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08/01/2023

Illinois Environmental Protection Agency
BOW-Permits #15-CCR Coordinator
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Subject: Fourth Post-Closure Groundwater Monitoring Report
First Quarter 2023
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 first quarter 2023 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the "Site"). The first quarter groundwater sampling event took place between 30 January and 2 February, 2023, and the impoundment inspection event was conducted on 3 March, 2023. A Site location map is provided in Figure 1.

The first 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 and further modified according to 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 ash basin, which was capped and closed in 2020. The quarterly results include a summary of field activities, laboratory analytical, and associated activity related to the first quarter. It should be noted that this is the fourth post-closure sampling event and that a sufficient amount of monitoring data still does not exist to provide an accurate evaluation of post-closure data trends and whether a statistically significant increase or decrease in the data trends exist during the current five-year post-closure monitoring period.

Quarterly site activities, performed in accordance with the proposed post-closure groundwater monitoring program, the results of which are summarized below, include:

- Inspection of the final cover system of the CCR impoundment;
- Inspection of the groundwater monitoring well array;
- Groundwater monitoring; and
- Abandonment, redrill, and development of APW-05/APW-05R.

QUARTERLY CCR IMPOUNDMENT INSPECTION

During the first 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. Similar to the fourth quarter of 2022, growth of a limited but increased amount of woody vegetation (up to 1”diameter) since the third quarter 2022 inspection when it was initially observed continued to be noted within the riprap on the north, west, and southern impoundment cap faces. No significant degradation or issues were noted associated with the CCR impoundment cover system.

QUARTERLY MONITORING WELL INSPECTION AND GAUGING

During the first 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 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 first quarter of 2023. The groundwater gradient is primarily from east to west towards the Mississippi River except for 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, groundwater elevations at each monitoring well, and the Mississippi River elevation for the first quarter of 2023. During the first quarter of 2023 inspection and sampling event, the well screen of monitoring well APW-05 was still found to be occluded > 40% due to infiltration of filter pack sand into the well casing from a compromised well screen. As described in a subsequent section within the body of this report, APW-05 was abandoned per Illinois Department of Public Health (IDPH) regulations, and a new well, APW-05R was drilled by Bulldog Drilling of Dupo, IL, an Illinois licensed well driller.

QUARTERLY GROUNDWATER MONITORING

Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations at the Site utilizing data from background wells APW-1R and APW-09. The final Groundwater Protection Standards (GPS) are the higher of the values between those provided in 35 IAC §845.600(a) and the calculated background concentrations. Assessment of corrective measures began on 16 June 16, 2022 with the commencement of the initial post-closure groundwater sampling event.

During the first quarter 2023 sampling event, 12 monitoring wells (APW-01R, APW-02, APW-03, APW-04, APW-05, 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 Professional Plus 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 first 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 groundwater protection standards 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 first quarter 2023 are presented in Table 1. During the first quarter 2023 sampling event, the following analytes were detected in the listed wells above the GPS:

- Sulfate: APW-02.
- Arsenic: APW-02, APW-06D, APW-10S.
- Boron: APW-02, APW-03, APW-05, APW-06D, APW-06S.
- Calcium: APW-02, APW-03, APW-05, APW-06D, APW-07, APW-10D, APW-10S.
- Turbidity: APW-01R, APW-02, APW-03, APW-04, APW-06D, APW-07, APW-08, APW-09, APW-10D, APW-10S.
- Lithium: APW-02, APW-05, APW-06S.
- Molybdenum: APW-02, APW-05, APW-06S.

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-10S do not exhibit arsenic concentration above the GPS.

The GTEC CCR impoundment is currently in Corrective Action Monitoring (CAM). After seven 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 seven CAM groundwater sampling events is anticipated to be completed during the first quarter 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 COCs.

ABANDONMENT, REDRILL, AND DEVELOPMENT OF APW-05

Between 6 February and 7 February 2023, APW-05 was abandoned per IDPH regulations, and a new well, APW-05R was drilled by Bulldog Drilling of Dupo, IL, an Illinois licensed well driller. APW-05R was subsequently developed according to USEPA guidelines. Copies of the IDPH abandonment log for APW-05, the well construction log for APW-05R, and the well development log for APW-05R are included as Appendix E.

SUMMARY AND CONCLUSIONS

Based upon the results of the first quarter 2023 groundwater sampling event, well inspection, CCR impoundment inspection, and redrill of APW-05, 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, as well as the second, third, and fourth quarter sampling events of 2022, concentrations of arsenic and sulfate 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. Based upon a Mann-Kendall analysis incorporating data from the eight rounds of pre-closure groundwater sampling conducted during 2017 and 2018, as well as the second, third, and fourth quarter 2022 groundwater monitoring events, boron continues to demonstrate a decreasing trend at APW-04 and APW-05.

- APW-05 was abandoned and re-drilled by an Illinois licensed well driller during the first quarter of 2023 due to damage to the well screen, which had allowed the sand pack to enter the monitoring well.
- Growth of a limited but increased amount of woody vegetation (up to 1”diameter) since the third quarter 2022 continued to be observed within the riprap on the north, west, and southern impoundment cap faces. No significant degradation or issues were noted associated with the CCR impoundment cover system.

If you have any questions, please contact me at (314) 733-4495.

Sincerely,

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

Matt Halley, CHMM
Senior Consultant

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

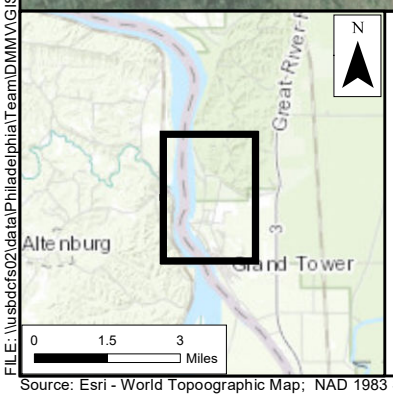
Mississippi River

Grand Tower

Bone Rd
Fountain Bluff
Power Plant Rd
Finger Rd
Perry St
2nd St
1st St
3rd Ave
5th Ave
4th Ave
25th Ave
22nd St
21st St
20th St
Trammel Ln
Brunkhorst Ave
County Road 460
Ford St
Park Rd
Walker Ln
Railroad St
2nd St
Market St
Wills Dr
Main St

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\PhiladelphiaTeam\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: S. Vickery

FILE: \\usbdcfs02\data\PhiladelphiaTeam\DMMV\GIS\Projects\Grand Tower Energy Center_MXD\Groundwater\FIGUREX-GWC_JANUARY2023_20230316.mxd | REVISED: 04/13/2023 | SCALE: 1:3,400 when printed at 11x17

Power Plant Rd

N

APW-1R
333.02

333

APW-05
332.47

APW-02
331.42

331.6

331.8

332

332.2

332.4

APW-04
332.69

332.8

APW-06S
332.73

APW-06D
332.7

332.6

APW-03
332.84

332.8

APW-09
332.75

APW-07
332.59

APW-08
332.76

Mississippi River

332.4

*Mississippi River
Elevation = 332.97

APW-10D
332.69

APW-10S
332.39

0 230 460 Feet

25th Ave

0 0.45 0.9 Miles

Legend

- Monitoring Well Location
- Groundwater Contour (0.2 Ft. Interval)
- Inferred Groundwater Contour (0.2 Ft. Interval)
- 348.37 Groundwater Elevation

Notes:
1. CCR Surface Impoundment Closed Prior to July 31, 2021
2. Date of gauging January 30, 2023
3. Ft AMSL - Feet Above Mean Sea Level
4. (D) - Desiginated Wells not used in contoruing
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. World Imagery (3/24/2021)

Figure 2
Groundwater Contours
January 2023
Grand Tower Energy Center, LLC
Grand Tower, Ilinois
Jackson County

Environmental Resources Management
www.erm.com

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

TABLES

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling			
			Sample ID	APW-1R-20170907	APW-1R-20170927	APW-1R-20171018	APW-1R-20171108	APW-1R-20171127	APW-1R-20171228	APW-1R-20180117	APW-1R-20180207	APW-1R-WG-20220615	APW-01R-WG-20220915	APW-01R-WG-20221130	APW-01R-WG-20230202
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
UNSPECIFIED															
Fluoride	NA	mg/L	4	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.16	0.21	0.15	0.18	0.17
Radium-226	NA	pCi/L	NS	0.25 ± .12 U	0.18 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	-0.07 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	-0.04 ± 0.08 U	0.0323 ± 0.141 U	0.24 ± 0.1 U	0.4 ± 0.12 U	0.16 ± 0.169 J
Radium-228	NA	pCi/L	NS	2.29 ± .98	0.51 ± .39 U	0.12 ± .332	0.57 ± 0.33 U	0.47 ± 0.54 U	0.04 ± 0.34 U	0.98 ± 0.62 J	0.22 ± 0.34 U	0.661 ± 0.257	0.43 ± 0.49 UQM-	0.41 ± 0.56 U	0.531 ± 0.284
Sulfate	NA	mg/L	400	41	65	65	54	58	88	78	79	33	73 S	69	74
CALC															
Radium-226/228	NA	pCi/L	7.002									0.693 ± 0.293	0.67 ± 0.59 U	0.81 ± 0.68 U	0.691 ± 0.330
FIELD PARAM															
Turbidity, Field	NA	NTU	17.96[1]									33.9	31.7	31.7	89.5
GEN CHEM															
Chloride	NA	mg/L	200	5 U	5 U	5 U	5 U	5 U	9	11	10	2	7	7	7
Dissolved Solids, Total	NA	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384
pH, Lab	NA	pH units	6.22-9.0[2]	6.64	6.54	6.6	6.8	7.11	6.96	7.09	6.52	6.98	6.91	6.43	6.57
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001
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
Barium	D	mg/L	2									0.16	0.153	0.162 B	0.155
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									0.163	0.244	0.219	0.205
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2									85.6	83.8 S	73.9	71.4
Calcium	T	mg/L	103.2	84.3 S	93 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4	79.7	75.5 S
Chromium	D	mg/L	0.1									0.0009 J	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
Cobalt	D	mg/L	0.006									0.0002 J	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	0.0017	0.0017	0.0031	0.0013
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
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
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135
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
Manganese	T	mg/L	NS									0.139			
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
Molybdenum	D	mg/L	0.1									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
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
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
Thallium	D	mg/L	0.002									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

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and
Highlighted values exceed action level
NS = No standard

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

				Sampled prior to closure of CCR Impoundment								Post-Closure Sampling						
			Sample ID	APW-2-20170907	APW-2-20170927	APW-2-20171020	APW-2-20171109	APW-2-20171129	APW-2-20171227	APW-2-20180119	APW-2-20180207	APW-02-WG-20220616	APW-02-WG-20220914	DUP-002-WG-20220914	APW-02-WG-20221129	DUP-02-WG-20221129	APW-02-WG-20230201	DUP-02-WG-20230201
			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
			Sample Date	09/06/2017	09/28/2017	10/20/2017	11/09/2017	11/29/2017	12/27/2017	01/19/2018	02/07/2018	06/16/2022	09/14/2022	09/14/2022	11/29/2022	11/29/2022	02/01/2023	02/01/2023
			Sample Type	N	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]															
UNSPECIFIED																		
Fluoride	NA	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
Radium-226	NA	pCi/L	NS	1.06 ± 0.21	0.03 ± 0.1 U	-0.132 ± 0.410	1.47 ± 0.26		0.33 ± 0.12 U	0.47 ± 0.15 U	0.97 ± 0.23 J	0.159 ± 0.181 J	0.27 ± 0.1 UQDR	0.14 ± 0.07 U	0.5 ± 0.14 U	0.35 ± 0.12 U	0.0737 ± 0.256 U	0.175 ± 0.279 J
Radium-228	NA	pCi/L	NS	1.98 ± 0.95	-0.01 ± 0.6 U	0.504 ± 0.378	0.91 ± 0.36 J		0.95 ± 0.52 J	1.08 ± 0.59	0.99 ± 0.5 J	0.308 ± 0.236 J3U	0.4 ± 0.48 UQDR	2.81 ± 1.03	0.24 ± 0.44 U	0.27 ± 0.55 U	1.07 ± 0.466	0.981 ± 0.290
Sulfate	NA	mg/L	400	462	460	472 S	479	472	426	443	416	496	491	490	418	438	459	455
CALC																		
Radium-226/228	NA	pCi/L	7.002									0.467 ± 0.297 J	0.67 ± 0.58 U	2.95 ± 1.1	0.74 ± 0.58 U	0.62 ± 0.67 U	1.14 ± 0.532	1.16 ± 0.402
FIELD PARAM																		
Turbidity, Field	NA	NTU	17.96[1]									38	19.2		132		93.6	
GEN CHEM																		
Chloride	NA	mg/L	200	13	12	11	11	12	12	12	12	9	11	10	9	9	10	10
Dissolved Solids, Total	NA	mg/L	1200	858	880	934	916	870	848	836	888	930	890 H	905 H	885	855	852	866
pH, Lab	NA	pH units	6.22-9.0[2]	7.09	7.05	7.08	7.07	7.05	7.14	7.06	6.96	7.21	7.32	7.25	7.01	7.02	6.98	7.05
METALS																		
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0021	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0117	0.0048	0.0049	0.0012	0.0187	0.016	0.0138
Arsenic	T	mg/L	0.01	0.0199	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
Barium	D	mg/L	2									0.154	0.123	0.135	0.125 B	0.148 B	0.187	0.154
Barium	T	mg/L	2	0.479	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
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	0.0011	0.002 U	0.001 U	0.001 U	0.001 SU	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									8.17	7.49 S	7.9	0.656	6.63	8.21	7.39
Boron	T	mg/L	2	8.16	8.73	8.94 S	9	8.98	8.39	8.19	8.24	8.13	9.43	8.72	8.97 S	7.69	7.75	8.32 S
Cadmium	D	mg/L	0.005									0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2[1]									175	136 S	165	96.1	129	108	144
Calcium	T	mg/L	103.2[1]	148	145	171 S	157	158	135	134	175	189	198	178	145 S	149	144	149 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0374	0.0455	0.0503	0.0235	0.014	0.0566	0.127	0.112	0.0254	0.0148	0.0066	0.0064	0.0054	0.0052	0.0022
Cobalt	D	mg/L	0.006									0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0057	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
Iron	T	mg/L	NS									11.7						
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.0115	0.0054	0.0201	0.0096	0.0075	0.0031	0.0048	0.0239	0.0022	0.0119	0.0033	0.0033	0.0034	0.0027	0.0023
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387
Lithium	T	mg/L	0.04	0.05	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
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
Molybdenum	D	mg/L	0.1									0.201	0.139	0.156	0.0337	0.145	0.151	0.155
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131	0.24	0.174	0.174	0.128	0.119	0.165	0.16
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
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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-
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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
UNSPECIFIED															
Fluoride	NA	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34	0.26	0.2	0.26	0.23
Radium-226	NA	pCi/L	NS	0.53 ± .18 U	0.04 ± 0.09 U	0.409 ± 0.426	0.18 ± 0.11 U	0.33 ± 0.17 U	0.2 ± 0.1 U	0.1 ± 0.1 U	0.31 ± 0.15 U	0.201 ± 0.155	0.56 ± 0.13 U	0.19 ± 0.1 U	0.293 ± 0.212
Radium-228	NA	pCi/L	NS	2.05 ± .96	1.01 ± 0.57	0.492 ± 0.373	0.72 ± 0.37 J	0.31 ± 0.49 U	0.37 ± 0.44 U	1.32 ± 0.68	0.06 ± 0.36 U	1.89 ± 0.26 J3	0.4 ± 0.5 UQDR	0.67 ± 0.59 U	0.119 ± 0.430 U
Sulfate	NA	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322
CALC															
Radium-226/228	NA	pCi/L	7.002									2.09 ± 0.303	0.96 ± 0.63 U	0.86 ± 0.69 U	0.412 ± 0.479 J
FIELD PARAM															
Turbidity, Field	NA	NTU	17.96[1]									40.3	56.1	103	50.7
GEN CHEM															
Chloride	NA	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21
Dissolved Solids, Total	NA	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524
pH, Lab	NA	pH units	6.22-9.0[2]	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78	7.85	7.46	7.21	7.45
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0015	0.0014	0.0024	0.002
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
Barium	D	mg/L	2									0.139	0.124	0.108 B	0.139
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									4.23	1.49	2.99	4.98
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									174	125	101	121
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
Chromium	D	mg/L	0.1									0.0011 J	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
Cobalt	D	mg/L	0.006									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
Iron	T	mg/L	NS									1.66			
Lead	D	mg/L	0.0075									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
Lithium	D	mg/L	0.04									0.0338	0.0288	0.0266	0.0275
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
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
Molybdenum	D	mg/L	0.1									0.057	0.0342	0.0648	0.0521
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
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
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
Thallium	D	mg/L	0.002									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

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
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J = Analyte detected below quantitation limits
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S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
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*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
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Highlighted values exceed action level
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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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
UNSPECIFIED															
Fluoride	NA	mg/L	4	0.18	0.19	0.18	0.17	0.18	0.17	0.17	0.16	0.2	0.17	0.17	0.15
Radium-226	NA	pCi/L	NS	0.38 ± 0.16 U	0.02 ± 0.08 U	-0.272 ± 0.328	0.15 ± 0.09 U	0.09 ± 0.13 U	0.17 ± 0.09 U	-0.05 ± 0.08 U	0.13 ± 0.11 U	0.103 ± 0.164 J	0.5 ± 0.13 U	0.11 ± 0.08 U	0.352 ± 0.232
Radium-228	NA	pCi/L	NS	0.95 ± 0.64 J	-0.45 ± 0.68 U	0.53 ± 0.382	0.64 ± 0.31 U	0.88 ± 0.64 J	0.73 ± 0.36 J	0.34 ± 0.51 U	0.64 ± 0.48 U	0.245 ± 0.235 J	2.15 ± 0.78	1.47 ± 0.67	0.961 ± 0.296
Sulfate	NA	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62
CALC															
Radium-226/228	NA	pCi/L	7.002									0.348 ± 0.287 J	2.65 ± 0.91	1.58 ± 0.75 U	1.31 ± 0.376
FIELD PARAM															
Turbidity, Field	NA	NTU	17.96[1]									19.1	18.3	26.5	37.3
GEN CHEM															
Chloride	NA	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10
Dissolved Solids, Total	NA	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416
pH, Lab	NA	pH units	6.22-9.0[2]	7.31	7.33	7.31	7.42	7.32	7.33	7.25	7.2	7.41	7.51	7.34	7.21
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011
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
Barium	D	mg/L	2									0.116	0.132	0.13 B	0.116
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									1.41	0.875	7.33	0.619
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									111	93.7	108	93.3 S
Calcium	T	mg/L	103.2[1]	101 S	105	89.4	97.5	107	107	113	113	97.8	108 S	102	100
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									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
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
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
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292
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
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
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383
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
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
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
Thallium	D	mg/L	0.002									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

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-
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-5-20170907	APW-5-20170928	APW-5-20171019	APW-5-20171109	APW-5-20171129	APW-5-20171227	APW-5-20180118	APW-5-20180207	APW-05-WG-20220616	DUP-001-WG-20220616	APW-05-WG-20220914	DUP-001-WG-20220914	APW-05-WG-20221128	DUP-01-WG-20221128	APW-05-WG-20230201	DUP-01-WG-20230201
			Location ID	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05	APW-05
			Sample Date	09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/29/2017	12/27/2017	01/18/2018	02/07/2018	06/16/2022	06/16/2022	09/14/2022	09/14/2022	11/28/2022	11/28/2022	02/01/2023	02/01/2023
			Sample Type	N	N	N	N	N	N	N	N	N	FD	N	FD	N	FD	N	FD
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]																
UNSPECIFIED																			
Fluoride	NA	mg/L	4	0.34	0.34	0.32	0.32	0.32	0.33	0.36	0.32	0.35	0.33	0.33	0.31	0.37	0.38	0.33	0.33
Radium-226	NA	pCi/L	NS	0.37 ± 0.14 U	0.19 ± 0.1 U	0.133 ± 0.370	0.48 ± 0.15 U		0.35 ± 0.12 U	0.13 ± 0.1 U	0.26 ± 0.13 U	0.649 ± 0.316	0.259 ± 0.27 J	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
Radium-228	NA	pCi/L	NS	1.07 ± 0.8	0.89 ± 0.55 J	0.661 ± 0.418	1.17 ± 0.33		0.49 ± 0.42 U	1.04 ± 0.56	0.35 ± 0.4 U	1.1 ± 0.282	0.715 ± 0.31	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
Sulfate	NA	mg/L	400	407	460	399	413	381	394	439	378	224	239	379	403	324	338	325	305
CALC																			
Radium-226/228	NA	pCi/L	7.002									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
FIELD PARAM																			
Turbidity, Field	NA	NTU	17.96[1]									51.8		9.19		4.65		8.21	
GEN CHEM																			
Chloride	NA	mg/L	200	15	15	15	14	16	16	16	16	19	19	15	15	19	19	18	18
Dissolved Solids, Total	NA	mg/L	1200	842	832	804	826	790	792	552	804	650	690	750 H	774 H	714	728 H	696	670
pH, Lab	NA	pH units	6.22-9.0[2]	7.37	7.3	7.26	7.3	7.26	7.31	7.23	7.18	7.35	7.49	7.55	7.57	7.24	7.27	7.31	7.33
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
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	0.0011	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
Arsenic	T	mg/L	0.01	0.0031	0.0026	0.0015	0.0016	0.0016	0.0019	0.0021	0.0019	0.0048	0.0041	0.0025	0.0023	0.0022	0.0023	0.0024	0.0025
Barium	D	mg/L	2									0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135
Barium	T	mg/L	2	0.226	0.233	0.183	0.216	0.193	0.214	0.214	0.195	0.187	0.174	0.154	0.152	0.14	0.136	0.145	0.148
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
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	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
Boron	T	mg/L	2	9.3	10.3	8.89	9.98	9.1	9.83	9.25	8.73	7.67	8.24 S	7.76	7.62	7.48	7.97	7.35	7.59
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
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
Calcium	D	mg/L	103.2[1]									139	141	119	131	87.4	110 S	106 S	111
Calcium	T	mg/L	103.2[1]	136	142	119	131	123	125	121	124	127	129 S	127	137	117	118	112	114
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0137	0.001 U	0.0041	0.001 U	0.001 U	0.0084	0.0033	0.001 U	0.0016 J	0.003 U	0.0015 U	0.0015 U	0.0015 U	0.0016	0.0015 U	0.0015 U
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
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013 J	0.0011 J	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
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0282	0.029	0.0381	0.0373	0.0338	0.0365	0.045	0.0375
Lithium	T	mg/L	0.04	0.0363	0.0443	0.0393	0.0405	0.0415	0.0433	0.0404	0.0397	0.0331	0.0363	0.0408	0.0397	0.0373	0.0371	0.0399	0.0402
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	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
Molybdenum	T	mg/L	0.1	0.172	0.195	0.201	0.168	0.193	0.246	0.244	0.249	0.203	0.195	0.235	0.224	0.223	0.226	0.217	0.212
Nickel	D	mg/L	NS									0.0036	0.0035			0.0011	0.0024		
Nickel	T	mg/L	NS	0.0074	0.0012	0.0023	0.001 U	0.001 U	0.0043	0.0021	0.001 U	0.0037	0.0039			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
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
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
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

