Arsenic		0.0010		**0.486**	0.5000	0	97.1	80	120	12/04/2023
Barium		0.0010		**1.89**	2.000	0	94.7	80	120	12/04/2023
Beryllium		0.0010		**0.0474**	0.0500	0	94.9	80	120	12/04/2023
Boron		0.0250		**0.456**	0.5000	0	91.3	80	120	12/04/2023
Cadmium		0.0010		**0.0466**	0.0500	0	93.1	80	120	12/04/2023
Calcium		0.125		**2.34**	2.500	0	93.8	80	120	12/07/2023
Chromium		0.0015		**0.188**	0.2000	0	93.8	80	120	12/04/2023
Cobalt		0.0010		**0.469**	0.5000	0	93.7	80	120	12/04/2023
Lead		0.0010		**0.487**	0.5000	0	97.4	80	120	12/04/2023
Lithium	*	0.0030		**0.476**	0.5000	0	95.2	80	120	12/04/2023
Molybdenum		0.0015		**0.441**	0.5000	0	88.3	80	120	12/04/2023
Selenium		0.0010		**0.471**	0.5000	0	94.3	80	120	12/04/2023
Thallium		0.0020		**0.233**	0.2500	0	93.3	80	120	12/04/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 215379 **SampType:** MS Units **mg/L**

SampID: 23112078-007DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.509**	0.5000	0	101.8	75	125	12/06/2023
Arsenic		0.0010		**0.504**	0.5000	0.01677	97.5	75	125	12/04/2023
Barium		0.0010		**2.04**	2.000	0.2048	91.6	75	125	12/04/2023
Beryllium		0.0010		**0.0470**	0.0500	0	93.9	75	125	12/04/2023
Boron		0.0250	S	**7.39**	0.5000	9.565	-435.1	75	125	12/04/2023
Cadmium		0.0010		**0.0459**	0.0500	0	91.7	75	125	12/04/2023
Calcium		0.125	S	**136**	2.500	121.4	570.3	75	125	12/07/2023
Chromium		0.0015		**0.185**	0.2000	0	92.6	75	125	12/04/2023
Cobalt		0.0010		**0.459**	0.5000	0.0001408	91.8	75	125	12/04/2023
Lead		0.0010		**0.461**	0.5000	0	92.2	75	125	12/04/2023
Lithium	*	0.0030		**0.502**	0.5000	0.05065	90.2	75	125	12/04/2023
Molybdenum		0.0015		**0.621**	0.5000	0.2053	83.1	75	125	12/04/2023
Selenium		0.0010		**0.464**	0.5000	0	92.8	75	125	12/04/2023
Thallium		0.0020		**0.222**	0.2500	0	88.9	75	125	12/04/2023

Batch 215379 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23112078-007DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.474**	0.5000	0	94.7	0.5091	7.22	12/06/2023
Arsenic		0.0010		**0.508**	0.5000	0.01677	98.3	0.5043	0.77	12/04/2023
Barium		0.0010		**2.04**	2.000	0.2048	91.9	2.037	0.26	12/04/2023
Beryllium		0.0010		**0.0472**	0.0500	0	94.3	0.04696	0.46	12/04/2023
Boron		0.0250	S	**7.48**	0.5000	9.565	-417.3	7.390	1.20	12/04/2023
Cadmium		0.0010		**0.0462**	0.0500	0	92.4	0.04587	0.76	12/04/2023
Calcium		0.125	S	**133**	2.500	121.4	467.7	135.6	1.91	12/07/2023
Chromium		0.0015		**0.183**	0.2000	0	91.6	0.1853	1.14	12/04/2023
Cobalt		0.0010		**0.455**	0.5000	0.0001408	91.0	0.4591	0.85	12/04/2023
Lead		0.0010		**0.462**	0.5000	0	92.4	0.4610	0.27	12/04/2023
Lithium	*	0.0030		**0.509**	0.5000	0.05065	91.7	0.5018	1.50	12/04/2023
Molybdenum		0.0015		**0.630**	0.5000	0.2053	84.9	0.6207	1.46	12/04/2023
Selenium		0.0010		**0.469**	0.5000	0	93.8	0.4641	1.01	12/04/2023
Thallium		0.0020		**0.227**	0.2500	0	90.8	0.2224	2.08	12/04/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 215495 **SampType:** MBLK Units **mg/L**

SampID: MBLK-215495

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/11/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/05/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	12/05/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	12/05/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	12/05/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/05/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	12/07/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	12/07/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/05/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/05/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	12/05/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	12/07/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/05/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	12/05/2023