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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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N		N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**									**Casing deflected, no sample collected during Q2 2022**			
UNSPECIFIED															
Fluoride	NA	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
Radium-226	NA	pCi/L	NS	0.62 ± 0.17 U	0.37 ± 0.11 U	1.22 ± 0.744	0.39 ± 0.15 U	0.38 ± 0.18 U	0.3 ± 0.12 U	0.03 ± 0.08 U	0.2 ± 0.13 U	N/A	0.31 ± 0.1 U	0.62 ± 0.15 U	0.355 ± 0.275
Radium-228	NA	pCi/L	NS	1.07 ± 0.65	0.61 ± 0.33 U	0.549 ± 0.377	0.86 ± 0.37 J	1.4 ± 0.71	0.78 ± 0.48 J	0.74 ± 0.57 J	0.24 ± 0.34 U	N/A	1.46 ± 0.71	0.28 ± 0.43 U	1.02 ± 0.451
Sulfate	NA	mg/L	400	215	228	206	222	230	236	211	189	N/A	272	254	269
CALC															
Radium-226/228	NA	pCi/L	7.002									N/A	1.77 ± 0.81 U	0.9 ± 0.58 U	1.38 ± 0.528
FIELD PARAM															
Turbidity, Field	NA	NTU	17.96[1]									N/A	18.5	74.4	26.9
GEN CHEM															
Chloride	N	mg/L	200	17	17	16	16	16	16	17	17	N/A	14	17	16
Dissolved Solids, Total	N	mg/L	1200	558	560	562	564	590	516 R	482	584	N/A	670 H	580	582
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
METALS															
Antimony	D	mg/L	0.006									N/A	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
Arsenic	D	mg/L	0.01									N/A	0.004	0.0116	0.012
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
Barium	D	mg/L	2									N/A	0.129	0.118 B	0.152
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
Beryllium	D	mg/L	0.004									N/A	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
Boron	D	mg/L	2									N/A	5.32	4.14	4.39
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
Cadmium	D	mg/L	0.005									N/A	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
Calcium	D	mg/L	103.2[1]									N/A	118	105	109
Calcium	T	mg/L	103.2[1]	99.9	110	96.7	100	110	107	105 S	105	N/A	123	110	116
Chromium	D	mg/L	0.1									N/A	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
Cobalt	D	mg/L	0.006									N/A	0.0013	0.0012	0.001
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
Lead	D	mg/L	0.0075									N/A	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
Lithium	D	mg/L	0.04									N/A	0.0179	0.0155	0.0194
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
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
Molybdenum	D	mg/L	0.1									N/A	0.0669	0.0796	0.0583
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
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
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
Thallium	D	mg/L	0.002									N/A	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

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Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
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mg/L = milligrams per liter
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Table 1
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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
			Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	Total or Dissolved	Units	Groundwater Protection Standards[3]												
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
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
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
Sulfate	N	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247
CALC															
Radium-226/228	N	pCi/L	7.002									0.497 ± 0.308	2.93 ± 0.98	0.6 ± 0.59 U	1.47 ± 0.568
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									30.5	15.1	5.56	6.67
GEN CHEM															
Chloride	N	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24
Dissolved Solids, Total	N	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638
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
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U	0.001 U	0.0013
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
Barium	D	mg/L	2									0.233	0.146	0.19 B	0.219
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									4.92	5.95	6.88	7.12
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									124	93.7	98	94.1
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
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									0.0002 J	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
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
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
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0406
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
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
Molybdenum	D	mg/L	0.1									0.229	0.235	0.24	0.244
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
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
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
Thallium	D	mg/L	0.002									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

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
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mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
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J = Analyte detected below quantitation limits
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*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
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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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
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
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
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
Sulfate	N	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48
CALC															
Radium-226/228	N	pCi/L	7.002									1.1 ± 0.313	1.63 ± 0.81 U	1.33 ± 0.77 U	2.1 ± 0.441
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									66.2	34.8	10.5	79.2
GEN CHEM															
Chloride	N	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14
Dissolved Solids, Total	N	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824
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
METALS															
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0015
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
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.001 U	0.001 U
Arsenic	T	mg/L	0.01	0.0014	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0023	0.0016	0.0011	0.0014
Barium	D	mg/L	2									0.334	0.255	0.354 B	0.411
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									0.148	0.193	0.199	0.267
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									222	199	204	199
Calcium	T	mg/L	103.2[1]	192	204	171	187	196	193	191	185	238	210	209	200
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									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
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
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
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191
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
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
Molybdenum	D	mg/L	0.1									0.0026	0.0026	0.0021	0.0027
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
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
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
Thallium	D	mg/L	0.002									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

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
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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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
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
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
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
Sulfate	N	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29
CALC															
Radium-226/228	N	pCi/L	7.002									0.735 ± 0.325	1.13 ± 0.72 U	2.08 ± 0.9	0.247 ± 0.373 J
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									119	139	305	26.9
GEN CHEM															
Chloride	N	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13
Dissolved Solids, Total	N	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378
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
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001
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
Barium	D	mg/L	2									0.194	0.163	0.146 B	0.15
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									108	79.7	75.4	72.1
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
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									0.0013	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
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
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
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131
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
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
Molybdenum	D	mg/L	0.1									0.0008 J	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
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		0.0077	
Selenium	D	mg/L	0.05									0.0027	0.0068	0.0126	0.0128
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
Thallium	D	mg/L	0.002									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

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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
			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
			Sample Date	09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/08/2018	06/15/2022	09/13/2022	11/30/2022	02/01/2023
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
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
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
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
Sulfate	N	mg/L	400	65	47	53	65	50	42	28	25	104	39	36	38
CALC															
Radium-226/228	N	pCi/L	7.002									0.267 ± 0.315 J	0.46 ± 0.58 U	0.83 ± 0.61 U	0.12 ± 0.289 U
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									34.2	7.3	7.28	23.6
GEN CHEM															
Chloride	N	mg/L	200	13	13	13	13	13	13	13	768	13	12	12	13
Dissolved Solids, Total	N	mg/L	1200	364 R	372	324	366	392	278	348	3380	424	380 H	372	360
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
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0019	0.0021	0.0019	0.0019
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
Barium	D	mg/L	2									0.129	0.111	0.109 B	0.107
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									1.32	0.327	0.24	0.239
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									107 S	76.5	78.3	76.3
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
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									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
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
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
Lithium	D	mg/L	0.04									0.0184	0.0137	0.0131	0.0125
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
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
Molybdenum	D	mg/L	0.1									0.0351	0.0182	0.0139	0.0165
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
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
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
Thallium	D	mg/L	0.002									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

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-
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
			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
			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
			Sample Type	N	N	N	N	N	N	N	N	N	N	N	N
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
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
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
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
Sulfate	N	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39
CALC															
Radium-226/228	N	pCi/L	7.002									1.44 ± 0.374	0.78 ± 0.67 U	0.59 ± 0.54 U	1.03 ± 0.402
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									46.9	21.9	36.4	45.3
GEN CHEM															
Chloride	N	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13
Dissolved Solids, Total	N	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454
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
METALS															
Antimony	D	mg/L	0.006									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
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U	0.0012	0.0011
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
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.304
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									0.0786	0.0711	0.0841	0.0579
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									143	124	113	114
Calcium	T	mg/L	103.2[1]	118	136	120	121	125	123	148 S	124 S	135	374	115	122
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									0.0025	0.0021	0.0032	0.003
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
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
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
Lithium	D	mg/L	0.04									0.0135	0.0135	0.0133	0.012
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
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
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0024	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
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
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
Thallium	D	mg/L	0.002									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

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-
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**
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**
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**
Sample Type				**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**	**N**
Parameter/Analyte	**Total or Dissolved**	**Units**	**Groundwater Protection Standards[3]**												
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
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
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
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
CALC															
Radium-226/228	N	pCi/L	7.002									1.25 ± 0.42	2.82 ± 1.01	1.95 ± 0.79 U	1.24 ± 0.542
FIELD PARAM															
Turbidity, Field	N	NTU	17.96[1]									61.5	34.3	52.6	37.3
GEN CHEM															
Chloride	N	mg/L	200	10	7	6	6	6	6	6	6	12	15	18	21
Dissolved Solids, Total	N	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H	750	780
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
METALS															
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0016
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
Arsenic	D	mg/L	0.01									0.152	0.0612	0.0138	0.171
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
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506
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
Beryllium	D	mg/L	0.004									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
Boron	D	mg/L	2									0.57	0.541	7.48	0.497
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
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2[1]									169	156	142	145
Calcium	T	mg/L	103.2[1]	136	144	135	152	150	145	140	140	161	171 S	154	145
Chromium	D	mg/L	0.1									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
Cobalt	D	mg/L	0.006									0.0001 J	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
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
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
Lithium	D	mg/L	0.04									0.0266	0.0286	0.0387 R	0.0268
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
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
Molybdenum	D	mg/L	0.1									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
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
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
Thallium	D	mg/L	0.002									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

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
3 Eight episodes of groundwater sampling were conducted from September 2017 through February 2018 to establish background concentrations for the Site utilizing data from background wells APW-1R and APW-
Highlighted values exceed action level
NS = No standard

APPENDIX A FIRST QUARTER 2023 CCR IMPOUNDMENT INSPECTION REPORTS

Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form

Date 03/03/2023

Time 1000-1200

Name Matt Halley
(Inspector)

Weather:

Temperature:
45 F

☐ Sunny
☒ Cloudy
☐ Raining
☐ Other

Observations:

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

Conditions Limiting Visibility:

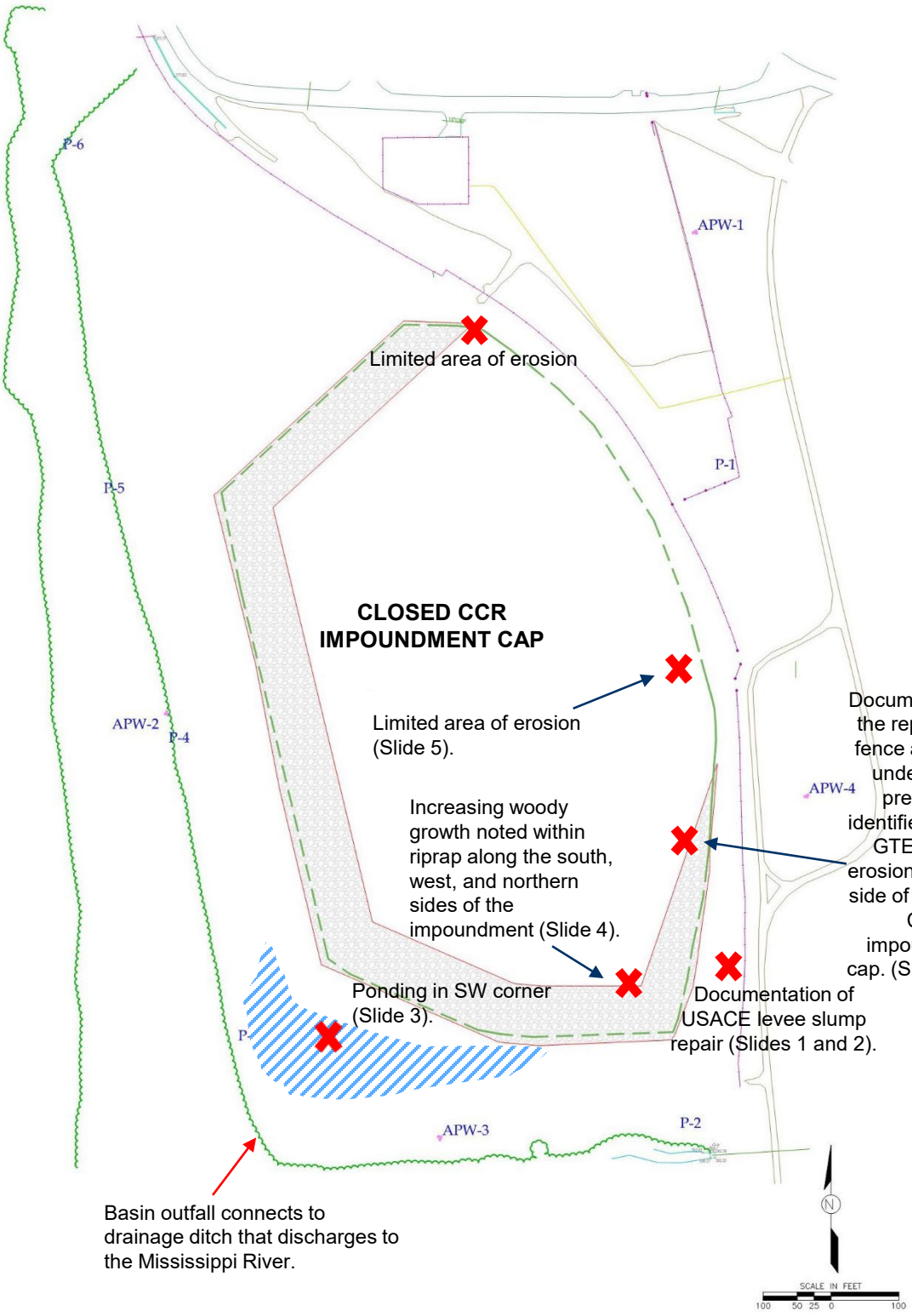
☐ Snow Cover
☐ Vegetation
☒ None
☐ Other

Observations in Detail Below:

- ERM onsite for the Q1 inspection of the closed CCR impoundment and groundwater sampling event.
- Completed repairs to the U.S. Army Corps of Engineers (USACE) Levee by Grand Tower Energy Center (GTEC) continues to be documented by ERM (see figure and photos).
- Completed repairs to the fence undermining on the east/SE side documented (see figure and photos).
- Post-repair erosion control measures (straw matting) on USACE levee has partially become detached.
- Erosion noted across north, west, and southern CCR impoundment cap faces up to 9” deep.
- Growth of a limited but increased amount of woody vegetation (up to 1”diameter) within the riprap on the north, west, and southern impoundment cap faces was observed.
- Ponding noted in SW corner of the basin near the outfall.
- Inspector recommends removal of woody growth, repair of erosional channels, and re-installing straw matting on the USACE levee repair area.

Please see observation locations on figure on the following page.

Observation Locations Map



Grand Tower Energy Center Q1 2023 Closed CCR Impoundment Cap Inspection - 3 March 2023

Repairs to the Levee and Fence Undermining on the SE Side of the Closed CCR Impoundment Cap

Facing east towards the repaired Grand Tower Energy Center (GTEC) and United States Army Corps of Engineers (USACE) levee area. Note: straw matting from repaired levee face has become partially detached and deposited at the bottom of the slope.

Repairs to the Fence and Riprap Undermining, and Levee erosion on the SE Side of Closed CCR Impoundment Cap

Facing north towards impoundment cap – repairs of fence and riprap undermining, and USACE levee section are visible.

Facing northeast towards repaired section of USACE levee.

Ponding in the SW Corner of Site Basin Near the Outfall

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

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

Woody Growth Observations

Southern face of impoundment cap with woody growth (up to 1” diameter) within riprap. Increased woody growth since the third quarter 2022 found within riprap along south, west, and northern sides of the impoundment.

Erosional Channel Observations

Facing south on east side of impoundment cap.

APPENDIX B FIRST QUARTER 2023 GROUNDWATER MONITORING WELL INSPECTION FORMS

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-01R		Date:	1/30/2023
Total Depth (Actual):	58.38	(BTOC)	Time:	12:15
Total Depth (Measured):	58.23	(BTOC)		
Depth to Water (Measured):	33.8	(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:	YES
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-02		Date:	1/30/2023
Total Depth (Actual):	58.75	(BTOC)	Time:	10:15
Total Depth (Measured):	58.55	(BTOC)		
Depth to Water (Measured):	33.19	(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:	1/30/2023
Total Depth (Actual):	59.65	(BTOC)	Time:	11:45
Total Depth (Measured):	59.42	(BTOC)		
Depth to Water (Measured):	32.95	(BTOC)		

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

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	YES
Weep hole present:	NO
Water present in protector:	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:	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-04		Date:	1/30/2023
Total Depth (Actual):	60.4	(BTOC)	Time:	12:00
Total Depth (Measured):	60.35	(BTOC)		
Depth to Water (Measured):	34.75	(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:	YES
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-05		Date:	1/30/2023
Total Depth (Actual):	56.9	(BTOC)	Time:	10:00
Total Depth (Measured):	57.5	(BTOC)		
Depth to Water (Measured):	31.33	(BTOC)		

Is well screen occluded more than 10%? YES

If Yes, list steps for redevelopment: NA

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: YES

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 screen occluded by more than 40%. APW-05 is scheduled for abandonment and redrilling scheduled before Q2 2023.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06S		Date:	1/30/2023
Total Depth (Actual):	63.98	(BTOC)	Time:	9:45
Total Depth (Measured):	64.43	(BTOC)		
Depth to Water (Measured):	30.78	(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: YES

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:

Sand surrounding the well and marking points.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-06D		Date:	1/30/2023
Total Depth (Actual):	152.57	(BTOC)	Time:	9:30
Total Depth (Measured):	156.71	(BTOC)		
Depth to Water (Measured):	30.86	(BTOC)		

Is well screen occluded more than 10%?	9:30
If Yes, list steps for redevelopment:	
LNAPL Present:	
If Yes, measured thickness =	
DNAPL Present:	
If Yes, measured thickness =	

Well Completion Type:

Condition of protector: INTACT	YES
Well ID present and readable:	YES
Locks intact:	NO
Weep hole present:	YES
Water present in protector:	NO
Are well "markers" (i.e.bumper posts) needed at this location:	YES
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:

Sand surrounding the well and marking points.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID:	APW-07		Date:	1/30/2023
Total Depth (Actual):	63.35	(BTOC)	Time:	11:30
Total Depth (Measured):	63.18	(BTOC)		
Depth to Water (Measured):	28.02	(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:	YES
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:	1/30/2023
Total Depth (Actual):	61.89	(BTOC)	Time:	11:15
Total Depth (Measured):	61.75	(BTOC)		
Depth to Water (Measured):	29.95	(BTOC)		

Is well screen occluded more than 10%? NO

If Yes, list steps for redevelopment:

LNAPL Present: NO

If Yes, measured thickness =

DNAPL Present: NO

If Yes, measured thickness =

Well Completion Type:

Condition of protector: INTACT YES

Well ID present and readable: YES

Locks intact: YES

Weep hole present: YES

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:	1/30/2023
Total Depth (Actual):	63.4	(BTOC)	Time:	10:30
Total Depth (Measured):	63.18	(BTOC)		
Depth to Water (Measured):	34.09	(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:	YES
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:	1/30/2023
Total Depth (Actual):	62.84	(BTOC)	Time:	10:45
Total Depth (Measured):	62.78	(BTOC)		
Depth to Water (Measured):	27.08	(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:	YES
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:	1/30/2023
Total Depth (Actual):	98.19	(BTOC)	Time:	11:00
Total Depth (Measured):	98.15	(BTOC)		
Depth to Water (Measured):	26.72	(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: YES

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 FIRST QUARTER 2023 FIELD DATA FORMS

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2023/02/02
Cloudy 40 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 53.23 (ft)	**Reference Elevation** 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 35.45 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 58.23 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 428.6 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 48.3 - 58.3 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 12.2 (gal) / 3 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
14:31	35.47	500	0	11.3	6.95	332.9	NM	1.97	107.5	581	NM	Turbid brown, no odor
14:36	35.47	450	0.5	12.9	6.17	396.8	NM	1.24	120.2	444	NM	Turbid brown, no odor
14:41	35.47	450	1	13.1	6.15	445.9	NM	1.33	112.9	403	NM	Turbid brown, no odor
14:46	35.47	400	1.5	13	6.19	471.4	NM	1.13	97.1	196	NM	Sl. turbid brown, no odor
14:51	35.47	400	2	13.3	6.23	482.9	NM	1.08	91.2	93.6	NM	Cloudy, no odor
14:56	35.47	400	2.5	13.4	6.25	498.2	NM	1.08	89	91.7	NM	Cloudy, no odor
15:01	35.47	400	3	13.3	6.29	507.2	NM	1.09	89.9	89.5	NM	Cloudy, no odor

Sample ID(s): APW-01R-WG-20230202	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Clay Sansoucie 	02/12/2023 16:06

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2023/02/01
Partly cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 53.55 (ft)	**Reference Elevation** 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 32.15 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 58.55 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 250 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 47.2 - 57.2 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 14.14 (gal) / 2 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
13:08	33.67	250	0	12.6	7.2	1131	NM	0.54	-79.6	130	NM	Cloudy, rotten egg like odor
13:13	34.93	250	0.25	12.7	7.11	1143	NM	0.16	-98.6	336	NM	Sl. Turbid, rotten egg like odor
13:18	36.47	250	0.5	13.3	7.32	1139	NM	0.14	-104	191	NM	Sl. Turbid, rotten egg like odor
13:23	37.79	250	1	13.6	7.1	1132	NM	0.12	-108	133	NM	Sl. Turbid, rotten egg like odor
13:28	38.84	250	1.25	13.6	7.15	1130	NM	0.11	-110.1	111	NM	Cloudy, rotten egg like odor
13:33	39.76	250	1.5	13.5	7.16	1126	NM	0.1	-110.2	96.9	NM	Cloudy, rotten egg like odor
13:38	40.63	250	1.75	13.6	7.14	1124	NM	0.11	-109.7	94.7	NM	Cloudy, rotten egg like odor
13:43	41.26	250	2	13.6	7.15	1124	NM	0.12	-109.6	93.6	NM	Cloudy, rotten egg like odor

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-02-WG-20230201,DUP-02-WG-20230201			
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Clay Sansoucie 	02/12/2023 16:08

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-03
Well Permit No:

Date: 2023/01/30
Cloudy 23 Deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 54.42 (ft)	**Reference Elevation** 365.79 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 32.95 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 59.42 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 463.5 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7ft ()
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 14.17 (gal) / 5.75 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
12:15	32.91	575	0	11.8	6.24	798	NM	1.06	87.3	217	NM	Sl. Turbid, no odor
12:20	32.91	200	0.5	10.5	6.67	801	NM	0.98	44.9	300	NM	Sl. Turbid, no odor
12:25	32.92	350	1	12.5	6.99	808	NM	0.5	-16.9	213	NM	Sl. Turbid, no odor
12:30	32.92	400	1.5	12	7.18	813	NM	0.39	-41.4	230	NM	Sl. Turbid, no odor
12:40	32.92	500	1.75	12	7.27	818	NM	0.5	-26.5	176	NM	Sl. Turbid, no odor
12:45	32.92	500	2.25	12.6	7.36	818	NM	0.34	-53.9	288	NM	Sl. Turbid, no odor
12:50	32.92	500	2.75	12.7	7.4	827	NM	0.29	-63.3	204	NM	Sl. Turbid, no odor
12:55	32.92	500	3.25	12.8	7.4	829	NM	0.23	-67	142	NM	Cloudy, no odor
13:00	32.92	500	3.75	12.8	7.4	829	NM	0.2	-69.1	112	NM	Cloudy, no odor
13:05	32.92	500	4.25	12.8	7.4	827	NM	0.18	-69.6	67.4	NM	Clear, no odor
13:10	32.92	500	4.75	12.6	7.4	827	NM	0.15	-69.9	49.5	NM	Clear, no odor
13:15	32.92	500	5.25	12.6	7.4	825	NM	0.14	-69.7	52.1	NM	Clear, no odor
13:20	32.92	500	5.75	12.7	7.39	824	NM	0.14	-69.6	50.7	NM	Clear, no odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-03-WG-20230130	Had pump problems at 1233. Had to switch to our backup pump and started pumping again at 1240	Clay Sansoucie 	02/12/2023 16:10
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

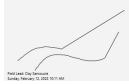
Well ID: APW-04
Well Permit No:

Date: 2023/02/02
Sunny 40 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 55.35 (ft)	**Reference Elevation** 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 36.19 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 60.35 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 450 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 45.7 - 55.7 ft()
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 12.94 (gal) / 2.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
13:35	36.19	450	0	10.8	7.46	576.3	NM	4.82	71.8	156	NM	Sl. Turbid brown, no odor
13:40	36.19	450	0.5	13.1	7.15	631.4	NM	0.5	65.1	128	NM	Sl. Turbid brown, no odor
13:45	36.19	450	1	13.2	7.12	636.7	NM	0.22	59.2	62.5	NM	Cloudy, no odor
13:50	36.19	450	1.5	13.3	7.12	635.7	NM	0.25	56.9	38.9	NM	Clear, no odor
13:55	36.19	450	2	13.6	7.12	634.9	NM	0.25	54.6	37.8	NM	Clear, no odor
14:00	36.19	450	2.5	13.4	7.12	634.7	NM	0.24	54.2	37.3	NM	Clear, no odor

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-04-WG-20230202		Clay Sansoucie 	02/12/2023 16:11
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05
Well Permit No:

Date: 2023/02/01
Partly cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 52.5 (ft)	**Reference Elevation** 363.8 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 32.07 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 57.5 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 385.7 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 13.62 (gal) / 3 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
11:50	32.13	600	0	12	7.17	932	NM	0.77	8.6	21	NM	Clear, no odor
11:55	32.13	250	0.5	12.5	7.21	941	NM	0.2	-40.4	20.3	NM	Clear, no odor
12:00	32.13	250	1	10.9	7.24	943	NM	0.13	-47.2	10.3	NM	Clear, no odor
12:05	32.13	400	1.5	11.1	7.18	943	NM	0.11	-51.3	12	NM	Clear, no odor
12:10	32.13	400	2	13.1	7.21	943	NM	0.09	-58	8.53	NM	Clear, no odor
12:15	32.13	400	2.5	13.1	7.23	944	NM	0.08	-61.6	8.8	NM	Clear, no odor
12:20	32.13	400	3	13	7.22	942	NM	0.09	-62.7	8.21	NM	Clear, no odor

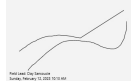
Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-05-WG-20230201,DUP-01-WG-20230201		Clay Sansoucie 	02/15/2023 19:02
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form	Well ID: APW-06D Well Permit No:	Date: 2023/02/01 Cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 151.71 (ft)	**Reference Elevation** 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31.57 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 156.71 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 352.8 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 140 - 150 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 67 (gal) / 8.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
09:27	31.6	300	0	9.7	7.82	790	NM	1.77	-62.3	134	NM	Cloudy, no odor
09:32	31.6	300	0.5	10.7	7.24	813	NM	10.5	-72.3	1000	NM	Turbid black, no odor
09:37	31.6	500	1	9.8	7.18	808	NM	9.58	-69.9	928	NM	Turbid black, no odor
09:42	31.6	350	1.5	11	7.23	807	NM	8.58	-69.2	584	NM	Turbid gray, no odor
09:47	31.6	350	2	12.1	7.21	806	NM	8.1	-69.6	225	NM	Turbid gray, no odor
09:52	31.6	350	2.5	11.4	7.28	808	NM	8.15	-69.8	203	NM	Cloudy, no odor
09:57	31.6	350	3	12.5	7.2	808	NM	7.03	-71.2	163	NM	Cloudy, no odor
10:02	31.6	350	3.5	12.2	7.23	809	NM	6.76	-70.8	155	NM	Cloudy, no odor
10:07	31.6	350	4	11.7	7.33	809	NM	6.47	-70.8	125	NM	Cloudy, no odor
10:12	31.6	350	4.5	12.1	7.24	811	NM	5.97	-71.9	104	NM	Cloudy, no odor
10:17	31.6	350	5	11.5	7.22	810	NM	5.89	-71.9	94.1	NM	Cloudy, no odor
10:22	31.6	350	5.5	11.4	7.22	810	NM	3.3	-73.4	70	NM	Cloudy, no odor
10:27	31.6	350	6	11.9	7.14	810	NM	2.94	-72.6	54.6	NM	Clear, no odor
10:32	31.6	350	6.5	12.1	7.17	806	NM	2.95	-72.6	46.6	NM	Clear, no odor
10:37	31.6	350	7	12.2	7.17	807	NM	2.91	-73.2	37.4	NM	Clear, no odor
10:42	31.6	350	7.5	11.5	7.19	809	NM	2.94	-73.1	27.9	NM	Clear, no odor
10:47	31.6	350	8	12	7.21	808	NM	2.89	-72.9	27.7	NM	Clear, no odor
10:52	31.6	350	8.5	12	7.22	810	NM	2.88	-72.9	26.9	NM	Clear, no odor

Sample ID(s): APW-06D-WG-20230201	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Clay Sansoucie 	02/12/2023 16:13

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2023/02/01
Cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 59.43 (ft)	**Reference Elevation** 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31.15 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 64.43 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 472.2 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 17.82 (gal) / 4 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
08:22	31.2	500	0	7.8	7.7	888	NM	3.35	-96	203	NM	Sl. Turbid, rotten egg like odor
08:27	31.22	500	0.5	12.5	7.27	891	NM	0.52	-109.8	91.3	NM	Cloudy, rotten egg like odor
08:32	31.22	500	1	13.3	7.19	888	NM	0.33	-116.7	44	NM	Clear, rotten egg like odor
08:37	31.22	500	1.5	13.4	7.19	886	NM	0.24	-116.9	21.4	NM	Clear, rotten egg like odor
08:42	31.22	450	2	13	7.17	880	NM	0.22	-116.8	11	NM	Clear, rotten egg like odor
08:47	31.22	450	2.5	13.3	7.17	882	NM	0.14	-117.6	9.12	NM	Clear, no odor
08:52	31.22	450	3	13.3	7.16	879	NM	0.12	-118.3	6.86	NM	Clear, no odor
08:57	31.22	450	3.5	13	7.16	877	NM	0.12	-118.7	6.31	NM	Clear, no odor
09:02	31.22	450	4	13.1	7.15	876	NM	0.12	-118.4	6.67	NM	Clear, no odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-06S-WG-20230201		Clay Sansoucie 	02/12/2023 16:14
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-07
Well Permit No:

Date: 2023/01/30
Cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low_Flow / 58.18 (ft)	**Reference Elevation** 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 28 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.18 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 371.4 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 18.84 (gal) / 3 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
14:05	28.03	300	0	10.4	6.73	1213	NM	0.76	-37.6	131	NM	Cloudy, no odor
14:10	28.03	300	0.5	8.5	6.73	1227	NM	0.7	-50	160	NM	Cloudy, no odor
14:15	28.03	400	1	11.1	6.73	1220	NM	0.49	-56.5	107	NM	Clear, no odor
14:20	28.03	400	1.5	11.4	6.77	1223	NM	0.32	-62.9	98.1	NM	Clear, no odor
14:25	28.03	400	2	11	6.76	1222	NM	0.33	-65.3	85.3	NM	Clear, no odor
14:30	28.03	400	2.5	11.3	6.77	1221	NM	0.24	-67.5	81.7	NM	Clear, no odor
14:35	28.03	400	3	10.9	6.77	1223	NM	0.2	-68.8	79.2	NM	Clear, no odor

Sample ID(s): APW-07-WG-20230130	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
Analysis: IAC Title 34 Section 845.600 groundwater parameters		Clay Sansoucie 	02/15/2023 18:47

Low Flow Groundwater Sampling Field Data Form

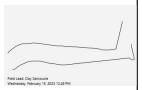
Well ID: APW-08
Well Permit No:

Date: 2023/02/02
Cloudy 20 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 56.75 (ft)	**Reference Elevation** 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 31.07 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 61.75 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 359.4 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 16.43 (gal) / 7.5 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
08:30	31.07	400	0	13.3	7.55	424.5	NM	0.33	-54.6	1000	NM	Very turbid brown, no odor
08:35	31.07	400	0.5	12.6	7.3	436.5	NM	0.18	-46.6	1000	NM	Very turbid brown, no odor
08:40	31.07	400	1	12.4	7.13	433.4	NM	0.19	-35.1	675	NM	Very turbid brown, no odor
08:45	31.07	350	1.5	13	7.14	423.9	NM	0.18	-29.1	382	NM	Turbid lt. brown, no odor
08:50	31.07	350	2	12.7	7.13	422.9	NM	0.22	-24	256	NM	Turbid lt. brown, no odor
08:55	31.07	350	2.5	12.4	7.13	422.1	NM	0.26	-19.6	176	NM	Turbid lt. brown, no odor
09:00	31.07	350	3	12.4	7.13	423.3	NM	0.21	-16.2	103	NM	Cloudy, no odor
09:05	31.07	350	3.5	12.4	7.12	421.4	NM	0.18	-13.4	71.3	NM	Cloudy, no odor
09:10	31.07	350	4	12.2	7.12	420	NM	0.17	-10.8	62.1	NM	Cloudy, no odor
09:15	31.07	350	4.5	12.6	7.13	421.1	NM	0.16	-9.2	49.5	NM	Cloudy, no odor
09:20	31.07	350	5	12.2	7.12	421.5	NM	0.16	-6.6	42.2	NM	Clear, no odor
09:25	31.07	350	5.5	11.9	7.11	420.8	NM	0.16	-3.6	39	NM	Clear, no odor
09:30	31.07	350	6	12.7	7.13	544.5	NM	0.13	-1.3	32.2	NM	Clear, no odor
09:35	31.07	350	6.5	12.7	7.11	543.4	NM	0.14	3.1	28.3	NM	Clear, no odor
09:40	31.07	350	7	12.8	7.11	541.7	NM	0.13	3.4	26.6	NM	Clear, no odor
09:45	31.07	350	7.5	12.8	7.11	542.4	NM	0.13	3.8	26.9	NM	Clear, no odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-08-WG-20230202		Clay Sansoucie 	02/15/2023 18:49
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

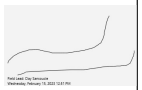
Well ID: APW-09
Well Permit No:

Date: 2023/02/01
Cloudy 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 58.18 (ft)	**Reference Elevation** 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 34.66 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 63.18 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 394.4 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 15.27 (gal) / 4 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
15:02	34.67	400	0	10.5	7.41	513	NM	1.24	-20.8	250	NM	Sl. turbid, no odor
15:07	34.67	300	0.5	12.3	7.3	545.6	NM	0.85	18.7	230	NM	Sl. turbid, no odor
15:12	34.67	450	1	13.3	7.29	544.1	NM	0.67	27.6	118	NM	Cloudy, no odor
15:17	34.67	400	1.5	13.2	7.28	545.5	NM	0.58	32.3	64.8	NM	Clear, no odor
15:22	34.67	400	2	13.4	7.28	544.8	NM	0.57	32.4	55.4	NM	Clear, no odor
15:27	34.67	400	2.5	13.2	7.27	545.1	NM	0.55	33.1	33.8	NM	Clear, no odor
15:32	34.67	400	3	13.2	7.28	545.4	NM	0.54	32.4	24.1	NM	Clear, no odor
15:37	34.67	400	3.5	13.5	7.28	545.3	NM	0.52	31.4	22	NM	Clear, no odor
15:42	34.67	400	4	13.4	7.29	545.5	NM	0.51	31.6	23.6	NM	Clear, no odor

Sample ID(s):	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
APW-09-WG-20230201		Clay Sansoucie 	02/15/2023 18:51
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2023/02/02
Sunny 30 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 93.15 (ft)	**Reference Elevation** 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.31 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 98.15 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 441.7 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 86 - 96 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 37.93 (gal) / 5.25 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
11:31	27.35	450	0	7.7	7.17	818	NM	4.84	-80.2	65.4	NM	Clear, no odor
11:36	27.35	250	0.5	11.9	6.98	695	NM	0.53	-55.4	1000	NM	Turbid gray, no odor
11:41	27.35	400	1	12.5	6.95	695	NM	0.18	-46.5	1000	NM	Turbid gray, no odor
11:46	27.35	200	1.5	12.1	6.96	694	NM	0.16	-38.6	935	NM	Turbid gray, no odor
11:51	27.35	500	1.75	13.5	6.94	692	NM	0.15	-30.9	608	NM	Turbid gray, no odor
11:56	27.35	500	2.25	13.2	6.96	691	NM	0.16	-25.1	389	NM	Turbid gray, no odor
12:01	27.35	500	2.75	13.5	6.95	686	NM	0.1	-20.9	240	NM	Turbid gray, no odor
12:06	27.35	500	3.25	13.5	6.95	688	NM	0.08	-14.7	176	NM	Cloudy, no odor
12:11	27.35	500	3.75	13.5	6.95	689	NM	0.07	-14.5	73.7	NM	Cloudy, no odor
12:16	27.35	500	4.25	13.6	6.95	691	NM	0.06	-11.4	48.9	NM	Clear, no odor
12:21	27.35	500	4.75	13.7	6.95	691	NM	0.06	-10.1	46.8	NM	Clear, no odor
12:26	27.35	500	5.25	13.7	6.95	692	NM	0.05	-10.5	45.3	NM	Clear, no odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-10D-WG-20230202		Clay Sansoucie 	03/08/2023 18:29
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10S
Well Permit No:

Date: 2023/02/02
Sunny 25 deg F

Site ID GTEC-GRAND-TOWER	**Purge Method / Pump Intake Depth** Low Flow / 57.78 (ft)	**Reference Elevation** 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	**Purge Equipment** NA	**Depth to Water / Free Product** 27.43 (ft) / None
Project Number 0599247	**Sample Equipment** NA	**Total Well Depth** 62.78 (ft)
Project Name 20230130-GWMonitor	**Average Purge Rate** 411.1 (mL/min)	**Well Diameter / Well Screen Interval** 2 (in) / 50 - 60 (ft)
Sampler Clay Sansoucie/ Marshall Arendell	**Volume of Water in Well / Total Volume Purged** 18.93 (gal) / 4 (gal)	**Well Construction** PVC

Well Head Vapor Measurements
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 (uS/cm) ±3%	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(ppm) ±10%	Comments
10:22	27.6	450	0	10.9	6.9	1141	NM	1.07	-76.8	64.4	NM	Cloudy, no odor
10:27	27.6	500	0.5	11.5	6.97	1141	NM	0.26	-101.9	1000	NM	Very turbid black, rotten egg like odor
10:32	27.6	350	1	12.9	6.98	1136	NM	0.2	-111.3	1000	NM	Very turbid black, rotten egg like odor
10:37	27.6	400	1.5	12.8	6.98	1076	NM	0.16	-112.9	305	NM	Turbid dark gray, rotten egg like odor
10:42	27.6	400	2	13.8	6.98	1035	NM	0.13	-115.8	186	NM	Cloudy, rotten egg like odor
10:47	27.6	400	2.5	13.9	6.98	1021	NM	0.12	-115.9	105	NM	Cloudy, rotten egg like odor
10:52	27.6	400	3	13.7	6.98	997	NM	0.1	-117	38.2	NM	Clear, rotten egg like odor
10:57	27.6	400	3.5	13.8	6.99	996	NM	0.11	-117.8	35.2	NM	Clear, rotten egg like odor
11:02	27.6	400	4	13.7	6.99	996	NM	0.1	-118.2	37.3	NM	Clear, rotten egg like odor

Sample ID(s):	**Additional Comments**	**SAMPLER NAME AND SIGNATURE**	**Date Time**
APW-10S-WG-20230202		Clay Sansoucie 	02/15/2023 18:53
Analysis: IAC Title 34 Section 845.600 groundwater parameters			

APPENDIX D FIRST QUARTER 2023 LABORATORY ANALYTICAL REPORT

February 28, 2023

Matt Halley
ERM
1968 Craig Road
Suite 100
St. Louis, MO 63146
TEL: (314) 952-2760
FAX:

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

RE: GTEC **WorkOrder:** 23020169

Dear Matt Halley:

TEKLAB, INC received 15 samples on 2/3/2023 8:45:00 AM 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

Client: ERM
Client Project: GTEC

Work Order: 23020169
Report Date: 28-Feb-23

This reporting package includes the following:

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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	

Client: ERM
Client Project: GTEC

Work Order: 23020169
Report Date: 28-Feb-23

Cooler Receipt Temp: 1.6 °C

Radium-226 and Radium-228 analysis was performed by Pace Analytical Services, LLC. See attached report for

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:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	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:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-001 **Client Sample ID:** APW-03-WG-20230130

Matrix: GROUNDWATER **Collection Date:** 01/30/2023 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**524**	mg/L	1	02/03/2023 12:55	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**322**	mg/L	10	02/10/2023 12:31	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.45**		1	02/08/2023 16:00	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.23**	mg/L	1	02/09/2023 15:22	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**21**	mg/L	1	02/10/2023 12:26	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 20:48	202752
Arsenic	NELAP	0.0010		**0.0020**	mg/L	5	02/10/2023 20:48	202752
Barium	NELAP	0.0010		**0.139**	mg/L	5	02/10/2023 20:48	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 20:48	202752
Boron	NELAP	0.0250		**4.98**	mg/L	5	02/10/2023 20:48	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 20:48	202752
Calcium	NELAP	0.125		**121**	mg/L	5	02/15/2023 8:33	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 12:51	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 12:51	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 20:48	202752
Lithium	*	0.0030		**0.0275**	mg/L	5	02/10/2023 20:48	202752
Molybdenum	NELAP	0.0015		**0.0521**	mg/L	5	02/13/2023 13:28	202752
Nickel	NELAP	0.0010		**0.0011**	mg/L	5	02/14/2023 12:51	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 20:48	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 20:48	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Arsenic	NELAP	0.0010		**0.0030**	mg/L	5	02/13/2023 23:02	202807
Barium	NELAP	0.0010		**0.135**	mg/L	5	02/09/2023 18:08	202662
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Boron	NELAP	0.0250		**4.94**	mg/L	5	02/09/2023 18:08	202662
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Calcium	NELAP	0.125		**111**	mg/L	5	02/10/2023 11:50	202662
Chromium	NELAP	0.0015		**0.0019**	mg/L	5	02/10/2023 11:50	202662
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Iron	NELAP	0.0250		**2.41**	mg/L	5	02/09/2023 18:08	202662
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Lithium	*	0.0030		**0.0276**	mg/L	5	02/09/2023 18:08	202662
Manganese	NELAP	0.0020		**0.352**	mg/L	5	02/09/2023 18:08	202662
Molybdenum	NELAP	0.0015		**0.0528**	mg/L	5	02/09/2023 18:08	202662
Nickel	NELAP	0.0010		**0.0028**	mg/L	5	02/09/2023 18:08	202662
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/09/2023 18:08	202662
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/09/2023 18:08	202662
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/07/2023 19:54	202649

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-001
Client Sample ID: APW-03-WG-20230130
Matrix: GROUNDWATER
Collection Date: 01/30/2023 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-002 **Client Sample ID:** APW-07-WG-20230130

Matrix: GROUNDWATER **Collection Date:** 01/30/2023 14:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**824**	mg/L	1	02/06/2023 12:21	R324475
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**48**	mg/L	1	02/10/2023 12:34	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.23**		1	02/08/2023 16:02	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	02/07/2023 12:35	R324472
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**14**	mg/L	1	02/10/2023 12:34	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0015**	mg/L	5	02/10/2023 21:39	202752
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:39	202752
Barium	NELAP	0.0010		**0.411**	mg/L	5	02/10/2023 21:39	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:39	202752
Boron	NELAP	0.0250		**0.267**	mg/L	5	02/10/2023 21:39	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:39	202752
Calcium	NELAP	0.125		**199**	mg/L	5	02/15/2023 8:37	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 12:56	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 12:56	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:39	202752
Lithium	*	0.0030		**0.0191**	mg/L	5	02/10/2023 21:39	202752
Molybdenum	NELAP	0.0015		**0.0027**	mg/L	5	02/13/2023 13:34	202752
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 12:56	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:39	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 21:39	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Arsenic	NELAP	0.0010		**0.0014**	mg/L	5	02/16/2023 11:26	202915
Barium	NELAP	0.0010		**0.371**	mg/L	5	02/16/2023 11:26	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Boron	NELAP	0.0250		**0.246**	mg/L	5	02/16/2023 11:26	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Calcium	NELAP	0.125		**200**	mg/L	5	02/16/2023 11:26	202915
Chromium	NELAP	0.0015		**0.0034**	mg/L	5	02/16/2023 11:26	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Iron	NELAP	0.125		**24.4**	mg/L	25	02/20/2023 9:42	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Lithium	*	0.0030		**0.0181**	mg/L	5	02/16/2023 11:26	202915
Manganese	NELAP	0.0020		**1.19**	mg/L	5	02/16/2023 11:26	202915
Molybdenum	NELAP	0.0015		**0.0031**	mg/L	5	02/16/2023 11:26	202915
Nickel	NELAP	0.0010		**0.0021**	mg/L	5	02/16/2023 11:26	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:26	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 11:26	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/07/2023 19:56	202649