Batch 215495 **SampType:** LCS Units **mg/L**

SampID: LCS-215495

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.504**	0.5000	0	100.8	80	120	12/11/2023
Arsenic		0.0010		**0.500**	0.5000	0	99.9	80	120	12/05/2023
Barium		0.0010		**1.93**	2.000	0	96.7	80	120	12/05/2023
Beryllium		0.0010		**0.0435**	0.0500	0	86.9	80	120	12/05/2023
Boron		0.0250		**0.411**	0.5000	0	82.3	80	120	12/05/2023
Cadmium		0.0010		**0.0458**	0.0500	0	91.6	80	120	12/05/2023
Calcium		0.125		**2.03**	2.500	0	81.1	80	120	12/07/2023
Chromium		0.0015		**0.180**	0.2000	0	90.0	80	120	12/08/2023
Cobalt		0.0010		**0.454**	0.5000	0	90.8	80	120	12/05/2023
Lead		0.0010		**0.475**	0.5000	0	95.1	80	120	12/05/2023
Lithium	*	0.0030		**0.430**	0.5000	0	86.0	80	120	12/05/2023
Molybdenum		0.0015		**0.425**	0.5000	0	85.1	80	120	12/07/2023
Selenium		0.0010		**0.471**	0.5000	0	94.2	80	120	12/05/2023
Thallium		0.0020		**0.231**	0.2500	0	92.2	80	120	12/05/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)

Batch 215495 **SampType:** MS Units **mg/L**

SampID: 23112078-013DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010	S	**< 0.0010**	0.5000	0	0	75	125	12/11/2023
Arsenic		0.0010		**0.487**	0.5000	0.001777	97.1	75	125	12/07/2023
Barium		0.0010		**2.01**	2.000	0.1265	94.1	75	125	12/07/2023
Beryllium		0.0010		**0.0487**	0.0500	0	97.4	75	125	12/07/2023
Boron		0.0250	S	**7.30**	0.5000	6.439	172.8	75	125	12/07/2023
Cadmium		0.0010		**0.0479**	0.0500	0	95.8	75	125	12/07/2023
Calcium		0.125	S	**100**	2.500	91.91	331.8	75	125	12/07/2023
Chromium		0.0015	S	**< 0.0015**	0.2000	0.0007115	-0.4	75	125	12/08/2023
Cobalt		0.0010	S	**< 0.0010**	0.5000	0	0	75	125	12/12/2023
Lead		0.0010		**0.486**	0.5000	0	97.1	75	125	12/07/2023
Lithium	*	0.0030		**0.549**	0.5000	0.03434	103.0	75	125	12/07/2023
Molybdenum		0.0015		**0.686**	0.5000	0.1916	98.9	75	125	12/07/2023
Selenium		0.0010		**0.481**	0.5000	0	96.3	75	125	12/07/2023
Thallium		0.0020		**0.237**	0.2500	0	94.9	75	125	12/07/2023

Batch 215495 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23112078-013DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010	S	**< 0.0010**	0.5000	0	0	0	0.00	12/11/2023
Arsenic		0.0010		**0.486**	0.5000	0.001777	96.9	0.4873	0.17	12/07/2023
Barium		0.0010		**1.97**	2.000	0.1265	92.4	2.008	1.71	12/07/2023
Beryllium		0.0010		**0.0473**	0.0500	0	94.7	0.04869	2.83	12/07/2023
Boron		0.0250	S	**7.24**	0.5000	6.439	160.2	7.304	0.87	12/07/2023
Cadmium		0.0010		**0.0469**	0.0500	0	93.7	0.04792	2.24	12/07/2023
Calcium		0.125	S	**99.5**	2.500	91.91	301.9	100.2	0.75	12/07/2023
Chromium		0.0015	S	**< 0.0015**	0.2000	0.0007115	-0.4	0	0.00	12/08/2023
Cobalt		0.0010	S	**< 0.0010**	0.5000	0	0	0	0.00	12/12/2023
Lead		0.0010		**0.474**	0.5000	0	94.8	0.4856	2.39	12/07/2023
Lithium	*	0.0030		**0.545**	0.5000	0.03434	102.2	0.5495	0.80	12/07/2023
Molybdenum		0.0015		**0.670**	0.5000	0.1916	95.6	0.6861	2.40	12/07/2023
Selenium		0.0010		**0.476**	0.5000	0	95.2	0.4814	1.13	12/07/2023
Thallium		0.0020		**0.229**	0.2500	0	91.8	0.2372	3.36	12/07/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 215460 **SampType:** MBLK Units **mg/L**

SampID: MBLK-215460

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/11/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	12/05/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	12/05/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	12/05/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	12/05/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/05/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	12/07/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	12/07/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	12/05/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/05/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	12/05/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	12/07/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	12/05/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	12/05/2023

Batch 215460 **SampType:** LCS Units **mg/L**

SampID: LCS-215460

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.596**	0.5000	0	119.3	80	120	12/11/2023
Arsenic		0.0010		**0.554**	0.5000	0	110.7	80	120	12/05/2023
Barium		0.0010		**2.12**	2.000	0	106.0	80	120	12/05/2023
Beryllium		0.0010		**0.0520**	0.0500	0	103.9	80	120	12/05/2023
Boron		0.0250		**0.495**	0.5000	0	99.0	80	120	12/05/2023
Cadmium		0.0010		**0.0519**	0.0500	0	103.7	80	120	12/05/2023
Calcium		0.125		**2.33**	2.500	0	93.3	80	120	12/07/2023
Chromium		0.0015		**0.198**	0.2000	0	99.0	80	120	12/08/2023
Cobalt		0.0010		**0.507**	0.5000	0	101.4	80	120	12/05/2023
Lead		0.0010		**0.547**	0.5000	0	109.3	80	120	12/05/2023
Lithium	*	0.0030		**0.525**	0.5000	0	104.9	80	120	12/05/2023
Molybdenum		0.0015		**0.480**	0.5000	0	95.9	80	120	12/07/2023
Selenium		0.0010		**0.519**	0.5000	0	103.8	80	120	12/05/2023
Thallium		0.0020		**0.256**	0.2500	0	102.5	80	120	12/05/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 215460 **SampType:** MS Units **mg/L**