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-002
Client Sample ID: APW-07-WG-20230130
Matrix: GROUNDWATER
Collection Date: 01/30/2023 14:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-003 **Client Sample ID:** APW-06S-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 9:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**638**	mg/L	1	02/03/2023 14:50	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**247**	mg/L	10	02/10/2023 12:55	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.12**		1	02/08/2023 16:03	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	02/09/2023 15:31	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**24**	mg/L	1	02/10/2023 12:45	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:45	202752
Arsenic	NELAP	0.0010		**0.0013**	mg/L	5	02/10/2023 21:45	202752
Barium	NELAP	0.0010		**0.219**	mg/L	5	02/10/2023 21:45	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:45	202752
Boron	NELAP	0.0250		**7.12**	mg/L	5	02/10/2023 21:45	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:45	202752
Calcium	NELAP	0.125		**94.1**	mg/L	5	02/15/2023 8:42	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:01	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:01	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:45	202752
Lithium	*	0.0030		**0.0406**	mg/L	5	02/10/2023 21:45	202752
Molybdenum	NELAP	0.0015		**0.244**	mg/L	5	02/13/2023 13:41	202752
Nickel	NELAP	0.0010		**0.0051**	mg/L	5	02/14/2023 13:01	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:45	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 21:45	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Arsenic	NELAP	0.0010		**0.0011**	mg/L	5	02/16/2023 11:52	202915
Barium	NELAP	0.0010		**0.202**	mg/L	5	02/16/2023 11:52	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Boron	NELAP	0.0250	S	**6.84**	mg/L	5	02/16/2023 11:52	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Calcium	NELAP	0.125	S	**97.1**	mg/L	5	02/16/2023 11:52	202915
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 11:52	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Iron	NELAP	0.0250		**9.07**	mg/L	5	02/16/2023 11:52	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Lithium	*	0.0030		**0.0406**	mg/L	5	02/16/2023 11:52	202915
Manganese	NELAP	0.0020		**0.506**	mg/L	5	02/16/2023 11:52	202915
Molybdenum	NELAP	0.0015		**0.265**	mg/L	5	02/16/2023 11:52	202915
Nickel	NELAP	0.0010		**0.0014**	mg/L	5	02/16/2023 11:52	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:52	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 11:52	202915

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	02/07/2023 20:03	202649

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-003
Client Sample ID: APW-06S-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 9:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-004 **Client Sample ID:** APW-06D-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**582**	mg/L	1	02/03/2023 14:50	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**269**	mg/L	10	02/10/2023 13:25	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.29**		1	02/08/2023 16:07	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.21**	mg/L	1	02/09/2023 15:33	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**16**	mg/L	1	02/10/2023 13:19	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:51	202752
Arsenic	NELAP	0.0010		**0.0120**	mg/L	5	02/10/2023 21:51	202752
Barium	NELAP	0.0010		**0.152**	mg/L	5	02/10/2023 21:51	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:51	202752
Boron	NELAP	0.0250		**4.39**	mg/L	5	02/10/2023 21:51	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:51	202752
Calcium	NELAP	0.125		**109**	mg/L	5	02/15/2023 8:47	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:06	202752
Cobalt	NELAP	0.0010		**0.0010**	mg/L	5	02/14/2023 13:06	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:51	202752
Lithium	*	0.0030		**0.0194**	mg/L	5	02/10/2023 21:51	202752
Molybdenum	NELAP	0.0015		**0.0583**	mg/L	5	02/13/2023 13:47	202752
Nickel	NELAP	0.0010		**0.0063**	mg/L	5	02/14/2023 13:06	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:51	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 21:51	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:32	202915
Arsenic	NELAP	0.0010		**0.0107**	mg/L	5	02/16/2023 11:32	202915
Barium	NELAP	0.0010		**0.134**	mg/L	5	02/16/2023 11:32	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:32	202915
Boron	NELAP	0.0250		**3.95**	mg/L	5	02/16/2023 11:32	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:32	202915
Calcium	NELAP	0.125		**116**	mg/L	5	02/16/2023 11:32	202915
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 11:32	202915
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	02/16/2023 11:32	202915
Iron	NELAP	0.0250		**3.92**	mg/L	5	02/16/2023 11:32	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:32	202915
Lithium	*	0.0030		**0.0172**	mg/L	5	02/16/2023 11:32	202915
Manganese	NELAP	0.0020		**0.690**	mg/L	5	02/16/2023 11:32	202915
Molybdenum	NELAP	0.0015		**0.0683**	mg/L	5	02/16/2023 11:32	202915
Nickel	NELAP	0.0010		**0.0030**	mg/L	5	02/16/2023 11:32	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:32	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 11:32	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:12	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-004
Client Sample ID: APW-06D-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 11:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-005 **Client Sample ID:** APW-05-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 12:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**696**	mg/L	1	02/03/2023 14:50	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**325**	mg/L	10	02/10/2023 13:33	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.31**		1	02/08/2023 16:12	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.33**	mg/L	1	02/09/2023 15:35	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**18**	mg/L	1	02/10/2023 13:27	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:10	202752
Arsenic	NELAP	0.0010		**0.0026**	mg/L	5	02/10/2023 22:10	202752
Barium	NELAP	0.0010		**0.175**	mg/L	5	02/10/2023 22:10	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:10	202752
Boron	NELAP	0.0250	S	**8.68**	mg/L	5	02/10/2023 22:10	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:10	202752
Calcium	NELAP	0.125	S	**106**	mg/L	5	02/15/2023 18:31	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:26	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:26	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:10	202752
Lithium	*	0.0030		**0.0450**	mg/L	5	02/10/2023 22:10	202752
Molybdenum	NELAP	0.0015		**0.187**	mg/L	5	02/13/2023 13:53	202752
Nickel	NELAP	0.0010		**0.0017**	mg/L	5	02/14/2023 13:26	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:10	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 22:10	202752
Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.								
Matrix spike control limits for B 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	02/16/2023 11:39	202915
Arsenic	NELAP	0.0010		**0.0024**	mg/L	5	02/16/2023 11:39	202915
Barium	NELAP	0.0010		**0.145**	mg/L	5	02/16/2023 11:39	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:39	202915
Boron	NELAP	0.0250		**7.35**	mg/L	5	02/16/2023 11:39	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:39	202915
Calcium	NELAP	0.125		**112**	mg/L	5	02/16/2023 11:39	202915
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 11:39	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:39	202915
Iron	NELAP	0.0250		**1.65**	mg/L	5	02/16/2023 11:39	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:39	202915
Lithium	*	0.0030		**0.0399**	mg/L	5	02/16/2023 11:39	202915
Manganese	NELAP	0.0020		**0.706**	mg/L	5	02/16/2023 11:39	202915
Molybdenum	NELAP	0.0015		**0.217**	mg/L	5	02/16/2023 11:39	202915
Nickel	NELAP	0.0010		**0.0022**	mg/L	5	02/16/2023 11:39	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:39	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 11:39	202915

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-005
Client Sample ID: APW-05-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 12:25

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:14	202742
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-006 **Client Sample ID:** APW-02-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 13:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**852**	mg/L	1	02/03/2023 14:51	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**459**	mg/L	10	02/10/2023 13:40	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**6.98**		1	02/08/2023 16:16	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.23**	mg/L	1	02/09/2023 15:37	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**10**	mg/L	1	02/10/2023 13:35	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:57	202752
Arsenic	NELAP	0.0010		**0.0160**	mg/L	5	02/10/2023 21:57	202752
Barium	NELAP	0.0010		**0.187**	mg/L	5	02/10/2023 21:57	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:57	202752
Boron	NELAP	0.0250		**8.21**	mg/L	5	02/10/2023 21:57	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:57	202752
Calcium	NELAP	0.125		**108**	mg/L	5	02/15/2023 8:52	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:11	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:11	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:57	202752
Lithium	*	0.0030		**0.0425**	mg/L	5	02/10/2023 21:57	202752
Molybdenum	NELAP	0.0015		**0.151**	mg/L	5	02/13/2023 15:01	202752
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:11	202752
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 21:57	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 21:57	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:45	202915
Arsenic	NELAP	0.0010		**0.0185**	mg/L	5	02/16/2023 11:45	202915
Barium	NELAP	0.0010		**0.214**	mg/L	5	02/16/2023 11:45	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:45	202915
Boron	NELAP	0.0250		**7.75**	mg/L	5	02/16/2023 11:45	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:45	202915
Calcium	NELAP	0.125		**144**	mg/L	5	02/16/2023 11:45	202915
Chromium	NELAP	0.0015		**0.0052**	mg/L	5	02/16/2023 11:45	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:45	202915
Iron	NELAP	0.125		**18.2**	mg/L	25	02/20/2023 9:48	202915
Lead	NELAP	0.0010		**0.0027**	mg/L	5	02/16/2023 11:45	202915
Lithium	*	0.0030		**0.0417**	mg/L	5	02/16/2023 11:45	202915
Manganese	NELAP	0.0020		**0.719**	mg/L	5	02/16/2023 11:45	202915
Molybdenum	NELAP	0.0015		**0.165**	mg/L	5	02/16/2023 11:45	202915
Nickel	NELAP	0.0010		**0.0039**	mg/L	5	02/16/2023 11:45	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 11:45	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 11:45	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:16	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-006
Client Sample ID: APW-02-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 13:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-007 **Client Sample ID:** APW-09-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 15:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**360**	mg/L	1	02/03/2023 14:51	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**38**	mg/L	1	02/10/2023 13:43	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.72**		1	02/08/2023 16:19	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	02/09/2023 15:39	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**13**	mg/L	1	02/10/2023 13:43	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:04	202752
Arsenic	NELAP	0.0010		**0.0019**	mg/L	5	02/10/2023 22:04	202752
Barium	NELAP	0.0010		**0.107**	mg/L	5	02/10/2023 22:04	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:04	202752
Boron	NELAP	0.0250		**0.239**	mg/L	5	02/10/2023 22:04	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:04	202752
Calcium	NELAP	0.125		**76.3**	mg/L	5	02/24/2023 10:46	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:16	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:16	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:04	202752
Lithium	*	0.0030		**0.0125**	mg/L	5	02/10/2023 22:04	202752
Molybdenum	NELAP	0.0015		**0.0165**	mg/L	5	02/13/2023 15:07	202752
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:16	202752
Selenium	NELAP	0.0010		**0.0179**	mg/L	5	02/10/2023 22:04	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 22:04	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Arsenic	NELAP	0.0010		**0.0024**	mg/L	5	02/16/2023 12:49	202915
Barium	NELAP	0.0010		**0.122**	mg/L	5	02/16/2023 12:49	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Boron	NELAP	0.0250		**0.225**	mg/L	5	02/16/2023 12:49	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Calcium	NELAP	0.125		**80.3**	mg/L	5	02/16/2023 12:49	202915
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 12:49	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Iron	NELAP	0.0250		**0.149**	mg/L	5	02/16/2023 12:49	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Lithium	*	0.0030		**0.0137**	mg/L	5	02/16/2023 12:49	202915
Manganese	NELAP	0.0020		**0.0945**	mg/L	5	02/16/2023 12:49	202915
Molybdenum	NELAP	0.0015		**0.0173**	mg/L	5	02/16/2023 12:49	202915
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:49	202915
Selenium	NELAP	0.0010		**0.0196**	mg/L	5	02/16/2023 12:49	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 12:49	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:19	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-007
Client Sample ID: APW-09-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 15:50

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-008 **Client Sample ID:** APW-08-WG-20230202

Matrix: GROUNDWATER **Collection Date:** 02/02/2023 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**378**	mg/L	1	02/07/2023 12:03	R324544
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**29**	mg/L	1	02/10/2023 13:51	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.31**		1	02/08/2023 16:21	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	02/09/2023 15:41	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**13**	mg/L	1	02/10/2023 13:51	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:54	202752
Arsenic	NELAP	0.0010		**0.0010**	mg/L	5	02/10/2023 22:54	202752
Barium	NELAP	0.0010		**0.150**	mg/L	5	02/10/2023 22:54	202752
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:54	202752
Boron	NELAP	0.0250		**0.0895**	mg/L	5	02/10/2023 22:54	202752
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:54	202752
Calcium	NELAP	0.125		**72.1**	mg/L	5	02/24/2023 11:05	202752
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/14/2023 13:21	202752
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/14/2023 13:21	202752
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 22:54	202752
Lithium	*	0.0030		**0.0131**	mg/L	5	02/10/2023 22:54	202752
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 15:14	202752
Nickel	NELAP	0.0010		**0.0013**	mg/L	5	02/10/2023 22:54	202752
Selenium	NELAP	0.0010		**0.0128**	mg/L	5	02/10/2023 22:54	202752
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 22:54	202752
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:56	202915
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	02/16/2023 12:56	202915
Barium	NELAP	0.0010		**0.167**	mg/L	5	02/16/2023 12:56	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:56	202915
Boron	NELAP	0.0250		**0.0950**	mg/L	5	02/16/2023 12:56	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:56	202915
Calcium	NELAP	0.125		**79.4**	mg/L	5	02/16/2023 12:56	202915
Chromium	NELAP	0.0015		**0.0027**	mg/L	5	02/16/2023 12:56	202915
Cobalt	NELAP	0.0010		**0.0012**	mg/L	5	02/16/2023 12:56	202915
Iron	NELAP	0.0250		**1.26**	mg/L	5	02/16/2023 12:56	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 12:56	202915
Lithium	*	0.0030		**0.0155**	mg/L	5	02/16/2023 12:56	202915
Manganese	NELAP	0.0020		**0.0561**	mg/L	5	02/16/2023 12:56	202915
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 12:56	202915
Nickel	NELAP	0.0010		**0.0030**	mg/L	5	02/16/2023 12:56	202915
Selenium	NELAP	0.0010		**0.0148**	mg/L	5	02/16/2023 12:56	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 12:56	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:21	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-008
Client Sample ID: APW-08-WG-20230202
Matrix: GROUNDWATER
Collection Date: 02/02/2023 9:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-009 **Client Sample ID:** APW-10S-WG-20230202

Matrix: GROUNDWATER **Collection Date:** 02/02/2023 11:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		**780**	mg/L	2.5	02/07/2023 12:04	R324544
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	02/10/2023 14:15	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.20**		1	02/08/2023 16:26	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	02/09/2023 15:43	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**21**	mg/L	1	02/10/2023 14:15	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**0.0016**	mg/L	5	02/13/2023 9:52	202753
Arsenic	NELAP	0.0010		**0.171**	mg/L	5	02/10/2023 15:35	202753
Barium	NELAP	0.0010		**0.506**	mg/L	5	02/10/2023 15:35	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:52	202753
Boron	NELAP	0.0250		**0.497**	mg/L	5	02/10/2023 15:35	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:52	202753
Calcium	NELAP	0.125		**145**	mg/L	5	02/13/2023 9:52	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 9:52	202753
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:52	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:35	202753
Lithium	*	0.0030		**0.0268**	mg/L	5	02/10/2023 15:35	202753
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 9:52	202753
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:35	202753
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:35	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 15:35	202753
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Arsenic	NELAP	0.0010		**0.191**	mg/L	5	02/16/2023 13:02	202915
Barium	NELAP	0.0010		**0.575**	mg/L	5	02/16/2023 13:02	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Boron	NELAP	0.0250		**0.592**	mg/L	5	02/16/2023 13:02	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Calcium	NELAP	0.125		**145**	mg/L	5	02/16/2023 13:02	202915
Chromium	NELAP	0.0015		**0.0023**	mg/L	5	02/16/2023 13:02	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Iron	NELAP	0.125		**23.8**	mg/L	25	02/20/2023 9:55	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Lithium	*	0.0030		**0.0323**	mg/L	5	02/16/2023 13:02	202915
Manganese	NELAP	0.0020		**0.179**	mg/L	5	02/16/2023 13:02	202915
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 13:02	202915
Nickel	NELAP	0.0010		**0.0013**	mg/L	5	02/16/2023 13:02	202915
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:02	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 13:02	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:28	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-009
Client Sample ID: APW-10S-WG-20230202
Matrix: GROUNDWATER
Collection Date: 02/02/2023 11:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-010 **Client Sample ID:** APW-10D-WG-20230202

Matrix: GROUNDWATER **Collection Date:** 02/02/2023 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**454**	mg/L	1	02/06/2023 12:49	R324475
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**39**	mg/L	1	02/10/2023 14:23	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.57**		1	02/08/2023 16:27	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.12**	mg/L	1	02/09/2023 15:45	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**13**	mg/L	1	02/10/2023 14:23	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:59	202753
Arsenic	NELAP	0.0010		**0.0011**	mg/L	5	02/10/2023 15:41	202753
Barium	NELAP	0.0010		**0.304**	mg/L	5	02/10/2023 15:41	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:59	202753
Boron	NELAP	0.0250		**0.0579**	mg/L	5	02/10/2023 15:41	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 9:59	202753
Calcium	NELAP	0.125		**114**	mg/L	5	02/13/2023 9:59	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 9:59	202753
Cobalt	NELAP	0.0010		**0.0030**	mg/L	5	02/13/2023 9:59	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:41	202753
Lithium	*	0.0030		**0.0120**	mg/L	5	02/10/2023 15:41	202753
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 9:59	202753
Nickel	NELAP	0.0010		**0.0051**	mg/L	5	02/10/2023 15:41	202753
Selenium	NELAP	0.0010		**0.0024**	mg/L	5	02/10/2023 15:41	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 15:41	202753
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:08	202915
Arsenic	NELAP	0.0010		**0.0017**	mg/L	5	02/16/2023 13:08	202915
Barium	NELAP	0.0010		**0.343**	mg/L	5	02/16/2023 13:08	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:08	202915
Boron	NELAP	0.0250		**0.0730**	mg/L	5	02/16/2023 13:08	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:08	202915
Calcium	NELAP	0.125		**122**	mg/L	5	02/16/2023 13:08	202915
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 13:08	202915
Cobalt	NELAP	0.0010		**0.0033**	mg/L	5	02/16/2023 13:08	202915
Iron	NELAP	0.0250		**0.480**	mg/L	5	02/16/2023 13:08	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:08	202915
Lithium	*	0.0030		**0.0146**	mg/L	5	02/16/2023 13:08	202915
Manganese	NELAP	0.0020		**0.941**	mg/L	5	02/16/2023 13:08	202915
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 13:08	202915
Nickel	NELAP	0.0010		**0.0066**	mg/L	5	02/16/2023 13:08	202915
Selenium	NELAP	0.0010		**0.0027**	mg/L	5	02/16/2023 13:08	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 13:08	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:34	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-010
Client Sample ID: APW-10D-WG-20230202
Matrix: GROUNDWATER
Collection Date: 02/02/2023 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-011 **Client Sample ID:** APW-04-WG-20230202

Matrix: GROUNDWATER **Collection Date:** 02/02/2023 14:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**416**	mg/L	1	02/06/2023 12:49	R324475
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**62**	mg/L	2	02/13/2023 11:51	R324732
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.21**		1	02/08/2023 16:29	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.15**	mg/L	1	02/09/2023 15:55	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**10**	mg/L	1	02/10/2023 14:31	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:24	202753
Arsenic	NELAP	0.0010		**0.0011**	mg/L	5	02/10/2023 16:06	202753
Barium	NELAP	0.0010		**0.116**	mg/L	5	02/10/2023 16:06	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:24	202753
Boron	NELAP	0.0250		**0.619**	mg/L	5	02/10/2023 16:06	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:24	202753
Calcium	NELAP	0.125	S	**93.3**	mg/L	5	02/13/2023 10:24	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 10:24	202753
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:24	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 16:06	202753
Lithium	*	0.0030		**0.0292**	mg/L	5	02/10/2023 16:06	202753
Molybdenum	NELAP	0.0015		**0.0383**	mg/L	5	02/13/2023 10:24	202753
Nickel	NELAP	0.0010		**0.0021**	mg/L	5	02/10/2023 16:06	202753
Selenium	NELAP	0.0010		**0.0090**	mg/L	5	02/10/2023 16:06	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 16:06	202753
Matrix spike control limits for Ca 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	02/16/2023 13:15	202915
Arsenic	NELAP	0.0010		**0.0017**	mg/L	5	02/16/2023 13:15	202915
Barium	NELAP	0.0010		**0.134**	mg/L	5	02/16/2023 13:15	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:15	202915
Boron	NELAP	0.0250		**0.650**	mg/L	5	02/16/2023 13:15	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:15	202915
Calcium	NELAP	0.125		**100**	mg/L	5	02/16/2023 13:15	202915
Chromium	NELAP	0.0015		**0.0016**	mg/L	5	02/16/2023 13:15	202915
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:15	202915
Iron	NELAP	0.0250		**0.615**	mg/L	5	02/16/2023 13:15	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:15	202915
Lithium	*	0.0030		**0.0326**	mg/L	5	02/16/2023 13:15	202915
Manganese	NELAP	0.0020		**0.187**	mg/L	5	02/16/2023 13:15	202915
Molybdenum	NELAP	0.0015		**0.0377**	mg/L	5	02/16/2023 13:15	202915
Nickel	NELAP	0.0010		**0.0042**	mg/L	5	02/16/2023 13:15	202915
Selenium	NELAP	0.0010		**0.0099**	mg/L	5	02/16/2023 13:15	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 13:15	202915
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 19:37	202742

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-011
Client Sample ID: APW-04-WG-20230202
Matrix: GROUNDWATER
Collection Date: 02/02/2023 14:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/10/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-012 **Client Sample ID:** APW-01R-WG-20230202

Matrix: GROUNDWATER **Collection Date:** 02/02/2023 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**384**	mg/L	1	02/06/2023 12:49	R324475
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**74**	mg/L	5	02/13/2023 12:08	R324732
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**6.57**		1	02/08/2023 16:31	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.17**	mg/L	1	02/09/2023 15:58	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**7**	mg/L	1	02/10/2023 14:42	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:05	202753
Arsenic	NELAP	0.0010		**0.0010**	mg/L	5	02/10/2023 15:47	202753
Barium	NELAP	0.0010		**0.155**	mg/L	5	02/10/2023 15:47	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:05	202753
Boron	NELAP	0.0250		**0.205**	mg/L	5	02/10/2023 15:47	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:05	202753
Calcium	NELAP	0.125		**71.4**	mg/L	5	02/13/2023 10:05	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 10:05	202753
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:05	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:47	202753
Lithium	*	0.0030		**0.0135**	mg/L	5	02/10/2023 15:47	202753
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 10:05	202753
Nickel	NELAP	0.0010		**0.0059**	mg/L	5	02/10/2023 15:47	202753
Selenium	NELAP	0.0010		**0.0032**	mg/L	5	02/10/2023 15:47	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 15:47	202753
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:21	202915
Arsenic	NELAP	0.0010		**0.0016**	mg/L	5	02/16/2023 13:21	202915
Barium	NELAP	0.0010		**0.178**	mg/L	5	02/16/2023 13:21	202915
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:21	202915
Boron	NELAP	0.0250		**0.221**	mg/L	5	02/16/2023 13:21	202915
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:21	202915
Calcium	NELAP	0.125	S	**75.5**	mg/L	5	02/16/2023 13:21	202915
Chromium	NELAP	0.0015		**0.0022**	mg/L	5	02/16/2023 13:21	202915
Cobalt	NELAP	0.0010		**0.0013**	mg/L	5	02/16/2023 13:21	202915
Iron	NELAP	0.0250		**0.627**	mg/L	5	02/16/2023 13:21	202915
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 13:21	202915
Lithium	*	0.0030		**0.0157**	mg/L	5	02/16/2023 13:21	202915
Manganese	NELAP	0.0020		**0.0964**	mg/L	5	02/16/2023 13:21	202915
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 13:21	202915
Nickel	NELAP	0.0010		**0.0081**	mg/L	5	02/16/2023 13:21	202915
Selenium	NELAP	0.0010		**0.0037**	mg/L	5	02/16/2023 13:21	202915
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 13:21	202915

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	02/10/2023 11:37	202743

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-012
Client Sample ID: APW-01R-WG-20230202
Matrix: GROUNDWATER
Collection Date: 02/02/2023 15:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-013 **Client Sample ID:** EB-01-WQ-20230130

Matrix: AQUEOUS **Collection Date:** 01/30/2023 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20	H	**< 20**	mg/L	1	02/22/2023 11:44	R325208
Sample required re-analysis out of hold time.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	02/10/2023 15:19	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**5.54**		1	02/08/2023 16:37	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	02/09/2023 15:59	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**< 1**	mg/L	1	02/10/2023 15:19	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/18/2023 5:39	202963
Boron	NELAP	0.0250	S	**< 0.0250**	mg/L	5	02/20/2023 12:15	202963
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/18/2023 5:39	202963
Calcium	NELAP	0.125		**< 0.125**	mg/L	5	02/16/2023 16:33	202963
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 16:33	202963
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Lithium	*	0.0030		**< 0.0030**	mg/L	5	02/18/2023 5:39	202963
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/18/2023 5:39	202963
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 16:33	202963
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 16:33	202963
Matrix spike recovered outside upper control limits. Sample results are below the reporting limit. Data is reportable.								
LCS recovered outside upper control limits for Sb, As, and Ba. Sample results are below the reporting limit. Data is reportable per the TNI Standard.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Arsenic	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Barium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:37	202916
Boron	NELAP	0.0250		**< 0.0250**	mg/L	5	02/17/2023 9:37	202916
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:37	202916
Calcium	NELAP	0.125		**< 0.125**	mg/L	5	02/16/2023 14:25	202916
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 14:25	202916
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Iron	NELAP	0.0250		**< 0.0250**	mg/L	5	02/16/2023 14:25	202916
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Lithium	*	0.0030		**< 0.0030**	mg/L	5	02/17/2023 9:37	202916
Manganese	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 14:25	202916
Molybdenum	NELAP	0.0015		**< 0.0015**	mg/L	5	02/17/2023 9:37	202916
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:25	202916
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 14:25	202916

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-013
Client Sample ID: EB-01-WQ-20230130
Matrix: AQUEOUS
Collection Date: 01/30/2023 9:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 11:39	202743
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-014 **Client Sample ID:** DUP-01-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 0:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**670**	mg/L	1	02/03/2023 14:51	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**305**	mg/L	10	02/10/2023 15:32	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.33**		1	02/08/2023 16:40	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.33**	mg/L	1	02/09/2023 16:02	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**18**	mg/L	1	02/10/2023 15:27	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:11	202753
Arsenic	NELAP	0.0010		**0.0018**	mg/L	5	02/10/2023 15:54	202753
Barium	NELAP	0.0010		**0.135**	mg/L	5	02/10/2023 15:54	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:11	202753
Boron	NELAP	0.0250		**6.76**	mg/L	5	02/10/2023 15:54	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:11	202753
Calcium	NELAP	0.125		**111**	mg/L	5	02/13/2023 10:11	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 10:11	202753
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:11	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:54	202753
Lithium	*	0.0030		**0.0375**	mg/L	5	02/10/2023 15:54	202753
Molybdenum	NELAP	0.0015		**0.199**	mg/L	5	02/13/2023 10:11	202753
Nickel	NELAP	0.0010		**0.0013**	mg/L	5	02/10/2023 15:54	202753
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 15:54	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 15:54	202753
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:31	202916
Arsenic	NELAP	0.0010		**0.0025**	mg/L	5	02/16/2023 14:31	202916
Barium	NELAP	0.0010		**0.148**	mg/L	5	02/16/2023 14:31	202916
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:43	202916
Boron	NELAP	0.0250		**7.59**	mg/L	5	02/17/2023 9:43	202916
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:43	202916
Calcium	NELAP	0.125		**114**	mg/L	5	02/16/2023 14:31	202916
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/16/2023 14:31	202916
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:31	202916
Iron	NELAP	0.0250		**1.58**	mg/L	5	02/16/2023 14:31	202916
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:31	202916
Lithium	*	0.0030		**0.0402**	mg/L	5	02/17/2023 9:43	202916
Manganese	NELAP	0.0020		**0.693**	mg/L	5	02/16/2023 14:31	202916
Molybdenum	NELAP	0.0015		**0.212**	mg/L	5	02/17/2023 9:43	202916
Nickel	NELAP	0.0010		**0.0018**	mg/L	5	02/16/2023 14:31	202916
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:31	202916
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 14:31	202916
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		**< 0.00020**	mg/L	1	02/10/2023 11:50	202743

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-014 **Client Sample ID:** DUP-01-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 0:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Lab ID: 23020169-015 **Client Sample ID:** DUP-02-WG-20230201

Matrix: GROUNDWATER **Collection Date:** 02/01/2023 0:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**866**	mg/L	1	02/03/2023 14:52	R324399
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**455**	mg/L	10	02/10/2023 15:40	R324668
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		**7.05**		1	02/08/2023 16:42	R324541
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.22**	mg/L	1	02/09/2023 16:04	R324574
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**10**	mg/L	1	02/10/2023 15:35	R324670
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:17	202753
Arsenic	NELAP	0.0010		**0.0138**	mg/L	5	02/10/2023 16:00	202753
Barium	NELAP	0.0010		**0.154**	mg/L	5	02/10/2023 16:00	202753
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:17	202753
Boron	NELAP	0.0250		**7.39**	mg/L	5	02/10/2023 16:00	202753
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:17	202753
Calcium	NELAP	0.125		**144**	mg/L	5	02/13/2023 10:17	202753
Chromium	NELAP	0.0015		**< 0.0015**	mg/L	5	02/13/2023 10:17	202753
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/13/2023 10:17	202753
Lead	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 16:00	202753
Lithium	*	0.0030		**0.0387**	mg/L	5	02/10/2023 16:00	202753
Molybdenum	NELAP	0.0015		**0.155**	mg/L	5	02/13/2023 10:17	202753
Nickel	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 16:00	202753
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/10/2023 16:00	202753
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/10/2023 16:00	202753
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:57	202916
Arsenic	NELAP	0.0010		**0.0175**	mg/L	5	02/16/2023 14:57	202916
Barium	NELAP	0.0010		**0.159**	mg/L	5	02/16/2023 14:57	202916
Beryllium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:50	202916
Boron	NELAP	0.0250	S	**8.32**	mg/L	5	02/17/2023 9:50	202916
Cadmium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/17/2023 9:50	202916
Calcium	NELAP	0.125	S	**149**	mg/L	5	02/16/2023 14:57	202916
Chromium	NELAP	0.0015		**0.0022**	mg/L	5	02/16/2023 14:57	202916
Cobalt	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:57	202916
Iron	NELAP	0.0250		**11.7**	mg/L	5	02/16/2023 14:57	202916
Lead	NELAP	0.0010		**0.0023**	mg/L	5	02/16/2023 14:57	202916
Lithium	*	0.0030		**0.0440**	mg/L	5	02/17/2023 9:50	202916
Manganese	NELAP	0.0020		**0.712**	mg/L	5	02/16/2023 14:57	202916
Molybdenum	NELAP	0.0015		**0.160**	mg/L	5	02/17/2023 9:50	202916
Nickel	NELAP	0.0010		**0.0023**	mg/L	5	02/16/2023 14:57	202916
Selenium	NELAP	0.0010		**< 0.0010**	mg/L	5	02/16/2023 14:57	202916
Thallium	NELAP	0.0020		**< 0.0020**	mg/L	5	02/16/2023 14:57	202916

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	02/10/2023 11:53	202743

Client: ERM
Work Order: 23020169
Client Project: GTEC
Report Date: 28-Feb-23
Lab ID: 23020169-015
Client Sample ID: DUP-02-WG-20230201
Matrix: GROUNDWATER
Collection Date: 02/01/2023 0:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261
Radium-228	*	0		**See Attached**	pci/L	1	02/16/2023 0:00	R325261

Client: ERM
Client Project: GTEC

Work Order: 23020169
Report Date: 28-Feb-23

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
23020169-001	APW-03-WG-20230130	Groundwater	4	01/30/2023 13:30
23020169-002	APW-07-WG-20230130	Groundwater	4	01/30/2023 14:45
23020169-003	APW-06S-WG-20230201	Groundwater	4	02/01/2023 9:10
23020169-004	APW-06D-WG-20230201	Groundwater	4	02/01/2023 11:00
23020169-005	APW-05-WG-20230201	Groundwater	4	02/01/2023 12:25
23020169-006	APW-02-WG-20230201	Groundwater	4	02/01/2023 13:50
23020169-007	APW-09-WG-20230201	Groundwater	4	02/01/2023 15:50
23020169-008	APW-08-WG-20230202	Groundwater	4	02/02/2023 9:45
23020169-009	APW-10S-WG-20230202	Groundwater	4	02/02/2023 11:10
23020169-010	APW-10D-WG-20230202	Groundwater	4	02/02/2023 12:30
23020169-011	APW-04-WG-20230202	Groundwater	4	02/02/2023 14:05
23020169-012	APW-01R-WG-20230202	Groundwater	4	02/02/2023 15:10
23020169-013	EB-01-WQ-20230130	Aqueous	5	01/30/2023 9:40
23020169-014	DUP-01-WG-20230201	Groundwater	4	02/01/2023 0:01
23020169-015	DUP-02-WG-20230201	Groundwater	4	02/01/2023 0:02

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23020169-001A	APW-03-WG-20230130	01/30/2023 13:30	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 12:55
	SW-846 9036 (Total)				02/10/2023 12:31
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:00
	SW-846 9214 (Total)				02/09/2023 15:22
	SW-846 9251 (Total)				02/10/2023 12:26
23020169-001B	APW-03-WG-20230130	01/30/2023 13:30	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-001C	APW-03-WG-20230130	01/30/2023 13:30	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/07/2023 9:43	02/09/2023 18:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/07/2023 9:43	02/10/2023 11:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/10/2023 14:02	02/13/2023 23:02
	SW-846 7470A (Total)			02/07/2023 8:30	02/07/2023 19:54
23020169-001D	APW-03-WG-20230130	01/30/2023 13:30	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 20:48
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 13:28
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 12:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 8:33
23020169-002A	APW-07-WG-20230130	01/30/2023 14:45	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/06/2023 12:21
	SW-846 9036 (Total)				02/10/2023 12:34
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:02
	SW-846 9214 (Total)				02/07/2023 12:35
	SW-846 9251 (Total)				02/10/2023 12:34
23020169-002B	APW-07-WG-20230130	01/30/2023 14:45	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-002C	APW-07-WG-20230130	01/30/2023 14:45	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 16:52
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 11:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/20/2023 9:42
	SW-846 7470A (Total)			02/07/2023 8:30	02/07/2023 19:56
23020169-002D	APW-07-WG-20230130	01/30/2023 14:45	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 21:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 13:34
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 12:56
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 8:37

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23020169-003A	APW-06S-WG-20230201	02/01/2023 9:10	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:50
	SW-846 9036 (Total)				02/10/2023 12:55
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:03
	SW-846 9214 (Total)				02/09/2023 15:31
	SW-846 9251 (Total)				02/10/2023 12:45
23020169-003B	APW-06S-WG-20230201	02/01/2023 9:10	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-003C	APW-06S-WG-20230201	02/01/2023 9:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 17:23
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 11:52
	SW-846 7470A (Total)			02/07/2023 8:30	02/07/2023 20:03
23020169-003D	APW-06S-WG-20230201	02/01/2023 9:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 21:45
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 13:41
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:01
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 8:42
23020169-004A	APW-06D-WG-20230201	02/01/2023 11:00	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:50
	SW-846 9036 (Total)				02/10/2023 13:25
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:07
	SW-846 9214 (Total)				02/09/2023 15:33
	SW-846 9251 (Total)				02/10/2023 13:19
23020169-004B	APW-06D-WG-20230201	02/01/2023 11:00	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-004C	APW-06D-WG-20230201	02/01/2023 11:00	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 16:58
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 11:32
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/23/2023 11:15
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:12
23020169-004D	APW-06D-WG-20230201	02/01/2023 11:00	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 21:51
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 13:47
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:06
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 8:47
23020169-005A	APW-05-WG-20230201	02/01/2023 12:25	02/03/2023 8:45		

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:50
	SW-846 9036 (Total)				02/10/2023 13:33
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:12
	SW-846 9214 (Total)				02/09/2023 15:35
	SW-846 9251 (Total)				02/10/2023 13:27
23020169-005B	APW-05-WG-20230201	02/01/2023 12:25	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-005C	APW-05-WG-20230201	02/01/2023 12:25	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 17:05
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 11:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/23/2023 11:34
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:14
23020169-005D	APW-05-WG-20230201	02/01/2023 12:25	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 22:10
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 13:53
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:26
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 18:31
23020169-006A	APW-02-WG-20230201	02/01/2023 13:50	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:51
	SW-846 9036 (Total)				02/10/2023 13:40
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:16
	SW-846 9214 (Total)				02/09/2023 15:37
	SW-846 9251 (Total)				02/10/2023 13:35
23020169-006B	APW-02-WG-20230201	02/01/2023 13:50	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-006C	APW-02-WG-20230201	02/01/2023 13:50	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 17:11
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 11:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/20/2023 9:48
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:16
23020169-006D	APW-02-WG-20230201	02/01/2023 13:50	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 21:57
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 15:01
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:11
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/15/2023 8:52
23020169-007A	APW-09-WG-20230201	02/01/2023 15:50	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:51

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9036 (Total)				02/10/2023 13:43
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:19
	SW-846 9214 (Total)				02/09/2023 15:39
	SW-846 9251 (Total)				02/10/2023 13:43
23020169-007B	APW-09-WG-20230201	02/01/2023 15:50	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-007C	APW-09-WG-20230201	02/01/2023 15:50	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 17:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 12:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/23/2023 11:53
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:19
23020169-007D	APW-09-WG-20230201	02/01/2023 15:50	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 22:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 15:07
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:16
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/24/2023 10:46
23020169-008A	APW-08-WG-20230202	02/02/2023 9:45	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/07/2023 12:03
	SW-846 9036 (Total)				02/10/2023 13:51
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:21
	SW-846 9214 (Total)				02/09/2023 15:41
	SW-846 9251 (Total)				02/10/2023 13:51
23020169-008B	APW-08-WG-20230202	02/02/2023 9:45	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-008C	APW-08-WG-20230202	02/02/2023 9:45	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 18:33
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 12:56
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/23/2023 12:12
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/24/2023 10:59
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:21
23020169-008D	APW-08-WG-20230202	02/02/2023 9:45	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/10/2023 22:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/13/2023 15:14
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/14/2023 13:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:06	02/24/2023 11:05
23020169-009A	APW-10S-WG-20230202	02/02/2023 11:10	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/07/2023 12:04

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9036 (Total)				02/10/2023 14:15
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:26
	SW-846 9214 (Total)				02/09/2023 15:43
	SW-846 9251 (Total)				02/10/2023 14:15
23020169-009B	APW-10S-WG-20230202	02/02/2023 11:10	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-009C	APW-10S-WG-20230202	02/02/2023 11:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 18:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 13:02
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/20/2023 9:55
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:28
23020169-009D	APW-10S-WG-20230202	02/02/2023 11:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 15:35
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 9:52
23020169-010A	APW-10D-WG-20230202	02/02/2023 12:30	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/06/2023 12:49
	SW-846 9036 (Total)				02/10/2023 14:23
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:27
	SW-846 9214 (Total)				02/09/2023 15:45
	SW-846 9251 (Total)				02/10/2023 14:23
23020169-010B	APW-10D-WG-20230202	02/02/2023 12:30	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-010C	APW-10D-WG-20230202	02/02/2023 12:30	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 18:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 13:08
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:34
23020169-010D	APW-10D-WG-20230202	02/02/2023 12:30	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 15:41
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 9:59
23020169-011A	APW-04-WG-20230202	02/02/2023 14:05	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/06/2023 12:49
	SW-846 9036 (Total)				02/13/2023 11:51
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:29
	SW-846 9214 (Total)				02/09/2023 15:55
	SW-846 9251 (Total)				02/10/2023 14:31
23020169-011B	APW-04-WG-20230202	02/02/2023 14:05	02/03/2023 8:45		

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	EPA 903.0/904.0, Radium 226/228				02/10/2023 0:00
23020169-011C	APW-04-WG-20230202	02/02/2023 14:05	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 18:51
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 13:15
	SW-846 7470A (Total)			02/09/2023 10:45	02/10/2023 19:37
23020169-011D	APW-04-WG-20230202	02/02/2023 14:05	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 16:06
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 10:24
23020169-012A	APW-01R-WG-20230202	02/02/2023 15:10	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/06/2023 12:49
	SW-846 9036 (Total)				02/13/2023 12:08
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:31
	SW-846 9214 (Total)				02/09/2023 15:58
	SW-846 9251 (Total)				02/10/2023 14:42
23020169-012B	APW-01R-WG-20230202	02/02/2023 15:10	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/16/2023 0:00
23020169-012C	APW-01R-WG-20230202	02/02/2023 15:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/15/2023 18:58
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:27	02/16/2023 13:21
	SW-846 7470A (Total)			02/09/2023 10:46	02/10/2023 11:37
23020169-012D	APW-01R-WG-20230202	02/02/2023 15:10	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 15:47
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 10:05
23020169-013A	EB-01-WQ-20230130	01/30/2023 9:40	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/22/2023 11:44
	SW-846 9036 (Total)				02/10/2023 15:19
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:37
	SW-846 9214 (Total)				02/09/2023 15:59
	SW-846 9251 (Total)				02/10/2023 15:19
23020169-013B	EB-01-WQ-20230130	01/30/2023 9:40	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/16/2023 0:00
23020169-013C	EB-01-WQ-20230130	01/30/2023 9:40	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/15/2023 20:13
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/16/2023 14:25
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/17/2023 9:37
	SW-846 7470A (Total)			02/09/2023 10:46	02/10/2023 11:39

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
23020169-013E	EB-01-WQ-20230130	01/30/2023 9:40	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/15/2023 16:05	02/16/2023 16:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/15/2023 16:05	02/18/2023 5:39
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/15/2023 16:05	02/20/2023 12:15
23020169-014A	DUP-01-WG-20230201	02/01/2023 0:01	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:51
	SW-846 9036 (Total)				02/10/2023 15:32
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:40
	SW-846 9214 (Total)				02/09/2023 16:02
	SW-846 9251 (Total)				02/10/2023 15:27
23020169-014B	DUP-01-WG-20230201	02/01/2023 0:01	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/16/2023 0:00
23020169-014C	DUP-01-WG-20230201	02/01/2023 0:01	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/15/2023 20:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/16/2023 14:31
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/17/2023 9:43
	SW-846 7470A (Total)			02/09/2023 10:46	02/10/2023 11:50
23020169-014D	DUP-01-WG-20230201	02/01/2023 0:01	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 15:54
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 10:11
23020169-015A	DUP-02-WG-20230201	02/01/2023 0:02	02/03/2023 8:45		
	Standard Methods 2540 C (Total) 1997, 2011				02/03/2023 14:52
	SW-846 9036 (Total)				02/10/2023 15:40
	SW-846 9040B, Laboratory Analyzed				02/08/2023 16:42
	SW-846 9214 (Total)				02/09/2023 16:04
	SW-846 9251 (Total)				02/10/2023 15:35
23020169-015B	DUP-02-WG-20230201	02/01/2023 0:02	02/03/2023 8:45		
	EPA 903.0/904.0, Radium 226/228				02/16/2023 0:00
23020169-015C	DUP-02-WG-20230201	02/01/2023 0:02	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/15/2023 20:25
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/16/2023 14:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			02/15/2023 6:37	02/17/2023 9:50
	SW-846 7470A (Total)			02/09/2023 10:46	02/10/2023 11:53
23020169-015D	DUP-02-WG-20230201	02/01/2023 0:02	02/03/2023 8:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/10/2023 16:00
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			02/09/2023 11:07	02/13/2023 10:17

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R324399 **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	02/03/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	02/03/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	02/03/2023

Batch R324399 **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		**916**	1000	0	91.6	90	110	02/03/2023
Total Dissolved Solids		20		**986**	1000	0	98.6	90	110	02/03/2023
Total Dissolved Solids		20		**904**	1000	0	90.4	90	110	02/03/2023

Batch R324475 **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	02/06/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	02/06/2023

Batch R324475 **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		**936**	1000	0	93.6	90	110	02/06/2023
Total Dissolved Solids		20		**932**	1000	0	93.2	90	110	02/06/2023

Batch R324475 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020169-002ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**832**				824.0	0.97	02/06/2023

Batch R324544 **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	02/07/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R324544 **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		**962**	1000	0	96.2	90	110	02/07/2023

Batch R324544 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 23020169-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		50		**780**				780.0	0.00	02/07/2023

Batch R325126 **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	02/21/2023

Batch R325126 **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		**934**	1000	0	93.4	90	110	02/21/2023

Batch R325208 **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	02/22/2023
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	02/22/2023

Batch R325208 **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		**912**	1000	0	91.2	90	110	02/22/2023
Total Dissolved Solids		20		**1040**	1000	0	104.4	90	110	02/22/2023

SW-846 9036 (TOTAL)

Batch R324668 **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	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9036 (TOTAL)

Batch R324668 **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	96.0	90	110	02/10/2023

Batch R324668 **SampType:** MS Units **mg/L**
SampID: 23020169-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		100		**434**	200.0	247.3	93.6	85	115	02/10/2023

Batch R324668 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020169-003AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		100		**436**	200.0	247.3	94.5	434.5	0.39	02/10/2023

Batch R324732 **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	02/13/2023

Batch R324732 **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	96.2	90	110	02/13/2023

Batch R324732 **SampType:** MS Units **mg/L**
SampID: 23020169-012AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**168**	100.0	74.09	93.7	85	115	02/13/2023

Batch R324732 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 23020169-012AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**166**	100.0	74.09	91.8	167.8	1.13	02/13/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9040B, LABORATORY ANALYZED

Batch R324523 **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		**7.01**	7.000	0	100.1	99.1	100.8	02/07/2023

Batch R324541 **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	99.1	100.8	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.45**				7.450	0.00	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-002ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.23**				7.230	0.00	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-003ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.16**				7.120	0.56	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-004ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.28**				7.290	0.14	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-005ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.32**				7.310	0.14	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.02**				6.980	0.57	02/08/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9040B, LABORATORY ANALYZED

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-007ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.72**				7.720	0.00	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-008ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.35**				7.310	0.55	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-009ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.20**				7.200	0.00	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-010ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.57**				7.570	0.00	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-011ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.23**				7.210	0.28	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-012ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**6.58**				6.570	0.15	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-013ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**5.48**				5.540	1.09	02/08/2023

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-014ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.34**				7.330	0.14	02/08/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9040B, LABORATORY ANALYZED