SampID: 23112078-003CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.568**	0.5000	0	113.6	75	125	12/11/2023
Arsenic		0.0010		**0.746**	0.5000	0.2757	94.0	75	125	12/05/2023
Barium		0.0010		**2.98**	2.000	0.8042	109.0	75	125	12/05/2023
Beryllium		0.0010		**0.0508**	0.0500	0	101.6	75	125	12/05/2023
Boron		0.0250		**1.09**	0.5000	0.5548	107.3	75	125	12/07/2023
Cadmium		0.0010		**0.0512**	0.0500	0	102.4	75	125	12/05/2023
Calcium		0.125	S	**139**	2.500	128.5	431.9	75	125	12/07/2023
Chromium		0.0015		**0.233**	0.2000	0.001607	115.8	75	125	12/12/2023
Cobalt		0.0010		**0.484**	0.5000	0.001319	96.5	75	125	12/05/2023
Lead		0.0010		**0.511**	0.5000	0	102.3	75	125	12/05/2023
Lithium	*	0.0030		**0.516**	0.5000	0.04008	95.1	75	125	12/05/2023
Molybdenum		0.0015		**0.499**	0.5000	0.002064	99.4	75	125	12/07/2023
Selenium		0.0010		**0.509**	0.5000	0	101.8	75	125	12/05/2023
Thallium		0.0020		**0.242**	0.2500	0	96.7	75	125	12/05/2023

Batch 215460 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23112078-003CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.607**	0.5000	0	121.4	0.5681	6.61	12/11/2023
Arsenic		0.0010		**0.747**	0.5000	0.2757	94.3	0.7455	0.23	12/05/2023
Barium		0.0010		**2.91**	2.000	0.8042	105.5	2.984	2.37	12/05/2023
Beryllium		0.0010		**0.0489**	0.0500	0	97.7	0.05081	3.88	12/05/2023
Boron		0.0250		**1.11**	0.5000	0.5548	110.6	1.091	1.49	12/07/2023
Cadmium		0.0010		**0.0501**	0.0500	0	100.1	0.05119	2.20	12/05/2023
Calcium		0.125	S	**149**	2.500	128.5	817.6	139.3	6.69	12/07/2023
Chromium		0.0015		**0.240**	0.2000	0.001607	119.1	0.2333	2.73	12/12/2023
Cobalt		0.0010		**0.476**	0.5000	0.001319	95.0	0.4838	1.54	12/05/2023
Lead		0.0010		**0.507**	0.5000	0	101.3	0.5115	0.96	12/05/2023
Lithium	*	0.0030		**0.509**	0.5000	0.04008	93.8	0.5158	1.33	12/05/2023
Molybdenum		0.0015		**0.504**	0.5000	0.002064	100.3	0.4993	0.86	12/07/2023
Selenium		0.0010		**0.498**	0.5000	0	99.6	0.5090	2.15	12/05/2023
Thallium		0.0020		**0.238**	0.2500	0	95.3	0.2416	1.37	12/05/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 215460 **SampType:** MS Units **mg/L**

SampID: 23112078-015CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.571**	0.5000	0	114.1	75	125	12/11/2023
Arsenic		0.0010		**0.542**	0.5000	0	108.3	75	125	12/06/2023
Barium		0.0010		**2.14**	2.000	0	107.2	75	125	12/06/2023
Beryllium		0.0010		**0.0483**	0.0500	0	96.5	75	125	12/06/2023
Boron		0.0250		**0.460**	0.5000	0	92.0	75	125	12/06/2023
Cadmium		0.0010		**0.0515**	0.0500	0	103.1	75	125	12/06/2023
Calcium		0.125		**2.37**	2.500	0	94.8	75	125	12/12/2023
Chromium		0.0015		**0.203**	0.2000	0	101.5	75	125	12/12/2023
Cobalt		0.0010		**0.501**	0.5000	0	100.2	75	125	12/12/2023
Lead		0.0010		**0.535**	0.5000	0	106.9	75	125	12/06/2023
Lithium	*	0.0030		**0.485**	0.5000	0	97.0	75	125	12/06/2023
Molybdenum		0.0015		**0.476**	0.5000	0.0009545	95.0	75	125	12/07/2023
Selenium		0.0010		**0.511**	0.5000	0	102.2	75	125	12/07/2023
Thallium		0.0020		**0.247**	0.2500	0	98.6	75	125	12/06/2023