Batch R324541 **SampType:** DUP Units RPD Limit: **10**

SampID: 23020169-015ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Lab pH		1.00		**7.06**				7.050	0.14	02/08/2023

SW-846 9214 (TOTAL)

Batch R324472 **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**	0.0370	0	0	-100	100	02/07/2023

Batch R324472 **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		**0.98**	1.000	0	97.8	90	110	02/07/2023

Batch R324472 **SampType:** MS Units **mg/L**

SampID: 23020169-002AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.33**	2.000	0.1930	107.0	75	125	02/07/2023

Batch R324472 **SampType:** MSD Units **mg/L** RPD Limit: **15**

SampID: 23020169-002AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.34**	2.000	0.1930	107.2	2.334	0.09	02/07/2023

Batch R324574 **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**	0.0370	0	0	-100	100	02/09/2023

Batch R324574 **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	99.9	90	110	02/09/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9214 (TOTAL)

Batch R324574 **SampType:** MS Units **mg/L**
SampID: 23020169-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.22**	2.000	0.2320	99.3	75	125	02/09/2023

Batch R324574 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020169-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.30**	2.000	0.2320	103.2	2.218	3.46	02/09/2023

Batch R324574 **SampType:** MS Units **mg/L**
SampID: 23020169-010AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.15**	2.000	0.1150	101.6	75	125	02/09/2023

Batch R324574 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020169-010AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.18**	2.000	0.1150	103.0	2.146	1.34	02/09/2023

Batch R324574 **SampType:** MS Units **mg/L**
SampID: 23020169-015AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.24**	2.000	0.2210	100.9	75	125	02/09/2023

Batch R324574 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020169-015AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.34**	2.000	0.2210	106.2	2.239	4.62	02/09/2023

SW-846 9251 (TOTAL)

Batch R324670 **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		1		**< 1**	0.5000	0	0	-100	100	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 9251 (TOTAL)

Batch R324670 **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		1		**20**	20.00	0	98.4	90	110	02/10/2023

Batch R324670 **SampType:** MS Units **mg/L**
SampID: 23020169-003AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**43**	20.00	24.41	92.5	85	115	02/10/2023

Batch R324670 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020169-003AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		1		**42**	20.00	24.41	89.6	42.91	1.36	02/10/2023

Batch R324670 **SampType:** MS Units **mg/L**
SampID: 23020169-012AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**27**	20.00	7.260	99.2	85	115	02/10/2023

Batch R324670 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 23020169-012AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		1		**26**	20.00	7.260	95.5	27.09	2.73	02/10/2023

Batch R324741 **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		1		**< 1**	0.5000	0	0	-100	100	02/13/2023

Batch R324741 **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		1		**21**	20.00	0	103.0	90	110	02/13/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202752 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202752

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	02/10/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/10/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/10/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/10/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/10/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/10/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	02/13/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	02/13/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/10/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/10/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/10/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/13/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/10/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/10/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/10/2023

Batch 202752 **SampType:** LCS Units **mg/L**

SampID: LCS-202752

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.434**	0.5000	0	86.7	80	120	02/10/2023
Arsenic		0.0010		**0.474**	0.5000	0	94.8	80	120	02/10/2023
Barium		0.0010		**1.92**	2.000	0	95.9	80	120	02/10/2023
Beryllium		0.0010		**0.0465**	0.0500	0	93.0	80	120	02/10/2023
Boron		0.0250		**0.489**	0.5000	0	97.9	80	120	02/10/2023
Cadmium		0.0010		**0.0454**	0.0500	0	90.8	80	120	02/10/2023
Calcium		0.125		**2.37**	2.500	0	94.7	80	120	02/13/2023
Chromium		0.0015		**0.183**	0.2000	0	91.3	80	120	02/13/2023
Cobalt		0.0010		**0.443**	0.5000	0	88.7	80	120	02/10/2023
Lead		0.0010		**0.476**	0.5000	0	95.1	80	120	02/10/2023
Lithium	*	0.0030		**0.463**	0.5000	0	92.7	80	120	02/10/2023
Molybdenum		0.0015		**0.446**	0.5000	0	89.1	80	120	02/13/2023
Nickel		0.0010		**0.446**	0.5000	0	89.2	80	120	02/10/2023
Selenium		0.0010		**0.444**	0.5000	0	88.8	80	120	02/10/2023
Thallium		0.0020		**0.234**	0.2500	0	93.5	80	120	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202752 **SampType:** MS Units **mg/L**

SampID: 23020169-005DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.444**	0.5000	0	88.8	75	125	02/10/2023
Arsenic		0.0010		**0.455**	0.5000	0.002554	90.4	75	125	02/10/2023
Barium		0.0010		**2.12**	2.000	0.1750	97.1	75	125	02/10/2023
Beryllium		0.0010		**0.0438**	0.0500	0	87.6	75	125	02/10/2023
Boron		0.0250	S	**6.92**	0.5000	8.675	-351.8	75	125	02/10/2023
Cadmium		0.0010		**0.0432**	0.0500	0	86.4	75	125	02/10/2023
Calcium		0.125	S	**137**	2.500	106.1	1231	75	125	02/15/2023
Chromium		0.0015		**0.184**	0.2000	0	92.1	75	125	02/14/2023
Cobalt		0.0010		**0.437**	0.5000	0.0005994	87.2	75	125	02/14/2023
Lead		0.0010		**0.483**	0.5000	0	96.6	75	125	02/10/2023
Lithium	*	0.0030		**0.472**	0.5000	0.04503	85.5	75	125	02/10/2023
Molybdenum		0.0015		**0.672**	0.5000	0.1868	97.1	75	125	02/13/2023
Nickel		0.0010		**0.436**	0.5000	0.001739	86.8	75	125	02/14/2023
Selenium		0.0010		**0.426**	0.5000	0	85.2	75	125	02/10/2023
Thallium		0.0020		**0.234**	0.2500	0	93.8	75	125	02/10/2023

Batch 202752 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020169-005DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.454**	0.5000	0	90.8	0.4442	2.17	02/10/2023
Arsenic		0.0010		**0.465**	0.5000	0.002554	92.4	0.4548	2.12	02/10/2023
Barium		0.0010		**2.15**	2.000	0.1750	98.8	2.117	1.60	02/10/2023
Beryllium		0.0010		**0.0436**	0.0500	0	87.2	0.04382	0.50	02/10/2023
Boron		0.0250	S	**7.12**	0.5000	8.675	-310.6	6.916	2.94	02/10/2023
Cadmium		0.0010		**0.0441**	0.0500	0	88.2	0.04320	2.10	02/10/2023
Calcium		0.125	S	**152**	2.500	106.1	1840	136.9	10.54	02/15/2023
Chromium		0.0015		**0.202**	0.2000	0	100.9	0.1842	9.13	02/14/2023
Cobalt		0.0010		**0.491**	0.5000	0.0005994	98.0	0.4365	11.67	02/14/2023
Lead		0.0010		**0.487**	0.5000	0	97.5	0.4832	0.86	02/10/2023
Lithium	*	0.0030		**0.476**	0.5000	0.04503	86.2	0.4725	0.73	02/10/2023
Molybdenum		0.0015		**0.642**	0.5000	0.1868	91.1	0.6724	4.59	02/13/2023
Nickel		0.0010		**0.477**	0.5000	0.001739	95.1	0.4358	9.07	02/14/2023
Selenium		0.0010		**0.432**	0.5000	0	86.4	0.4260	1.39	02/10/2023
Thallium		0.0020		**0.229**	0.2500	0	91.6	0.2344	2.36	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202753 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202753

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	02/13/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/10/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/10/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/13/2023
Boron	*	0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/10/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/13/2023
Calcium	*	0.125		**< 0.125**	0.0700	0	0	-100	100	02/13/2023
Chromium		0.0150		**< 0.0150**	0.0007	0	0	-100	100	02/13/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/13/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/10/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/10/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/13/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/10/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/10/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/10/2023

Batch 202753 **SampType:** LCS Units **mg/L**

SampID: LCS-202753

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.454**	0.5000	0	90.8	85	115	02/13/2023
Arsenic		0.0010		**0.475**	0.5000	0	94.9	85	115	02/10/2023
Barium		0.0010		**1.93**	2.000	0	96.5	85	115	02/10/2023
Beryllium		0.0010		**0.0456**	0.0500	0	91.3	85	115	02/13/2023
Boron	*	0.0250		**0.447**	0.5000	0	89.4	85	115	02/10/2023
Cadmium		0.0010		**0.0469**	0.0500	0	93.7	85	115	02/13/2023
Calcium	*	0.125		**2.48**	2.500	0	99.0	85	115	02/13/2023
Chromium		0.0150		**0.194**	0.2000	0	97.0	85	115	02/13/2023
Cobalt		0.0010		**0.490**	0.5000	0	97.9	85	115	02/13/2023
Lead		0.0010		**0.463**	0.5000	0	92.5	85	115	02/10/2023
Lithium	*	0.0030		**0.439**	0.5000	0	87.8	85	115	02/10/2023
Molybdenum		0.0015		**0.463**	0.5000	0	92.5	85	115	02/13/2023
Nickel		0.0010		**0.461**	0.5000	0	92.3	85	115	02/10/2023
Selenium		0.0010		**0.435**	0.5000	0	86.9	85	115	02/10/2023
Thallium		0.0020		**0.227**	0.2500	0	90.7	85	115	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202753 **SampType:** MS Units **mg/L**

SampID: 23020169-011DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.449**	0.5000	0	89.8	75	125	02/13/2023
Arsenic		0.0010		**0.438**	0.5000	0.001128	87.4	75	125	02/10/2023
Barium		0.0010		**1.94**	2.000	0.1158	91.3	75	125	02/10/2023
Beryllium		0.0010		**0.0490**	0.0500	0	98.0	75	125	02/13/2023
Boron		0.0250		**1.04**	0.5000	0.6186	83.4	75	125	02/10/2023
Cadmium		0.0010		**0.0460**	0.0500	0	91.9	75	125	02/13/2023
Calcium		0.125	S	**95.1**	2.500	93.35	72.1	75	125	02/13/2023
Chromium		0.0015		**0.180**	0.2000	0	90.0	75	125	02/13/2023
Cobalt		0.0010		**0.454**	0.5000	0	90.8	75	125	02/13/2023
Lead		0.0010		**0.450**	0.5000	0	90.0	75	125	02/10/2023
Lithium	*	0.0030		**0.469**	0.5000	0.02915	88.0	75	125	02/10/2023
Molybdenum		0.0015		**0.493**	0.5000	0.03831	91.0	75	125	02/13/2023
Nickel		0.0010		**0.399**	0.5000	0.002098	79.5	75	125	02/10/2023
Selenium		0.0010		**0.418**	0.5000	0.008992	81.7	75	125	02/10/2023
Thallium		0.0020		**0.225**	0.2500	0	90.0	75	125	02/10/2023

Batch 202753 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020169-011DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.449**	0.5000	0	89.7	0.4489	0.05	02/13/2023
Arsenic		0.0010		**0.481**	0.5000	0.001128	95.9	0.4380	9.31	02/10/2023
Barium		0.0010		**2.06**	2.000	0.1158	97.2	1.942	5.88	02/10/2023
Beryllium		0.0010		**0.0478**	0.0500	0	95.5	0.04900	2.58	02/13/2023
Boron		0.0250		**1.07**	0.5000	0.6186	90.0	1.036	3.13	02/10/2023
Cadmium		0.0010		**0.0454**	0.0500	0	90.8	0.04597	1.25	02/13/2023
Calcium		0.125	S	**93.6**	2.500	93.35	11.6	95.15	1.60	02/13/2023
Chromium		0.0015		**0.179**	0.2000	0	89.6	0.1799	0.43	02/13/2023
Cobalt		0.0010		**0.459**	0.5000	0	91.8	0.4541	1.05	02/13/2023
Lead		0.0010		**0.488**	0.5000	0	97.6	0.4500	8.14	02/10/2023
Lithium	*	0.0030		**0.492**	0.5000	0.02915	92.6	0.4692	4.79	02/10/2023
Molybdenum		0.0015		**0.497**	0.5000	0.03831	91.8	0.4931	0.82	02/13/2023
Nickel		0.0010		**0.438**	0.5000	0.002098	87.3	0.3995	9.32	02/10/2023
Selenium		0.0010		**0.455**	0.5000	0.008992	89.2	0.4176	8.61	02/10/2023
Thallium		0.0020		**0.243**	0.2500	0	97.1	0.2251	7.51	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202963 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202963

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	02/16/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/16/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/17/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/17/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	02/16/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	02/16/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/16/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/16/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/17/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/17/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/16/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/16/2023

Batch 202963 **SampType:** LCS Units **mg/L**

SampID: LCS-202963

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010	S	**0.611**	0.5000	0	122.2	80	120	02/16/2023
Arsenic		0.0010	S	**0.638**	0.5000	0	127.7	80	120	02/16/2023
Barium		0.0010	S	**2.60**	2.000	0	129.9	80	120	02/16/2023
Beryllium		0.0010		**0.0420**	0.0500	0	84.1	80	120	02/17/2023
Boron		0.0250		**0.422**	0.5000	0	84.4	80	120	02/17/2023
Cadmium		0.0010		**0.0407**	0.0500	0	81.3	80	120	02/17/2023
Calcium		0.125		**2.84**	2.500	0	113.5	80	120	02/16/2023
Chromium		0.0015		**0.234**	0.2000	0	117.1	80	120	02/16/2023
Cobalt		0.0010		**0.591**	0.5000	0	118.1	80	120	02/16/2023
Lead		0.0010		**0.590**	0.5000	0	118.1	80	120	02/16/2023
Lithium	*	0.0030		**0.437**	0.5000	0	87.5	80	120	02/17/2023
Molybdenum		0.0015		**0.402**	0.5000	0	80.4	80	120	02/17/2023
Nickel		0.0010		**0.574**	0.5000	0	114.8	80	120	02/16/2023
Thallium		0.0020		**0.296**	0.2500	0	118.3	80	120	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202963 **SampType:** MS Units **mg/L**

SampID: 23020169-013EMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.560**	0.5000	0	112.1	75	125	02/16/2023
Arsenic		0.0010		**0.586**	0.5000	0	117.2	75	125	02/16/2023
Barium		0.0010		**2.45**	2.000	0	122.7	75	125	02/16/2023
Beryllium		0.0010		**0.0424**	0.0500	0	84.9	75	125	02/18/2023
Boron		0.0250	S	**0.697**	0.5000	0	139.4	75	125	02/20/2023
Cadmium		0.0010		**0.0435**	0.0500	0	87.0	75	125	02/18/2023
Calcium		0.125		**2.78**	2.500	0	111.3	75	125	02/16/2023
Chromium		0.0015		**0.215**	0.2000	0	107.7	75	125	02/16/2023
Cobalt		0.0010		**0.552**	0.5000	0	110.3	75	125	02/16/2023
Lead		0.0010		**0.551**	0.5000	0	110.2	75	125	02/16/2023
Lithium	*	0.0030		**0.449**	0.5000	0	89.8	75	125	02/18/2023
Molybdenum		0.0015		**0.432**	0.5000	0	86.5	75	125	02/18/2023
Nickel		0.0010		**0.534**	0.5000	0.0004881	106.7	75	125	02/16/2023
Selenium		0.0010		**0.558**	0.5000	0	111.6	75	125	02/16/2023
Thallium		0.0020		**0.271**	0.2500	0	108.5	75	125	02/16/2023

Batch 202963 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020169-013EMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.533**	0.5000	0	106.7	0.5603	4.95	02/16/2023
Arsenic		0.0010		**0.536**	0.5000	0	107.2	0.5862	8.98	02/16/2023
Barium		0.0010		**2.32**	2.000	0	116.2	2.455	5.50	02/16/2023
Beryllium		0.0010		**0.0413**	0.0500	0	82.6	0.04243	2.69	02/18/2023
Boron		0.0250	S	**0.667**	0.5000	0	133.4	0.6970	4.37	02/20/2023
Cadmium		0.0010		**0.0430**	0.0500	0	86.0	0.04352	1.16	02/18/2023
Calcium		0.125		**2.46**	2.500	0	98.3	2.783	12.38	02/16/2023
Chromium		0.0015		**0.202**	0.2000	0	101.2	0.2154	6.21	02/16/2023
Cobalt		0.0010		**0.505**	0.5000	0	101.0	0.5517	8.79	02/16/2023
Lead		0.0010		**0.505**	0.5000	0	100.9	0.5508	8.75	02/16/2023
Lithium	*	0.0030		**0.441**	0.5000	0	88.3	0.4488	1.66	02/18/2023
Molybdenum		0.0015		**0.433**	0.5000	0	86.6	0.4323	0.16	02/18/2023
Nickel		0.0010		**0.489**	0.5000	0.0004881	97.8	0.5339	8.69	02/16/2023
Selenium		0.0010		**0.511**	0.5000	0	102.2	0.5579	8.76	02/16/2023
Thallium		0.0020		**0.248**	0.2500	0	99.4	0.2712	8.76	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202662 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202662

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	02/09/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/09/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/09/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/09/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/09/2023
Calcium		0.125		**< 0.125**	0.1150	0	0	-100	100	02/10/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	02/10/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/09/2023
Iron		0.0250		**< 0.0250**	0.0115	0	0	-100	100	02/09/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/09/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/09/2023
Manganese		0.0020		**< 0.0020**	0.0008	0	0	-100	100	02/09/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/09/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/09/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/09/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/09/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202662 **SampType:** LCS Units **mg/L**

SampID: LCS-202662

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.438**	0.5000	0	87.5	80	120	02/09/2023
Arsenic		0.0010		**0.465**	0.5000	0	93.0	80	120	02/09/2023
Barium		0.0010		**1.82**	2.000	0	91.2	80	120	02/09/2023
Beryllium		0.0010		**0.0436**	0.0500	0	87.3	80	120	02/09/2023
Boron		0.0250		**0.441**	0.5000	0	88.2	80	120	02/09/2023
Cadmium		0.0010		**0.0439**	0.0500	0	87.8	80	120	02/09/2023
Calcium		0.125		**2.13**	2.500	0	85.4	80	120	02/10/2023
Chromium		0.0015		**0.175**	0.2000	0	87.5	80	120	02/10/2023
Cobalt		0.0010		**0.472**	0.5000	0	94.4	80	120	02/09/2023
Iron		0.0250		**1.79**	2.000	0	89.3	80	120	02/09/2023
Lead		0.0010		**0.439**	0.5000	0	87.8	80	120	02/09/2023
Lithium	*	0.0030		**0.447**	0.5000	0	89.4	80	120	02/09/2023
Manganese		0.0020		**0.449**	0.5000	0	89.7	80	120	02/09/2023
Molybdenum		0.0015		**0.433**	0.5000	0	86.6	80	120	02/09/2023
Nickel		0.0010		**0.463**	0.5000	0	92.6	80	120	02/09/2023
Selenium		0.0010		**0.424**	0.5000	0	84.8	80	120	02/09/2023
Thallium		0.0020		**0.217**	0.2500	0	86.7	80	120	02/09/2023

Batch 202807 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202807

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/13/2023

Batch 202807 **SampType:** LCS Units **mg/L**

SampID: LCS-202807

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0010		**0.545**	0.5000	0	109.0	80	120	02/13/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202915 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202915

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	02/15/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/15/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/16/2023
Boron	*	0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/16/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/16/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	02/17/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	02/17/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/16/2023
Iron		0.0250		**< 0.0250**	0.0115	0	0	-100	100	02/17/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/15/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/17/2023
Manganese		0.0020		**< 0.0020**	0.0008	0	0	-100	100	02/17/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/16/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/16/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/15/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202915 **SampType:** LCS Units **mg/L**

SampID: LCS-202915

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	85	115	02/16/2023
Arsenic		0.0010		**0.554**	0.5000	0	110.8	85	115	02/16/2023
Barium		0.0010		**2.19**	2.000	0	109.5	85	115	02/16/2023
Beryllium		0.0010		**0.0509**	0.0500	0	101.9	85	115	02/16/2023
Boron	*	0.0250		**0.509**	0.5000	0	101.8	85	115	02/16/2023
Cadmium		0.0010		**0.0502**	0.0500	0	100.4	85	115	02/16/2023
Calcium	*	0.125		**2.66**	2.500	0	106.5	85	115	02/16/2023
Chromium		0.0015		**0.210**	0.2000	0	104.9	85	115	02/16/2023
Cobalt		0.0010		**0.548**	0.5000	0	109.7	85	115	02/16/2023
Iron	*	0.0250		**2.15**	2.000	0	107.5	85	115	02/16/2023
Lead		0.0010		**0.521**	0.5000	0	104.3	85	115	02/16/2023
Lithium	*	0.0030		**0.515**	0.5000	0	103.0	85	115	02/16/2023
Manganese		0.0020		**0.531**	0.5000	0	106.2	85	115	02/16/2023
Molybdenum		0.0015		**0.510**	0.5000	0	102.0	85	115	02/16/2023
Nickel		0.0010		**0.539**	0.5000	0	107.9	85	115	02/16/2023
Selenium		0.0010		**0.506**	0.5000	0	101.2	85	115	02/16/2023
Thallium		0.0020		**0.257**	0.2500	0	102.8	85	115	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202915 **SampType:** MS Units **mg/L**

SampID: 23020169-003CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.514**	0.5000	0	102.8	75	125	02/16/2023
Arsenic		0.0010		**0.543**	0.5000	0.001099	108.3	75	125	02/16/2023
Barium		0.0010		**2.29**	2.000	0.2020	104.2	75	125	02/16/2023
Beryllium		0.0010		**0.0532**	0.0500	0	106.3	75	125	02/16/2023
Boron		0.0250	S	**7.61**	0.5000	6.842	154.2	75	125	02/16/2023
Cadmium		0.0010		**0.0505**	0.0500	0	101.0	75	125	02/16/2023
Calcium		0.125	S	**103**	2.500	97.08	240.5	75	125	02/16/2023
Chromium		0.0015		**0.200**	0.2000	0.0008781	99.3	75	125	02/16/2023
Cobalt		0.0010		**0.514**	0.5000	0.0001671	102.9	75	125	02/16/2023
Iron		0.0250		**11.3**	2.000	9.074	111.9	75	125	02/16/2023
Lead		0.0010		**0.518**	0.5000	0	103.6	75	125	02/16/2023
Lithium	*	0.0030		**0.572**	0.5000	0.04058	106.2	75	125	02/16/2023
Manganese		0.0020		**1.03**	0.5000	0.5065	104.0	75	125	02/16/2023
Molybdenum		0.0015		**0.799**	0.5000	0.2648	106.9	75	125	02/16/2023
Nickel		0.0010		**0.497**	0.5000	0.001399	99.1	75	125	02/16/2023
Selenium		0.0010		**0.492**	0.5000	0	98.4	75	125	02/16/2023
Thallium		0.0020		**0.262**	0.2500	0	105.0	75	125	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202915 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020169-003CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.518**	0.5000	0	103.7	0.5139	0.88	02/16/2023
Arsenic		0.0010		**0.556**	0.5000	0.001099	110.9	0.5426	2.39	02/16/2023
Barium		0.0010		**2.33**	2.000	0.2020	106.6	2.285	2.08	02/16/2023
Beryllium		0.0010		**0.0537**	0.0500	0	107.5	0.05317	1.08	02/16/2023
Boron		0.0250	S	**7.69**	0.5000	6.842	169.1	7.613	0.97	02/16/2023
Cadmium		0.0010		**0.0505**	0.0500	0	101.0	0.05051	0.02	02/16/2023
Calcium		0.125	S	**104**	2.500	97.08	272.9	103.1	0.78	02/16/2023
Chromium		0.0015		**0.204**	0.2000	0.0008781	101.7	0.1995	2.34	02/16/2023
Cobalt		0.0010		**0.521**	0.5000	0.0001671	104.2	0.5145	1.25	02/16/2023
Iron		0.0250		**11.5**	2.000	9.074	123.4	11.31	2.01	02/16/2023
Lead		0.0010		**0.517**	0.5000	0	103.4	0.5179	0.14	02/16/2023
Lithium	*	0.0030		**0.579**	0.5000	0.04058	107.7	0.5717	1.24	02/16/2023
Manganese		0.0020		**1.03**	0.5000	0.5065	105.5	1.027	0.69	02/16/2023
Molybdenum		0.0015		**0.804**	0.5000	0.2648	107.8	0.7995	0.54	02/16/2023
Nickel		0.0010		**0.502**	0.5000	0.001399	100.0	0.4967	0.98	02/16/2023
Selenium		0.0010		**0.498**	0.5000	0	99.5	0.4918	1.16	02/16/2023
Thallium		0.0020		**0.262**	0.2500	0	104.8	0.2625	0.13	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch **202915** **SampType:** **MS** Units **mg/L**