Batch 215460 **SampType:** MSD Units **mg/L** RPD Limit **20**

SampID: 23112078-015CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.572**	0.5000	0	114.4	0.5706	0.24	12/11/2023
Arsenic		0.0010		**0.522**	0.5000	0	104.3	0.5416	3.76	12/06/2023
Barium		0.0010		**2.02**	2.000	0	100.8	2.144	6.15	12/06/2023
Beryllium		0.0010		**0.0477**	0.0500	0	95.4	0.04826	1.23	12/06/2023
Boron		0.0250		**0.445**	0.5000	0	89.0	0.4602	3.40	12/06/2023
Cadmium		0.0010		**0.0497**	0.0500	0	99.4	0.05154	3.67	12/06/2023
Calcium		0.125	SR	**5.92**	2.500	0	236.7	2.371	85.58	12/12/2023
Chromium		0.0015	SR	**0.286**	0.2000	0	142.8	0.2031	33.79	12/12/2023
Cobalt		0.0010	SR	**0.708**	0.5000	0	141.6	0.5012	34.19	12/12/2023
Lead		0.0010		**0.505**	0.5000	0	100.9	0.5346	5.75	12/06/2023
Lithium	*	0.0030		**0.474**	0.5000	0	94.8	0.4851	2.32	12/06/2023
Molybdenum		0.0015		**0.484**	0.5000	0.0009545	96.5	0.4760	1.57	12/07/2023
Selenium		0.0010		**0.504**	0.5000	0	100.8	0.5109	1.40	12/07/2023
Thallium		0.0020		**0.238**	0.2500	0	95.1	0.2466	3.67	12/06/2023

Client: ERM **Work Order:** 23112078

Client Project: 0599247 **Report Date:** 02-Jan-24

SW-846 7470A (TOTAL)

Batch 215503 **SampType:** MBLK Units **mg/L**
SampID: MBLK-215503

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**< 0.00020**	0.0001	0	0	-100	100	12/06/2023

Batch 215503 **SampType:** LCS Units **mg/L**
SampID: LCS-215503

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00489**	0.0050	0	97.7	85	115	12/07/2023

Batch 215503 **SampType:** MS Units **mg/L**
SampID: 23112078-007CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00485**	0.0050	0	97.0	75	125	12/06/2023

Batch 215503 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 23112078-007CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00476**	0.0050	0	95.2	0.004851	1.90	12/06/2023

Receiving Check List

http://www.teklabinc.com/

Client: ERM
Client Project: 0599247

Work Order: 23112078
Report Date: 02-Jan-24

Carrier: Marshall Arendell

Received By: HAW

Completed by: Amber Dilallo
On: 29-Nov-23

Reviewed by: Ellie Hopkins
On: 29-Nov-23

Pages to follow: Chain of custody 2 Extra pages included 29

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C	3.0		
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐			
Chain of custody present?	Yes ☑	No ☐					
Chain of custody signed when relinquished and received?	Yes ☑	No ☐					
Chain of custody agrees with sample labels?	Yes ☑	No ☐					
Samples in proper container/bottle?	Yes ☑	No ☐					
Sample containers intact?	Yes ☑	No ☐					
Sufficient sample volume for indicated test?	Yes ☑	No ☐					
All samples received within holding time?	Yes ☐	No ☑					
Reported field parameters measured:	Field ☐	Lab ☑	NA ☐				
Sample analyses to be measured in the field and/or within 15 minutes of collection were analyzed in the lab as soon as practicable. These analyses include Chlorine (demand, free and/or residual), Carbon Dioxide, Dissolved Oxygen, Ferrous Iron, pH, and Sulfite.							
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐					
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.							
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑				
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑				
Water - pH acceptable upon receipt?	Yes ☐	No ☑	NA ☐				
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑				

Any No responses must be detailed below or on the COC.

pH strip #90719. - HW/amberdilallo - 11/29/2023 4:12:46 PM

Additional Nitric Acid (94769) was needed in APW-10D-WG-20231127 and APW-10S-WG-20231127 upon arrival at the laboratory. - HW/amberdilallo - 11/29/2023 4:12:48 PM

EB-01-WQ-20231127 was filtered and preserved with Nitric Acid (94769) for the dissolved parameters upon arrival at the laboratory. - amberdilallo - 11/29/2023 4:12:51 PM

CHAIN OF CUSTODY

pg. 1 of 2 Work order # 23112078

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	ERM
Address:	1968 Craig Road
City / State / Zip	St. Louis, MO 63146
Contact:	Clay Sansoucie
Phone:	(314) 952-2760
E-Mail:	clay.sansoucie@erm.com
Fax:	

Samples on: ~~ICE~~ BLUE ICE NO ICE 3.0 °C LTG#

Preserved in: LAB FIELD

FOR LAB USE ONLY

Lab Notes PW90719. Added HNU3 (947609) to APW-10D-WG-20231127 and APW-10S-WG-20231127. HW 11/29

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☐ No

Are these samples known to be hazardous? If yes, include details of the hazard. ☐ Yes ☐ No

Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section. ☐ Yes ☐ No

Client Comments:

Total Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se Tl and Hg

Dissolved Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se and Tl

SUB Ra226/228 to Summit-OH.

Project Name/Number: 0599247

Sample Collector's Name: Marshall Hrenko / Nolan Legg

Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ☐ 3 Day (50% Surcharge)

Billing Instructions: 0599247

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	MATRIX: Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	INDICATE ANALYSIS REQUESTED: Chloride	Dissolved Metals	Fluoride	pH	Ra226/228	Sulfate	TDS	Total Metals
23112078 001	APW-03-WG-20231127	11/27/23 1410	1	2		2										X	X	X	X	X	X	X	X	X
002	APW-10D-WG-20231127	11/27/23 1530	1	2		2																		
003	APW-10S-WG-20231127	11/27/23 1635	1	2		2																		
004	APW-06S-WG-20231128	11/28/23 0900	1	2		2																		
005	APW-06D-WG-20231128	11/28/23 1035	1	2		2																		
006	APW-05R-WG-20231128	11/28/23 1205	1	2		2																		
007	APW-02-WG-20231128	11/28/23 1320	1	2		2																		
008	APW-07-WG-20231128	11/28/23 1510	1	2		2																		
009	APW-08-WG-20231128	11/28/23 1630	1	2		2																		
010	APW-04-WG-20231129	11/29/23 0830	1	2		2																		

Relinquished By	Date/Time	Received By	Date/Time
	11/29/23 1430		11/29/23 1430

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 84755

HW 11/29

CHAIN OF CUSTODY

pg. 1 of 2 Work order # 23112078

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	ERM
Address:	1968 Craig Road
City / State / Zip	St. Louis, MO 63146
Contact:	Clay Sansoucie
Phone:	(314) 952-2760
E-Mail:	clay.sansoucie@erm.com
Fax:	

Samples on: ☒ ICE ☒ BLUE ICE ☒ NO ICE _____ °C LTG# _____

Preserved in: ☒ LAB ☒ FIELD

FOR LAB USE ONLY

Lab Notes

Client Comments:

Total Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se Tl and Hg

Dissolved Metals: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Se and Tl

SUB Ra226/228 to Summit-OH.

Are these samples known to be involved in litigation? If yes, a surcharge will apply ☐ Yes ☐ No

Are these samples known to be hazardous? If yes, include details of the hazard. ☐ Yes ☐ No

Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section. ☐ Yes ☐ No

Project Name/Number: 0599247

Sample Collector's Name: Marshall Arendell / Nolan Legg

Results Requested: ☒ Standard ☐ 1-2 Day (100% Surcharge) ☐ Other ____ ☐ 3 Day (50% Surcharge)

Billing Instructions: 0599247

MATRIX: Aqueous, Drinking Water, Soil, Sludge, Special Waste, Groundwater

 # and Type of Containers: UNPRES, HNO3, NaOH, H2SO4, HCL, MeOH, NaHSO4, OTHER

INDICATE ANALYSIS REQUESTED: Chloride, Dissolved Metals, Fluoride, pH, Ra226/228, Sulfate, TDS, Total Metals

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Chloride	Dissolved Metals	Fluoride	pH	Ra226/228	Sulfate	TDS	Total Metals
23112078-011	APW-01R-WG-20231129	11/29/23 1000	1	2		2										X	X	X	X	X	X	X	X	X
012	APW-04-WG-20231129	11/29/23 1130	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
013	DUP-01-WG-20231128	11/28/23 0001	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
014	DUP-02-WG-20231129	11/29/23 0002	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓	↓
015	EB-01-WQ-20231127	11/27/23 1100	1	1		2										↓	↓	↓	↓	↓	↓	↓	↓	↓

Relinquished By	Date/Time	Received By	Date/Time
	11/29/23 1430		11/29/23 1430

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 84755

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

December 29, 2023

Elizabeth Hurley
TEKLAB Inc,
5445 Horseshoe lake Road
Collinsville, IL 62234
TEL:
FAX:

RE: 23112078

Dear Elizabeth Hurley:

Order No.: 23120232

Summit Environmental Technologies, Inc. received 15 sample(s) on 12/4/2023 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 2943, Colorado, Connecticut PH-0108, Florida NELAC E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, ISO/IEC 17025:2017 119125 L22-544, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Maryland 339, Michigan 9988, Minnesota 1780279, Nevada OH009232020-1, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 2019-155, Oregon OH200001, Pennsylvania 68-01335, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-19-16, Utah OH009232020-12, Virginia VELAP 10381, West Virginia 9957C

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

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Website: http://www.settek.com

Case Narrative

WO#: **23120232**
Date: **12/29/2023**

CLIENT: TEKLAB Inc,
Project: 23112078

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Summit Environmental Technologies, In
3310 Win S
Cuyahoga Falls, Ohio 4422
TEL: (330) 253-8211 FAX: (330) 253-44&
Website: http://www.settek.co

Qualifiers and Acronyms

WO#: **23120232**
Date: **12/29/2023**

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*****	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

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Website: http://www.settek.com