SampID: 23020169-012CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.490**	0.5000	0	98.0	75	125	02/16/2023
Arsenic		0.0010		**0.514**	0.5000	0.001571	102.4	75	125	02/16/2023
Barium		0.0010		**2.20**	2.000	0.1781	101.2	75	125	02/16/2023
Beryllium		0.0010		**0.0512**	0.0500	0	102.5	75	125	02/16/2023
Boron		0.0250		**0.709**	0.5000	0.2212	97.6	75	125	02/16/2023
Cadmium		0.0010		**0.0482**	0.0500	0	96.4	75	125	02/16/2023
Calcium		0.125	S	**75.5**	2.500	75.53	0.3	75	125	02/16/2023
Chromium		0.0015		**0.192**	0.2000	0.002176	95.0	75	125	02/16/2023
Cobalt		0.0010		**0.482**	0.5000	0.001273	96.2	75	125	02/16/2023
Iron		0.0250		**2.50**	2.000	0.6273	93.7	75	125	02/16/2023
Lead		0.0010		**0.496**	0.5000	0	99.1	75	125	02/16/2023
Lithium	*	0.0030		**0.530**	0.5000	0.01575	102.9	75	125	02/16/2023
Manganese		0.0020		**0.575**	0.5000	0.09643	95.8	75	125	02/16/2023
Molybdenum		0.0015		**0.468**	0.5000	0	93.6	75	125	02/16/2023
Nickel		0.0010		**0.469**	0.5000	0.008130	92.2	75	125	02/16/2023
Selenium		0.0010		**0.480**	0.5000	0.003666	95.2	75	125	02/16/2023
Thallium		0.0020		**0.246**	0.2500	0	98.4	75	125	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch **202915** **SampType:** **MSD** Units **mg/L** RPD Limit: **20**

SampID: 23020169-012CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.506**	0.5000	0	101.2	0.4901	3.17	02/16/2023
Arsenic		0.0010		**0.541**	0.5000	0.001571	107.8	0.5138	5.09	02/16/2023
Barium		0.0010		**2.23**	2.000	0.1781	102.8	2.202	1.45	02/16/2023
Beryllium		0.0010		**0.0519**	0.0500	0	103.8	0.05124	1.25	02/16/2023
Boron		0.0250		**0.725**	0.5000	0.2212	100.8	0.7091	2.27	02/16/2023
Cadmium		0.0010		**0.0486**	0.0500	0	97.1	0.04819	0.74	02/16/2023
Calcium		0.125	S	**76.7**	2.500	75.53	46.6	75.53	1.52	02/16/2023
Chromium		0.0015		**0.195**	0.2000	0.002176	96.5	0.1921	1.56	02/16/2023
Cobalt		0.0010		**0.494**	0.5000	0.001273	98.5	0.4824	2.35	02/16/2023
Iron		0.0250		**2.56**	2.000	0.6273	96.5	2.501	2.22	02/16/2023
Lead		0.0010		**0.499**	0.5000	0	99.8	0.4955	0.71	02/16/2023
Lithium	*	0.0030		**0.543**	0.5000	0.01575	105.5	0.5304	2.37	02/16/2023
Manganese		0.0020		**0.598**	0.5000	0.09643	100.3	0.5753	3.84	02/16/2023
Molybdenum		0.0015		**0.488**	0.5000	0	97.5	0.4678	4.15	02/16/2023
Nickel		0.0010		**0.481**	0.5000	0.008130	94.6	0.4694	2.44	02/16/2023
Selenium		0.0010		**0.509**	0.5000	0.003666	101.0	0.4799	5.81	02/16/2023
Thallium		0.0020		**0.254**	0.2500	0	101.5	0.2461	3.01	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202916 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202916

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	02/15/2023
Arsenic		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Barium		0.0010		**< 0.0010**	0.0007	0	0	-100	100	02/15/2023
Beryllium		0.0010		**< 0.0010**	0.0002	0	0	-100	100	02/17/2023
Boron		0.0250		**< 0.0250**	0.0093	0	0	-100	100	02/17/2023
Cadmium		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/17/2023
Calcium		0.125		**< 0.125**	0.0700	0	0	-100	100	02/16/2023
Chromium		0.0015		**< 0.0015**	0.0007	0	0	-100	100	02/16/2023
Cobalt		0.0010		**< 0.0010**	0.0001	0	0	-100	100	02/16/2023
Iron		0.0250		**< 0.0250**	0.0115	0	0	-100	100	02/16/2023
Lead		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/15/2023
Lithium	*	0.0030		**< 0.0030**	0.0015	0	0	-100	100	02/17/2023
Manganese		0.0020		**< 0.0020**	0.0008	0	0	-100	100	02/16/2023
Molybdenum		0.0015		**< 0.0015**	0.0006	0	0	-100	100	02/17/2023
Nickel		0.0010		**< 0.0010**	0.0004	0	0	-100	100	02/16/2023
Selenium		0.0010		**< 0.0010**	0.0006	0	0	-100	100	02/16/2023
Thallium		0.0020		**< 0.0020**	0.0010	0	0	-100	100	02/15/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch **202916** **SampType:** **LCS** Units **mg/L**

SampID: LCS-202916

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.478**	0.5000	0	95.5	80	120	02/16/2023
Arsenic		0.0010		**0.506**	0.5000	0	101.2	80	120	02/16/2023
Barium		0.0010		**2.00**	2.000	0	100.0	80	120	02/16/2023
Beryllium		0.0010		**0.0495**	0.0500	0	98.9	80	120	02/17/2023
Boron		0.0250		**0.497**	0.5000	0	99.4	80	120	02/17/2023
Cadmium		0.0010		**0.0479**	0.0500	0	95.8	80	120	02/17/2023
Calcium		0.125		**2.32**	2.500	0	92.8	80	120	02/16/2023
Chromium		0.0015		**0.191**	0.2000	0	95.5	80	120	02/16/2023
Cobalt		0.0010		**0.486**	0.5000	0	97.2	80	120	02/16/2023
Iron		0.0250		**1.94**	2.000	0	97.1	80	120	02/16/2023
Lead		0.0010		**0.490**	0.5000	0	98.0	80	120	02/16/2023
Lithium	*	0.0030		**0.509**	0.5000	0	101.8	80	120	02/17/2023
Manganese		0.0020		**0.489**	0.5000	0	97.7	80	120	02/16/2023
Molybdenum		0.0015		**0.478**	0.5000	0	95.5	80	120	02/17/2023
Nickel		0.0010		**0.472**	0.5000	0	94.3	80	120	02/16/2023
Selenium		0.0010		**0.476**	0.5000	0	95.1	80	120	02/16/2023
Thallium		0.0020		**0.284**	0.2500	0	113.7	85	115	02/15/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202916 **SampType:** MS Units **mg/L**

SampID: 23020169-015CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		**0.508**	0.5000	0	101.6	75	125	02/16/2023
Arsenic		0.0010		**0.534**	0.5000	0.01748	103.4	75	125	02/16/2023
Barium		0.0010		**2.34**	2.000	0.1588	108.9	75	125	02/16/2023
Beryllium		0.0010		**0.0505**	0.0500	0	101.0	75	125	02/17/2023
Boron		0.0250	S	**8.35**	0.5000	8.317	6.0	75	125	02/17/2023
Cadmium		0.0010		**0.0492**	0.0500	0.0002302	97.8	75	125	02/17/2023
Calcium		0.125	S	**146**	2.500	149.0	-107.6	75	125	02/16/2023
Chromium		0.0015		**0.189**	0.2000	0.002223	93.3	75	125	02/16/2023
Cobalt		0.0010		**0.469**	0.5000	0.0005275	93.7	75	125	02/16/2023
Iron		0.0250		**13.5**	2.000	11.66	89.6	75	125	02/16/2023
Lead		0.0010		**0.488**	0.5000	0.002327	97.2	75	125	02/16/2023
Lithium	*	0.0030		**0.562**	0.5000	0.04402	103.7	75	125	02/17/2023
Manganese		0.0020		**1.18**	0.5000	0.7120	93.7	75	125	02/16/2023
Molybdenum		0.0015		**0.653**	0.5000	0.1596	98.7	75	125	02/17/2023
Nickel		0.0010		**0.446**	0.5000	0.002271	88.7	75	125	02/16/2023
Selenium		0.0010		**0.499**	0.5000	0	99.8	75	125	02/16/2023
Thallium		0.0020		**0.242**	0.2500	0	96.7	75	125	02/16/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

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

Batch 202916 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 23020169-015CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		**0.486**	0.5000	0	97.3	0.5079	4.33	02/16/2023
Arsenic		0.0010		**0.524**	0.5000	0.01748	101.3	0.5344	1.95	02/16/2023
Barium		0.0010		**2.30**	2.000	0.1588	106.9	2.337	1.77	02/16/2023
Beryllium		0.0010		**0.0502**	0.0500	0	100.4	0.05049	0.61	02/17/2023
Boron		0.0250	S	**8.43**	0.5000	8.317	23.6	8.347	1.05	02/17/2023
Cadmium		0.0010		**0.0467**	0.0500	0.0002302	93.0	0.04915	5.05	02/17/2023
Calcium		0.125	S	**144**	2.500	149.0	-181.4	146.3	1.27	02/16/2023
Chromium		0.0015		**0.186**	0.2000	0.002223	92.1	0.1888	1.32	02/16/2023
Cobalt		0.0010		**0.453**	0.5000	0.0005275	90.5	0.4692	3.48	02/16/2023
Iron		0.0250		**13.7**	2.000	11.66	100.3	13.46	1.57	02/16/2023
Lead		0.0010		**0.481**	0.5000	0.002327	95.8	0.4884	1.50	02/16/2023
Lithium	*	0.0030		**0.564**	0.5000	0.04402	104.0	0.5624	0.28	02/17/2023
Manganese		0.0020		**1.16**	0.5000	0.7120	90.3	1.180	1.42	02/16/2023
Molybdenum		0.0015		**0.639**	0.5000	0.1596	96.0	0.6529	2.09	02/17/2023
Nickel		0.0010		**0.434**	0.5000	0.002271	86.4	0.4458	2.57	02/16/2023
Selenium		0.0010		**0.485**	0.5000	0	96.9	0.4992	2.96	02/16/2023
Thallium		0.0020		**0.239**	0.2500	0	95.5	0.2418	1.27	02/16/2023

SW-846 7470A (TOTAL)

Batch 202649 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202649

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	02/07/2023

Batch 202649 **SampType:** LCS Units **mg/L**

SampID: LCS-202649

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00466**	0.0050	0	93.2	85	115	02/07/2023

Batch 202649 **SampType:** MS Units **mg/L**

SampID: 23020169-002CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00475**	0.0050	0	95.0	75	125	02/07/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 7470A (TOTAL)

Batch 202649 **SampType:** MSD Units **mg/L** RPD Limit: **15**

SampID: 23020169-002CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00466**	0.0050	0	93.3	0.004748	1.78	02/07/2023

Batch 202742 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202742

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	02/10/2023

Batch 202742 **SampType:** LCS Units **mg/L**

SampID: LCS-202742

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00512**	0.0050	0	102.4	85	115	02/10/2023

Batch 202742 **SampType:** MS Units **mg/L**

SampID: 23020169-008CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00520**	0.0050	0	103.9	75	125	02/10/2023

Batch 202742 **SampType:** MSD Units **mg/L** RPD Limit: **15**

SampID: 23020169-008CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00503**	0.0050	0	100.6	0.005197	3.25	02/10/2023

Batch 202743 **SampType:** MBLK Units **mg/L**

SampID: MBLK-202743

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	02/10/2023

Batch 202743 **SampType:** LCS Units **mg/L**

SampID: LCS-202743

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00541**	0.0050	0	108.2	85	115	02/10/2023

Batch 202743 **SampType:** MS Units **mg/L**

SampID: 23020169-013CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.00020		**0.00516**	0.0050	0	103.2	75	125	02/10/2023

Client: ERM **Work Order:** 23020169

Client Project: GTEC **Report Date:** 28-Feb-23

SW-846 7470A (TOTAL)

Batch **202743** **SampType:** **MSD** Units **mg/L** RPD Limit: **15**

SampID: 23020169-013CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.00020		**0.00495**	0.0050	0	98.9	0.005159	4.22	02/10/2023

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: ERM
Client Project: GTEC

Work Order: 23020169
Report Date: 28-Feb-23

Carrier: Clay Sansoucie

Completed by: Lindsey Maddox
On: 03-Feb-23

Received By: TWM

Reviewed by: Marvin L. Darling
On: 03-Feb-23

Pages to follow: Chain of custody 2 Extra pages included 30

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 1.6
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 ☐	
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 ☑

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.

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

pH strip #87147. - lmaddox - 2/3/2023 10:56:50 AM

Additional nitric acid (86511) was needed in both 2L containters for samples APW-07-WG-20230130 and APW-10S-WG-20230202 and one APW-10D-WG-20230202 container upon arrival at the laboratory. - lmaddox - 2/3/2023 10:57:21 AM

No container was received for dissolved metals for EB-01-WQ-20230130. The sample was split, filtered and preserved upon arrival at the laboratory. Client was notified via workorder summary. LAM 2/3/23

CHAIN OF CUSTODY

pg. 1 of 2 Work order # 23020169

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:	Matt Halley
Phone:	(314) 952-2760
E-Mail:	matt.halley@erm.com
Fax:	

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 1.6 °C LTG# 3

Preserved in: [X] LAB [ ] FIELD **FOR LAB USE ONLY**

Lab Notes

PH87147, Added HNO3(80511) APW-07 APW 10D APW-10S AC 2/3/23

Client Comments:

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

Field filtered for dissolved metals.

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

Are these samples known to be hazardous? [ ] 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: GTEC

Sample Collector's Name: Clay Sansoucie / Marshall Arendell

Results Requested: [X] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [ ] 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Cl SO4	Dissolved Metals*	F- pH TDS	Radium 226/228	Total Fe/Mn	Total Hg	Total Metals*
23020169-001	APW-03-WG-20230130	1/30/23; 1330	1	2		2										X	X	X	X	X	X	X	X
-002	APW-07-WG-20230130	1/30/23; 1445	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-003	APW-06S-WG-20230201	2/1/23; 0910	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-004	APW-06D-WG-20230201	2/1/23; 1100	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-005	APW-05-WG-20230201	2/1/23; 1225	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-006	APW-02-WG-20230201	2/1/23; 1350	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-007	APW-09-WG-20230201	2/1/23; 1550	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-008	APW-08-WG-20230202	2/2/23; 0945	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-009	APW-10S-WG-20230202	2/2/23; 1110	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓
-010	APW-10D-WG-20230202	2/2/23; 1230	1	2		2										↓	↓	↓	↓	↓	↓	↓	↓

Relinquished By	Date/Time	Received By	Date/Time
Clay Sans[signature]	2/3/23; 0845	[signature]	2.3.23 0845

BottleOrder: 77879

AC 2/3/23

CHAIN OF CUSTODY

pg. 2 of 2 Work order # 23020169

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:	Matt Halley	**Phone:**	(314) 952-2760
E-Mail:	matt.halley@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 and Dissolved: Sb As Ba Be B Cd Ca Cr Co Pb Li Mo Ni Se Tl

Field filtered for dissolved metals.

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

Are these samples known to be hazardous? ☐ 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: GTEC

Sample Collector's Name: Clay Sansoucie / Marshall Arenden

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

Billing Instructions:

 # and Type of Containers

MATRIX

INDICATE ANALYSIS REQUESTED

Lab Use Only	Sample Identification	Date/Time Sampled	UNPRES	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	OTHER	Aqueous	Drinking Water	Soil	Sludge	Special Waste	Groundwater	Cl SO4	Dissolved Metals*	F- pH TDS	Radium 226/228	Total Fe/Mn	Total Hg	Total Metals*
23020169-011	APW-04-WG-20230202	2/2/23; 1405	1	2		2										X	X	X	X	X	X	X	X
-012	APW-01R-WG-20230202	2/2/23; 1510	1	2		2																	
-013	EB-01-WQ-20230130	1/30/23; 0940	1	1		1																	
-014	DUP-01-WG-20230201	2/1/23; 0001	1	2		2																	
-015	DUP-02-WG-20230201	2/1/23; 0002	1	2		2																	

Relinquished By	Date/Time	Received By	Date/Time
Clay Sans	2/3/23; 0845		2/3/23 0845

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: 77879

ANALYTICAL REPORT

February 23, 2023

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

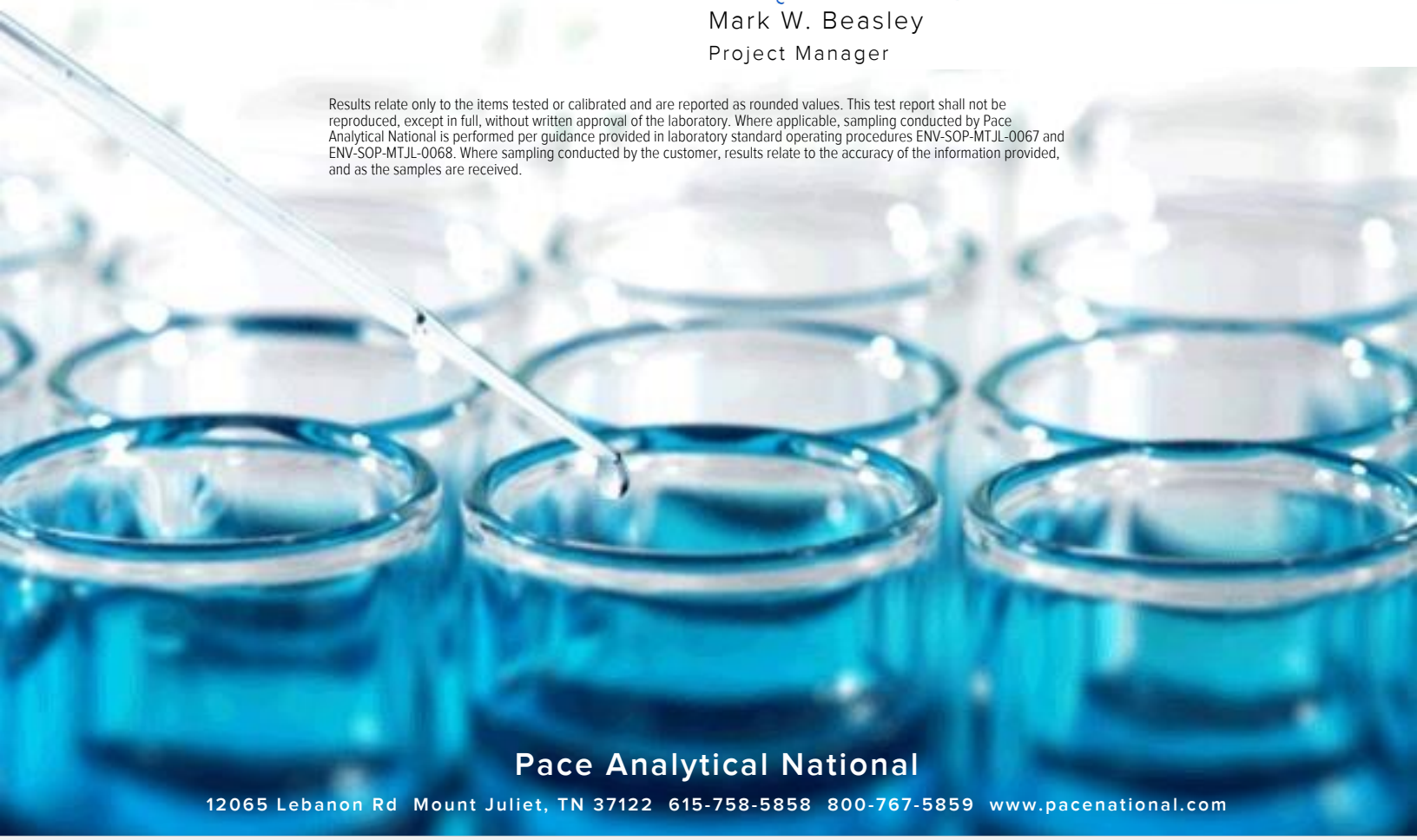
TEKLAB, Inc.

Sample Delivery Group:	L1582645
Samples Received:	02/06/2023
Project Number:	23020169
Description:	

Report To: Elizabeth Hurley
5445 Horseshoe Lake Road
Collinsville, IL 62234

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



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

TABLE OF CONTENTS

23020169-001 L1582645-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/30/23 13:30	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-002 L1582645-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/30/23 14:45	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-003 L1582645-03 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 08:10	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-004 L1582645-04 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 11:00	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-005 L1582645-05 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 12:25	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-006 L1582645-06 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 13:50	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004306	1	02/13/23 17:33	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/16/23 16:43	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-007 L1582645-07 Non-Potable Water

Collected by | Collected date/time 02/01/23 15:50 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-008 L1582645-08 Non-Potable Water

Collected by | Collected date/time 02/01/23 09:45 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-009 L1582645-09 Non-Potable Water

Collected by | Collected date/time 02/01/23 11:10 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-010 L1582645-10 Non-Potable Water

Collected by | Collected date/time 02/01/23 12:30 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-011 L1582645-11 Non-Potable Water

Collected by | Collected date/time 02/01/23 14:05 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001731	1	02/08/23 13:09	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001731	1	02/08/23 13:09	02/10/23 10:57	RGT	Mt. Juliet, TN

23020169-012 L1582645-12 Non-Potable Water

Collected by | Collected date/time 02/01/23 15:10 | Received date/time 02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001734	1	02/09/23 14:52	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001734	1	02/09/23 14:52	02/16/23 10:25	RGT	Mt. Juliet, TN

23020169-013 L1582645-13 Non-Potable Water

Collected by	Collected date/time	Received date/time
	01/30/23 09:40	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001734	1	02/09/23 14:52	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001734	1	02/09/23 14:52	02/16/23 10:25	RGT	Mt. Juliet, TN

23020169-014 L1582645-14 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 00:01	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001734	1	02/09/23 14:52	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001734	1	02/09/23 14:52	02/16/23 10:25	RGT	Mt. Juliet, TN

23020169-015 L1582645-15 Non-Potable Water

Collected by	Collected date/time	Received date/time
	02/01/23 00:02	02/06/23 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2004309	1	02/16/23 18:01	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2001734	1	02/09/23 14:52	02/22/23 13:00	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2001734	1	02/09/23 14:52	02/16/23 10:25	RGT	Mt. Juliet, TN

CASE NARRATIVE

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

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.119	U	0.430	0.749	02/16/2023 16:43	WG2004306
(T) Barium	*88.7*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*95.0*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.412	J	0.479	0.776	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.293		0.212	0.202	02/10/2023 10:57	WG2001731
(T) Barium-133	*81.0*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.77		0.352	0.561	02/16/2023 16:43	WG2004306
(T) Barium	*108*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*98.1*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.10		0.441	0.638	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.337		0.265	0.303	02/10/2023 10:57	WG2001731
(T) Barium-133	*84.2*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.44		0.518	0.862	02/16/2023 16:43	WG2004306
(T) Barium	*87.3*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*94.0*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.47		0.568	0.949	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0283	U	0.232	0.397	02/10/2023 10:57	WG2001731
(T) Barium-133	*92.2*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.02		0.451	0.758	02/16/2023 16:43	WG2004306
(T) Barium	*101*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*91.9*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.38		0.528	0.822	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.355		0.275	0.317	02/10/2023 10:57	WG2001731
(T) Barium-133	*104*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.399	J	0.422	0.723	02/16/2023 16:43	WG2004306
(T) Barium	*105*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*98.9*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.608	J	0.488	0.798	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.209	J	0.245	0.338	02/10/2023 10:57	WG2001731
(T) Barium-133	*87.7*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.07		0.466	0.782	02/16/2023 16:43	WG2004306
(T) Barium	*94.3*			*30.0-143*	*02/16/2023 16:43*	WG2004306
(T) Yttrium	*97.3*			*30.0-136*	*02/16/2023 16:43*	WG2004306

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.14		0.532	0.890	02/16/2023 16:43	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0737	U	0.256	0.425	02/10/2023 10:57	WG2001731
(T) Barium-133	*90.3*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0230	U	0.243	0.451	02/22/2023 13:00	WG2004309
(T) Barium	*97.5*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*95.3*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.120	U	0.289	0.512	02/22/2023 13:00	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0975	J	0.156	0.242	02/10/2023 10:57	WG2001731
(T) Barium-133	*95.2*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.157	U	0.282	0.525	02/22/2023 13:00	WG2004309
(T) Barium	*94.3*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*107*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.247	J	0.373	0.611	02/22/2023 13:00	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.247	J	0.244	0.312	02/10/2023 10:57	WG2001731
(T) Barium-133	*90.7*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.162	U	0.371	0.680	02/22/2023 13:00	WG2004309
(T) Barium	*91.8*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*107*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.24		0.542	0.732	02/22/2023 13:00	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.08		0.395	0.272	02/10/2023 10:57	WG2001731
(T) Barium-133	*93.8*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.847		0.370	0.661	02/22/2023 13:00	WG2004309
(T) Barium	*73.1*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*107*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.03		0.402	0.682	02/22/2023 13:00	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.186		0.157	0.168	02/10/2023 10:57	WG2001731
(T) Barium-133	*97.3*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.961		0.296	0.521	02/22/2023 13:00	WG2004309
(T) Barium	*95.1*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*103*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.31		0.376	0.568	02/22/2023 13:00	WG2001731

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.352		0.232	0.226	02/10/2023 10:57	WG2001731
(T) Barium-133	*97.4*			*30.0-143*	*02/10/2023 10:57*	WG2001731

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.531		0.284	0.511	02/22/2023 13:00	WG2004309
(T) Barium	*95.5*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*93.9*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.691		0.330	0.552	02/22/2023 13:00	WG2001734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.160	J	0.169	0.210	02/16/2023 10:25	WG2001734
(T) Barium-133	*93.7*			*30.0-143*	*02/16/2023 10:25*	WG2001734

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.573	U	0.349	0.665	02/22/2023 13:00	WG2004309
(T) Barium	*82.2*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*88.2*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.0194	U	0.369	0.722	02/22/2023 13:00	WG2001734

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0194	U	0.120	0.281	02/16/2023 10:25	WG2001734
(T) Barium-133	*58.2*			*30.0-143*	*02/16/2023 10:25*	WG2001734

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.249	J	0.228	0.416	02/22/2023 13:00	WG2004309
(T) Barium	*93.0*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*102*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.454	J	0.332	0.532	02/22/2023 13:00	WG2001734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.205	J	0.241	0.332	02/16/2023 10:25	WG2001734
(T) Barium-133	*76.9*			*30.0-143*	*02/16/2023 10:25*	WG2001734

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.981		0.290	0.506	02/22/2023 13:00	WG2004309
(T) Barium	*88.2*			*30.0-143*	*02/22/2023 13:00*	WG2004309
(T) Yttrium	*117*			*30.0-136*	*02/22/2023 13:00*	WG2004309

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.16		0.402	0.651	02/22/2023 13:00	WG2001734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.175	J	0.279	0.409	02/16/2023 10:25	WG2001734
(T) Barium-133	*89.4*			*30.0-143*	*02/16/2023 10:25*	WG2001734

Method Blank (MB)

(MB) R3891876-1 02/16/23 16:43

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.288	J	0.202	0.345
(T) Barium	*105*		*105*	
(T) Yttrium	*101*		*101*	

L1582632-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1582632-20 02/16/23 16:43 • (DUP) R3891876-5 02/16/23 16:43

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-228	1.04	0.448	0.756	1.16	0.394	0.756	1	11.1	0.204		20	3
(T) Barium	*89.0*			*105*	*105*							
(T) Yttrium	*100*			*93.8*	*93.8*							

Laboratory Control Sample (LCS)

(LCS) R3891876-2 02/16/23 16:43

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.22	84.5	80.0-120	
(T) Barium			*106*		
(T) Yttrium			*108*		

L1583846-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1583846-01 02/16/23 16:43 • (MS) R3891876-3 02/16/23 16:43 • (MSD) R3891876-4 02/16/23 16:43

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	10.0	-0.811	6.43	6.66	64.3	66.6	1	70.0-130	J6	J6	3.39		20
(T) Barium		*99.2*			*98.5*	*108*							
(T) Yttrium		*102*			*98.3*	*102*							

Method Blank (MB)

(MB) R3894152-1 02/22/23 13:00

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / - pCi/l	MB MDA pCi/l
Radium-228	0.236	J	0.208	0.377
(T) Barium	*96.2*		*96.2*	
(T) Yttrium	*106*		*106*	

L1580085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1580085-01 02/22/23 13:00 • (DUP) R3894152-5 02/22/23 13:00

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	1.20	0.415	0.734	0.653	0.353	0.734	1	59.1	1.01		20	3
(T) Barium	*92.3*			*93.1*	*93.1*							
(T) Yttrium	*99.0*			*102*	*102*							

Laboratory Control Sample (LCS)

(LCS) R3894152-2 02/22/23 13:00

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.17	83.5	80.0-120	
(T) Barium			*83.0*		
(T) Yttrium			*111*		

L1579058-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1579058-02 02/22/23 13:00 • (MS) R3894152-3 02/22/23 13:00 • (MSD) R3894152-4 02/22/23 13:00

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.153	9.11	8.76	89.6	86.1	1	70.0-130			3.87		20
(T) Barium		*98.6*			*101*	*102*							
(T) Yttrium		*96.1*			*103*	*105*							

Method Blank (MB)

(MB) R3891354-1 02/10/23 10:57

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.0221	U	0.0497	0.0810
(T) Barium-133	*91.0*		*91.0*	

L1582632-29 Original Sample (OS) • Duplicate (DUP)

(OS) L1582632-29 02/10/23 10:57 • (DUP) R3891354-5 02/10/23 10:57

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.438	0.255	0.205	0.0630	0.219	0.205	1	150	1.12	U	20	3
(T) Barium-133	*96.4*			*85.5*	*85.5*							

Laboratory Control Sample (LCS)

(LCS) R3891354-2 02/10/23 10:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.03	100	80.0-120	
(T) Barium-133			*94.2*		

L1582632-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1582632-21 02/10/23 10:57 • (MS) R3891354-3 02/10/23 10:57 • (MSD) R3891354-4 02/10/23 10:57

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	0.219	18.6	18.8	91.9	93.0	1	75.0-125			1.18		20
(T) Barium-133		*94.6*			*96.6*	*92.7*							

Method Blank (MB)

(MB) R3893260-1 02/16/23 10:25

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.305		0.130	0.106
(T) Barium-133	*69.7*		*69.7*	

L1580251-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1580251-01 02/16/23 10:25 • (DUP) R3893260-5 02/16/23 10:25

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.783	0.466	0.442	0.513	0.474	0.442	1	41.6	0.406	J	20	3
(T) Barium-133	*55.3*			*51.4*	*51.4*							

Laboratory Control Sample (LCS)

(LCS) R3893260-2 02/16/23 10:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.06	101	80.0-120	
(T) Barium-133			*75.5*		

L1582645-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1582645-12 02/16/23 10:25 • (MS) R3893260-3 02/16/23 10:25 • (MSD) R3893260-4 02/16/23 10:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	0.160	20.1	21.2	99.8	105	1	75.0-125			4.99		20
(T) Barium-133		*93.7*			*88.8*	*81.0*							

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Pg ___ of ___ A116

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: Joseph Riley/Adam Bridges | QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium 226/228 on your standard turn around time.
Samples collected from an IL site.
Batch QC is required for all analyses requested. EDD requested..

Project# 23020169

Contact: Elizabeth Hurley | Email: EHurley@TekLabInc.com
Requested Due Date: Standard TAT | Billing/PO: 33948 | Phone: (618) 344-1004

LF582645

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.

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

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Ra226/228
-01	23010169-001	1/30/23 1330	HNO3	Groundwater	☑
-02	23010169-002	1/30/23 1445	HNO3	Groundwater	☑
-03	23010169-003	2/1/23 0810	HNO3	Groundwater	☑
-04	23010169-004	2/1/23 1100	HNO3	Groundwater	☑
-05	23010169-005	2/1/23 1225	HNO3	Groundwater	☑
-06	23010169-006	2/1/23 1350	HNO3	Groundwater	☑
-07	23010169-007	2/1/23 1550	HNO3	Groundwater	☑
-08	23010169-008	2/1/23 0945	HNO3	Groundwater	☑
-09	23010169-009	2/1/23 1110	HNO3	Groundwater	☑
-10	23010169-010	2/1/23 1230	HNO3	Groundwater	☑
-11	23010169-011	2/1/23 1405	HNO3	Groundwater	☑

*Relinquished By	Date/Time	Received By	Date/Time
[signature]	2/3/23 16:00	[signature] PACE	2-6-23 1000

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

NS&G
19.1+0=19.1

6319 3615 8308

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: Joseph Riley/Adam Bridges | QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium 226/228 on your standard turn around time.
Samples collected from an IL site.
Batch QC is required for all analyses requested. EDD requested..

Project# 23020169

Contact: Elizabeth Hurley | Email: EHurley@TekLabInc.com
Requested Due Date: Standard TAT | Billing/PO: 33948 | Phone: (618) 344-1004

L1582645

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.

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

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Ra226/228											
-12	23020169-012	2/1/23 1510	HNO3	Groundwater	✔											
-13	23020169-013	1/30/23 0940	HNO3	Groundwater	✔											
-14	23020169-014	2/1/23 0001	HNO3	Groundwater	✔											
-15	23020169-015	2/1/23 0002	HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											
			HNO3	Groundwater	✔											

*Relinquished By	Date/Time	Received By	Date/Time
	2/3/23		

LF5626H5

Tracking Numbers Fed Ex	Temperature
6319 3615 8308	MSAG 20.4
8282	14.1
8319	26.1
8293	19.1

APPENDIX E APW-05 ABANDONMENT, REDRILL, AND DEVELOPMENT FORMS

Print Form

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH
525 W. JEFFERSON ST.
SPRINGFIELD, IL 62761

WATER WELL SEALING FORM

PDF FILLABLE/SAVABLE

RETURN ALL COPIES TO IDPH OR LOCAL HEALTH DEPARTMENT

This form shall be submitted to this Department or the local health department not more than 30 days after a water well, boring or monitoring well is sealed. Such wells are to be sealed not more than 30 days after they are abandoned in accordance with the sealing requirements in the Illinois Water Well Construction Code. THE LOCAL HEALTH DEPARTMENT OR REGIONAL PUBLIC HEALTH DEPARTMENT MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO SEALING.

1. Ownership (Name of Controlling Party) Grand Tower Energy Center

2. Well Location: Well Site Address 1820 Power Plant Rd City Grand Tower Zip 62942

Lot # Land I.D.# County Jackson Township 10S

Range 4W Section 14 SE Quarter of the NW Quarter of the SW Quarter

GPS: North Degrees 37 Minutes 39 Seconds 14.11 West Degrees 89 Minutes 30 Seconds 42.73

Report decimal minutes to minutes and seconds by multiplying the decimal part of the minutes by 60, e.g. latitude 38 degrees 46.07 minutes N would be latitude 38 degrees 46 minutes 4.2 seconds (0.07 x 60 = 4.2) N. Report GPS coordinates to the nearest 0.1 second.

3. Year Drilled 2017 4. Drilling Permit Number (and date, if known APW-5

5. Type of Well Monitoring 6. Total Depth (ft.) 60 Diameter (in.) 2

7. Formation clear of obstruction Yes

8. Detains of Plugging (bentonite, neat cement or other materials)

Filled with	Bentonite Chips	From (ft.)	60	to (ft.)	0
Kind of plug		From (ft.)		to (ft.)	
Filled with		From (ft.)		to (ft.)	
Kind of plug		From (ft.)		to (ft.)	
Filled with		From (ft.)		to (ft.)	
Kind of plug		From (ft.)		to (ft.)	

9. CASING RECORD Upper 2 feet of casing removed Yes 10. Date well was sealed 02/07/2023

11. Licensed water well driller or other person approved by the Department performing well sealing

Name Bulldog Drilling Complete License Number N/R

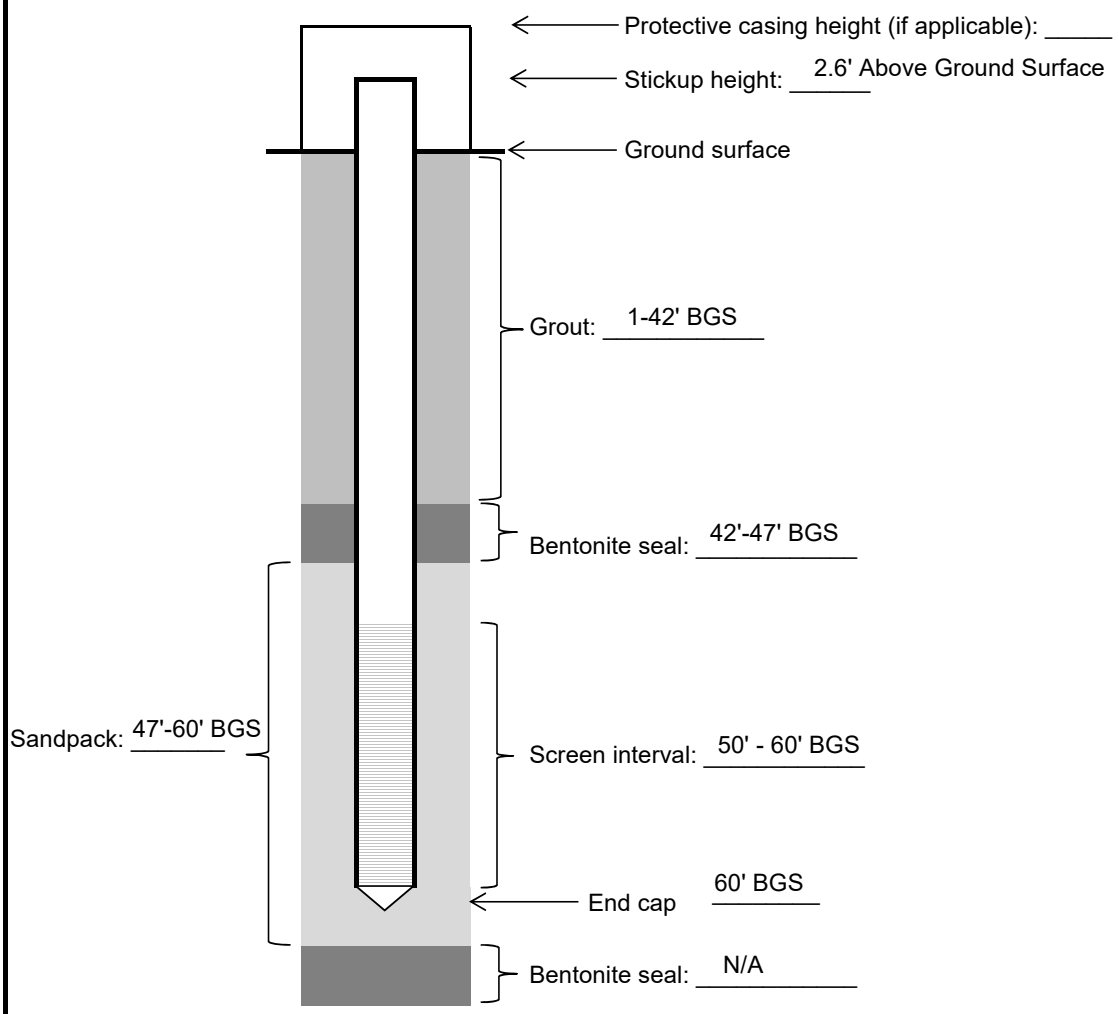
Address 411 Transpoint Dr. City Dupo State Illinois Zip Code 62239

This state agency is requesting discolsure of information that is necessary to accomplish the statutory purpose as outlined under Public Act-0863. Disclosure of this information is mandatory. This form has been approved by the Forms Management Center. IL 482-0631- Revised 5/09

Questions regarding the completion of this form should be directed to the local health department or the Illinois Department of Public Health 217-782-5830, TTY (for hearing impaired only) 800-547-0466.

MONITORING WELL CONSTRUCTION LOG (SINGLE SCREEN)
Location: APW-05R

Project Name:	Grand Tower Energy Center	Logged By:	M Abegg
Start Date and Time:	2/6/2023	Contractor:	Bulldog Drilling
End Date and Time:	2/6/2023	Driller:	R. Scharringhausen
Weather:	30 F, Sunny	Drilling Method	Hollow Stem Auger
Depth to Water:	33.87'	Drill Rig Model:	CME
Boring Depth:	60 ft.	Boring Diameter:	6.25"



RISER & SCREEN

Type:	PVC
Schedule:	Schedule 40
Diameter:	2"
Screen Slot Size (in):	0.01"
Centralizer Information:	N/A

GROUT & BENTONITE

Grout Type:	"Quik-Grout"
Hydration Details:	20% Solids
Bentonite Type:	"Pel-Plug" 3/8" pellets
Hydration Details:	

SANDPACK

Type: #11 sand

GROUND SURFACE COMPLETION

Type: Stickup w/ 1' concrete pad

Other info (padlock added, etc):

WATER USED DURING DRILLING

Water used in alluvium (gals):	NA
Overdrilling (gals):	NA
Water used in bedrock (gals):	NA
Water recovered (gals):	NA

Well Development/Purging Data Sheet

Well/Piezometer Number: APW-05R | [X] Development [ ] Purging | Date: 2/7/2023 | Time Start: 1040 | Page 1 of 1

Project Name: GTEC Post Closure Monitoring | Project Manager/Samplers: M. Abegg | Project No.: 0599247

Client Company: Grand Tower Energy Center | Project/Task No.:

Site Name: GTEC Landfill | Site Address:

Development Criteria

- [ ] 3 Casing Volumes of Water Removal
- [ ] Stabilization of Indicator Parameters
- [X] Other: Visual turbidity and volume

Water Volume Calculation

(2"-.1632 4"-.6524 6"-1.5)

Total Depth of Well (feet): 62.98 (TOC) 60.00 (BGS)

Screen Interval: to

Initial Depth to Water (feet): 33.87 (TOC)

Height (h) of Water Column in Well (feet):

Diameter (inches): Well 2" Gravel Pack

Item	Water Vol in Well	Purge Mult.	Purge/Dev Volume (Gal)
Well Casing	4.75 gal		
Gravel Pack			
Drilling Fluids			
Total			

Water Quality Instrument

Calibration

- [X] YSI — Pro Plus
- [X] Solinst — Water Level Meter
- [ ] Other:

Method of Purge/Development

Pump
- [ ] Submersible (s)
- [ ] Peristaltic (p)
- [X] Whale Pump (w)
- [ ] Other

Bailer
- [ ] Bottom Valve
- [ ] Double Check Valve
- [ ] Teflon
- [ ] Disposable

Water Management

- [X] Surface Discharge
- [ ] Containerize

Sample Information:

ID: Date/Time:

Analysis:

QA/QC Samples:

Stabilization Data

Time	Purge Rate Vol (ml)	Purge Rate Time(sec)	Removal Rate (mL/min) v/t*60	Intake Depth (feet)	Water Depth (feet)	Water Volume Removed (gallons) Increment	Water Volume Removed (gallons) Cumulative	pH	Sp. Cond (µS/cm)	Temp (°C)	DO (mg/L)	ORP (mV)	Turbidity	Comments
1117					34.10		Initial	6.90	1469	15.5	1.12	128.4	NM	Turbid dark brown
1121					34.10		10.0	7.13	915.000	15.6	0.73	33.40	NM	Slightly turbid brown
1130					34.10		20.0	7.21	940.000	15.3	0.75	-20.40	NM	Slightly turbid brown
1137					34.10		30.0	7.25	958.000	15.3	0.47	-50.70	NM	Clear
1145					34.10		40.0	7.26	970.000	15.1	0.52	-66.10	NM	Clear

Comments/Well Condition: Surged well with slug for appoximately 15 minutes prior to pumping. Stick up height from ground surface is ~2.6 ft.

Signature (s):  Date 2/7/2023 Reviewer Date