Workorder Sample Summary

WO#: **23120232**
29-Dec-23

CLIENT: TEKLAB Inc,
Project: 23112078

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
23120232-001	23112078-001		11/27/2023 2:10:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-002	23112078-002		11/27/2023 3:30:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-003	23112078-003		11/27/2023 4:35:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-004	23112078-004		11/28/2023 9:00:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-005	23112078-005		11/28/2023 10:35:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-006	23112078-006		11/28/2023 12:05:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-007	23112078-007		11/28/2023 1:20:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-008	23112078-008		11/28/2023 3:10:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-009	23112078-009		11/28/2023 4:30:00 PM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-010	23112078-010		11/29/2023 8:30:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-011	23112078-011		11/29/2023 10:00:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-012	23112078-012		11/29/2023 11:30:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-013	23112078-013		11/28/2023 12:01:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-014	23112078-014		11/29/2023 12:02:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water
23120232-015	23112078-015		11/27/2023 11:00:00 AM	12/4/2023 12:05:00 PM	Non-Potable Water

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DATES REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23120232-001A	23112078-001	11/27/2023 2:10:00 PM	Non-Potable Water	Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-002A	23112078-002	11/27/2023 3:30:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-003A	23112078-003	11/27/2023 4:35:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-004A	23112078-004	11/28/2023 9:00:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-005A	23112078-005	11/28/2023 10:35:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-006A	23112078-006	11/28/2023 12:05:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-007A	23112078-007	11/28/2023 1:20:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-008A	23112078-008	11/28/2023 3:10:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM

Original

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DATES REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23120232-008A	23112078-008	11/28/2023 3:10:00 PM	Non-Potable Water	Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-009A	23112078-009	11/28/2023 4:30:00 PM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-010A	23112078-010	11/29/2023 8:30:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-011A	23112078-011	11/29/2023 10:00:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-012A	23112078-012	11/29/2023 11:30:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-013A	23112078-013	11/28/2023 12:01:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-014A	23112078-014	11/29/2023 12:02:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM
23120232-015A	23112078-015	11/27/2023 11:00:00 AM		Combined Radium (EPA903+904)			12/28/2023 8:38:11 AM
				Radium-226 (EPA 903.0)		12/18/2023 3:46:12 PM	12/22/2023 10:59:00 AM
				Radium-228 (EPA 904.0)		12/18/2023 3:46:12 PM	12/21/2023 2:33:00 PM

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/27/2023 2:10:00 PM

Project: 23112078

Lab ID: 23120232-001

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-001

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.77	2.00	U	pCi/L	± 0.630	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.11	1.00	U	pCi/L	± 0.0500	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.66	1.00	JQDR	pCi/L	± 0.580	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/27/2023 3:30:00 PM

Project: 23112078

Lab ID: 23120232-002

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-002

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.5	2.00	U	pCi/L	± 0.830	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.14	1.00	U	pCi/L	± 0.0600	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	1.36	1.00		pCi/L	± 0.770	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/27/2023 4:35:00 PM

Project: 23112078

Lab ID: 23120232-003

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-003

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.27	2.00	U	pCi/L	± 0.750	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.32	1.00	U	pCi/L	± 0.0900	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.95	1.00	J	pCi/L	± 0.660	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 9:00:00 AM

Project: 23112078

Lab ID: 23120232-004

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-004

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.38	2.00	U	pCi/L	± 0.560	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.09	1.00	U	pCi/L	± 0.0500	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.29	1.00	U	pCi/L	± 0.510	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 10:35:00 AM

Project: 23112078

Lab ID: 23120232-005

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-005

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.87	2.00	U	pCi/L	± 0.650	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.11	1.00	U	pCi/L	± 0.0500	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.76	1.00	J	pCi/L	± 0.600	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 12:05:00 PM

Project: 23112078

Lab ID: 23120232-006

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-006

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.88	2.00	U	pCi/L	± 0.630	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.15	1.00	U	pCi/L	± 0.0600	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.73	1.00	J	pCi/L	± 0.570	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

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WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 1:20:00 PM

Project: 23112078

Lab ID: 23120232-007

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-007

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.68	2.00	U	pCi/L	± 0.700	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.12	1.00	U	pCi/L	± 0.0600	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.56	1.00	U	pCi/L	± 0.640	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 3:10:00 PM

Project: 23112078

Lab ID: 23120232-008

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-008

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.61	2.00	U	pCi/L	± 0.630	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.16	1.00	U	pCi/L	± 0.0600	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.45	1.00	U	pCi/L	± 0.570	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 4:30:00 PM

Project: 23112078

Lab ID: 23120232-009

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-009

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.25	2.00	U	pCi/L	± 0.590	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.1	1.00	U	pCi/L	± 0.0500	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.15	1.00	U	pCi/L	± 0.540	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/29/2023 8:30:00 AM

Project: 23112078

Lab ID: 23120232-010

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-010

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.85	2.00	U	pCi/L	± 0.710	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.19	1.00	U	pCi/L	± 0.0700	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.66	1.00	J	pCi/L	± 0.640	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

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WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/29/2023 10:00:00 AM

Project: 23112078

Lab ID: 23120232-011

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-011

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	1.21	2.00	U	pCi/L	± 0.750	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.24	1.00	U	pCi/L	± 0.0800	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.97	1.00	J	pCi/L	± 0.670	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/29/2023 11:30:00 AM

Project: 23112078

Lab ID: 23120232-012

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-012

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.8	2.00	U	pCi/L	± 0.670	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0	1.00	U	pCi/L	± 0.0200	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.8	1.00	J	pCi/L	± 0.650	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/28/2023 12:01:00 AM

Project: 23112078

Lab ID: 23120232-013

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-013

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.8	2.00	U	pCi/L	± 0.710	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.05	1.00	U	pCi/L	± 0.0400	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.75	1.00	J	pCi/L	± 0.670	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

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WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/29/2023 12:02:00 AM

Project: 23112078

Lab ID: 23120232-014

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-014

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.23	2.00	U	pCi/L	± 0.690	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.03	1.00	U	pCi/L	± 0.0300	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.2	1.00	U	pCi/L	± 0.660	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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Analytical Report

(consolidated)

WO#: **23120232**

Date Reported: **12/29/2023**

CLIENT: TEKLAB Inc,

Collection Date: 11/27/2023 11:00:00 AM

Project: 23112078

Lab ID: 23120232-015

Matrix: NON-POTABLE WATER

Client Sample ID: 23112078-015

Analyses	Result	RL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228					**CALCULATION**		Analyst: **CXS**
COMBINED RADIUM (EPA903+904)							
Radium-226/Radium-228	0.45	2.00	U	pCi/L	± 0.540	1	12/28/2023 8:38:11 AM
RAD226/228					**E903.0**	**E903-904**	Analyst: **SMZ**
RADIUM-226 (EPA 903.0)							
Radium-226	0.01	1.00	U	pCi/L	± 0.0200	1	12/22/2023 10:59:00 A
Yield	1					1	12/22/2023 10:59:00 A
RAD226/228					**E904.0**	**E903-904**	Analyst: **SMZ**
RADIUM-228 (EPA 904.0)							
Radium-228	0.44	1.00	U	pCi/L	± 0.520	1	12/21/2023 2:33:00 PM
Yield	1					1	12/21/2023 2:33:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
ND	Not Detected	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as specified at testcode

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QC SUMMARY REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078 **BatchID:** **71448**

Sample ID: **23120232-001A DUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **12/18/2023** RunNo: **176918**
Client ID: **23112078-001** Batch ID: **71448** TestNo: **E904.0** **E903-904** Analysis Date: **12/21/2023** SeqNo: **4792114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.4	1.00		0	0			0.6600	200	30	RU
Yield	1			0	0			1.000	0		

Sample ID: **23120232-002A DUP** SampType: **DUP** TestCode: **Radium-228_** Units: **pCi/L** Prep Date: **12/18/2023** RunNo: **176918**
Client ID: **23112078-002** Batch ID: **71448** TestNo: **E904.0** **E903-904** Analysis Date: **12/21/2023** SeqNo: **4792115**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	1.03	1.00		0	0			1.360	27.6	30	
Yield	1			0	0			1.000	0		

Qualifiers:

H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area respons
ND	Not Detected	PL	Permit Limit	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as spe

Original

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QC SUMMARY REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078 **BatchID:** **71448**

Sample ID: **MB-71448**	SampType: **MBLK**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176918**
Client ID: **PBW**	Batch ID: **71448**	TestNo: **E904.0**	**E903-904**	Analysis Date: **12/21/2023**	SeqNo: **4792101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0						U
Yield	1.00			0	0						

Sample ID: **LCSD-71448**	SampType: **LCSD**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176918**
Client ID: **LCSS02**	Batch ID: **71448**	TestNo: **E904.0**	**E903-904**	Analysis Date: **12/21/2023**	SeqNo: **4792103**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.60	1.00	5.000	0	72.0	70	130	2.830	24.0	20	
Yield	0.990			0	0			1.000	1.01		

Sample ID: **RLCD-71448**	SampType: **RLC**	TestCode: **Radium-228_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176918**
Client ID: **BatchQC**	Batch ID: **71448**	TestNo: **E904.0**	**E903-904**	Analysis Date: **12/21/2023**	SeqNo: **4792106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	1.16	1.00	1.000	0	116	50	150				
Yield	1.00			0	0						

Qualifiers:

H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area respons
ND	Not Detected	PL	Permit Limit	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as spe

Original

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078 **BatchID:** **71448**

Sample ID: **MB-71448**	SampType: **MBLK**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **PBW**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00									U
Yield	1.00										

Sample ID: **LCS-71448**	SampType: **LCS**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **LCSW**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	4.35	1.00	5.000	0	87.0	70	130				

Sample ID: **LCSD-71448**	SampType: **LCSD**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **LCSS02**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.12	1.00	5.000	0	102	70	130	4.350	16.3	20	

Sample ID: **RLC-71448**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **BatchQC**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area respons
ND	Not Detected	PL	Permit Limit	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as spe

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Website: http://www.settek.com

QC SUMMARY REPORT

WO#: **23120232**

29-Dec-23

Client: TEKLAB Inc,
Project: 23112078 **BatchID:** **71448**

Sample ID: **RLC-71448**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **BatchQC**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.970	1.00	1.000	0	97.0	50	150				J

Sample ID: **RLCD-71448**	SampType: **RLC**	TestCode: **Radium-226_**	Units: **pCi/L**	Prep Date: **12/18/2023**	RunNo: **176923**
Client ID: **BatchQC**	Batch ID: **71448**	TestNo: **E903.0**	**E903-904**	Analysis Date: **12/22/2023**	SeqNo: **4792240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.13	1.00	1.000	0	113	50	150				

Qualifiers:

H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	M	Manual Integration used to determine area respons
ND	Not Detected	PL	Permit Limit	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	U	Samples with CalcVal < MDL	W	Sample container temperature is out of limit as spe

Original

23120232

TEKLAB, INC. Chain of Custody

Pg ___ of ___

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: ___ Sampler: Client QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) on your standard TAT.

Receipt summary requested.

Project#: 23112078

Contact: Elizabeth Hurley Email: ehurley@teklabinc.com
Requested Due Date: 20 business days or less Billing/PO: 35417 Phone: 618 344 1004 ext 33

State of Origin: IL

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium							pH		
	23112078-001	11/27/23 1410	HNO3	Groundwater	✔	✔	✔									22, 23
	23112078-002	11/27/23 1530	HNO3	Groundwater	✔	✔	✔									35, 38
	23112078-003	11/27/23 1635	HNO3	Groundwater	✔	✔	✔									23, 36
	23112078-004	11/28/23 0900	HNO3	Groundwater	✔	✔	✔									29, 31
	23112078-005	11/28/23 1035	HNO3	Groundwater	✔	✔	✔									31, 16
	23112078-006	11/28/23 1205	HNO3	Groundwater	✔	✔	✔									27, 29
	23112078-007	11/28/23 1320	HNO3	Groundwater	✔	✔	✔									16, 27
	23112078-008	11/28/23 1510	HNO3	Groundwater	✔	✔	✔									31, 23
	23112078-009	11/28/23 1630	HNO3	Groundwater	✔	✔	✔									18, 32
	23112078-010	11/29/23 0830	HNO3	Groundwater	✔	✔	✔									31, 34
	23112078-011	11/29/23 1000	HNO3	Groundwater	✔	✔	✔									27, 43

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	11/30/23 1700		
		[signature]	12-4-23 / 1205

13.1, 13.0, 13.5, 14.1 / coolers / FedEx

SubCocRevA
3/2/2016

3.3, 13.2, 12.7, 14.3 - 0.2 cf

Pg 23120232

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: | Sampler: Client | QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) on your standard TAT.
Receipt summary requested.

Project# 23112078

Contact: Elizabeth Hurley | Email: ehurley@teklabinc.com
Requested Due Date: 20 business days or less | Billing/PO: 35417
Phone: 618 344 1004 ext 33

State of Origin: IL

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium											
	23112078-012	11/29/23 1130	HNO3	Groundwater	✔	✔	✔								1			7,23
	23112078-013	11/28/23 0001	HNO3	Groundwater	✔	✔	✔								1			11, 14
	23112078-014	11/29/23 0002	HNO3	Groundwater	✔	✔	✔								1			4321
	23112078-015	11/27/23 1100	HNO3	Groundwater	✔	✔	✔								1			21,21
			HNO3	Groundwater														
			HNO3	Groundwater														
			HNO3	Groundwater														
			HNO3	Groundwater														
			HNO3	Groundwater														
			HNO3	Groundwater														
			HNO3	Groundwater														

pH CPM

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	11/30/23 1700		
		[signature]	12-4-23/1205

Teklab maintains a strict policy of client confidentiality and as such does not provide client/sampler information without proper authorization. and proprietary rights, Teklab, Inc. protects clients' confidential information as directed by local, state or federal laws. (Teklab QAM Section 9.1, TNI V1 M2 Section 4.1.5 c)

SubCocRevA
3/2/2016

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Sample Log-In Check List

Client Name: TEK-IL-62234-A Work Order Number: 23120232 RcptNo: 1

Logged by:	Jacqueline Rasile	12/4/2023 12:05:00 PM	Jackie Rasile
Completed By:	Jacqueline Rasile	12/5/2023 1:21:38 PM	Jackie Rasile
Reviewed By:	Jennifer Woolf	12/5/2023 4:15:42 PM	Jennifer Woolf

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
	No. Seal Date:	Signed By:		
5.	Was an attempt made to cool the samples?	Yes ☐	No ☐	NA ☑
6.	Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☐	NA ☑
7.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
8.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
9.	Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
10.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
11.	Is the headspace in the VOA vials less than 1/4 inch or 6 mm?	Yes ☐	No ☐	No VOA Vials ☑
12.	Were any sample containers received broken?	Yes ☐	No ☑	
13.	Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
14.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
15.	Is it clear what analyses were requested?	Yes ☑	No ☐	
16.	Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	13.1	Good	Not Present			

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Sample Log-In Check List

Client Name: TEK-IL-62234-A Work Order Number: 23120232 RcptNo: 1

Cooler No	Temp ºC	Condition	Seal Intact	Seal No	Seal Date	Signed By
2	13.0	Good	Not Present			
3	13.5	Good	Not Present			
4	14.1	Good	Not Present			