



24 August 2023

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

Subject: Fifth Post-Closure Groundwater Monitoring Report
Second 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 second quarter 2023 at the GTEC facility located at 1820 Power Plant Rd, Grand Tower, Illinois (the "Site"). The second quarter groundwater sampling event took place between 26 June and 27 June 2023, and the impoundment inspection event was conducted on 26 June 2023. A Site location map is provided in Figure 1.

The second quarter 2023 groundwater sampling event was performed in accordance with the post-closure groundwater monitoring program presented within the Grand Tower Operating Permit Application submitted to the Illinois Environmental Protection Administration (IEPA) on 28 October 2021, which was modified in accordance with the Consolidated IEPA Comments dated 17 March 2022. The purpose of the sampling event was to continue the initial five-year period of quarterly groundwater monitoring for the evaluation of the concentration and areal distribution of impacts related to the closed CCR impoundment in Site groundwater. The parameters detected in the groundwater are associated with the historical CCR impoundment, which was capped and closed in 2020. The quarterly results include a summary of field activities, laboratory analytical, and documentation of other associated Site activity, as necessary. It should be noted that this is the fifth 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.

Second quarter 2023 site activities, performed in accordance with the proposed post-closure groundwater monitoring program, the results of which are summarized below, included:

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

QUARTERLY CCR IMPOUNDMENT INSPECTION

During the second quarter of 2023, an inspection of the CCR impoundment cover system and associated features was completed, and the full quarterly inspection report can be found in Appendix A. The woody vegetation (up to 1" diameter) noted to be within the riprap on the north, west, and southern impoundment cap faces during 2022 was treated with herbicide during the first half of 2023. However, a limited amount of live woody vegetation growth continues to be observed within the riprap. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

QUARTERLY MONITORING WELL INSPECTION AND GAUGING

During the second quarter of 2023, monitoring well inspections were conducted. The monitoring well protectors and casings were inspected for damage and/or signs of settling that might impact the integrity of the surface seals. The inspection tasks also included gauging total depths as well as static groundwater elevations. Both measurements were referenced from the top of casing (TOC) at each of the Site monitoring wells. Total depth and groundwater level measurements were obtained from the monitoring wells using a water level meter with an accuracy of 0.01 foot. The quarterly monitoring well inspection forms can be found in Appendix B. Based upon these measurements, a shallow groundwater contour map for the Site was developed for the second quarter of 2023. The groundwater gradient is primarily from east to west towards the Mississippi River except during times of flooding events that may cause a reverse flow from west to east for a short period of time (Natural Resource Technology, Phase 1 Hydrogeologic Assessment Report, March 2013). Figure 2 shows monitoring well locations with a groundwater contour and groundwater flow direction arrow, groundwater elevations at each monitoring well, and the Mississippi River elevation at the time of groundwater level gauging.

QUARTERLY GROUNDWATER MONITORING

The Groundwater Protection Standards (GWPS) for the Site are those provided in 35 IAC §845.600(a). Assessment of corrective measures began on 16 June 16, 2022 with the commencement of the initial post-closure groundwater sampling event. During the second 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 second quarter 2023 sampling event is included in Appendix D.

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

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

Groundwater Analytical Results

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

- APW-01R exceeded the GWPS for turbidity.
- APW-02 exceeded the GWPS for sulfate, turbidity, arsenic, boron, calcium, lithium, and molybdenum.
- APW-03 exceeded the GWPS for boron and calcium.
- APW-04 exceeded the GWPS for turbidity.
- APW-05R exceeded the GWPS for turbidity, boron, calcium, lithium, and molybdenum.
- APW-06D exceeded the GWPS for turbidity, arsenic, boron, and calcium.
- APW-6S exceeded the GWPS for boron, calcium, lithium, and molybdenum.
- APW-07 exceeded the GWPS for calcium.
- APW-08 exceeded the GWPS for turbidity.
- APW-09 exceeded the GWPS for turbidity.
- APW-10D exceeded the GWPS for turbidity, calcium, and cobalt.
- APW-10S exceeded the GWPS for turbidity, arsenic, and calcium.

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 GWPS.

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

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

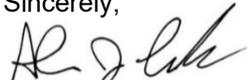
SUMMARY AND CONCLUSIONS

Based upon the results of the second quarter 2023 groundwater sampling event, well inspection, and CCR impoundment inspection, the following observations and conclusions have been made:

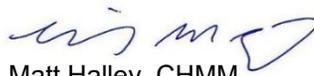
- Similar to the groundwater sampling results obtained during the eight pre-closure sampling events in 2017 to 2018, and five post-closure groundwater sampling events, concentrations of COCs above the GWPS continue to be detected at well locations downgradient of the closed CCR impoundment.
- Boron has historically been the key indicator for corrective action and continued monitoring of groundwater at the Site. Incorporating data from the eight rounds of pre-closure groundwater sampling conducted during 2017 and 2018, as well as the five post groundwater monitoring events, boron continues to demonstrate a decreasing trend at APW-04 and APW-05.
- The woody vegetation (up to 1" diameter) noted to be within the riprap on the north, west, and southern impoundment cap faces during 2022 was treated with herbicide during the first half of 2023. No significant degradation or issues were noted associated with the overall CCR impoundment cover system.

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

Sincerely,



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



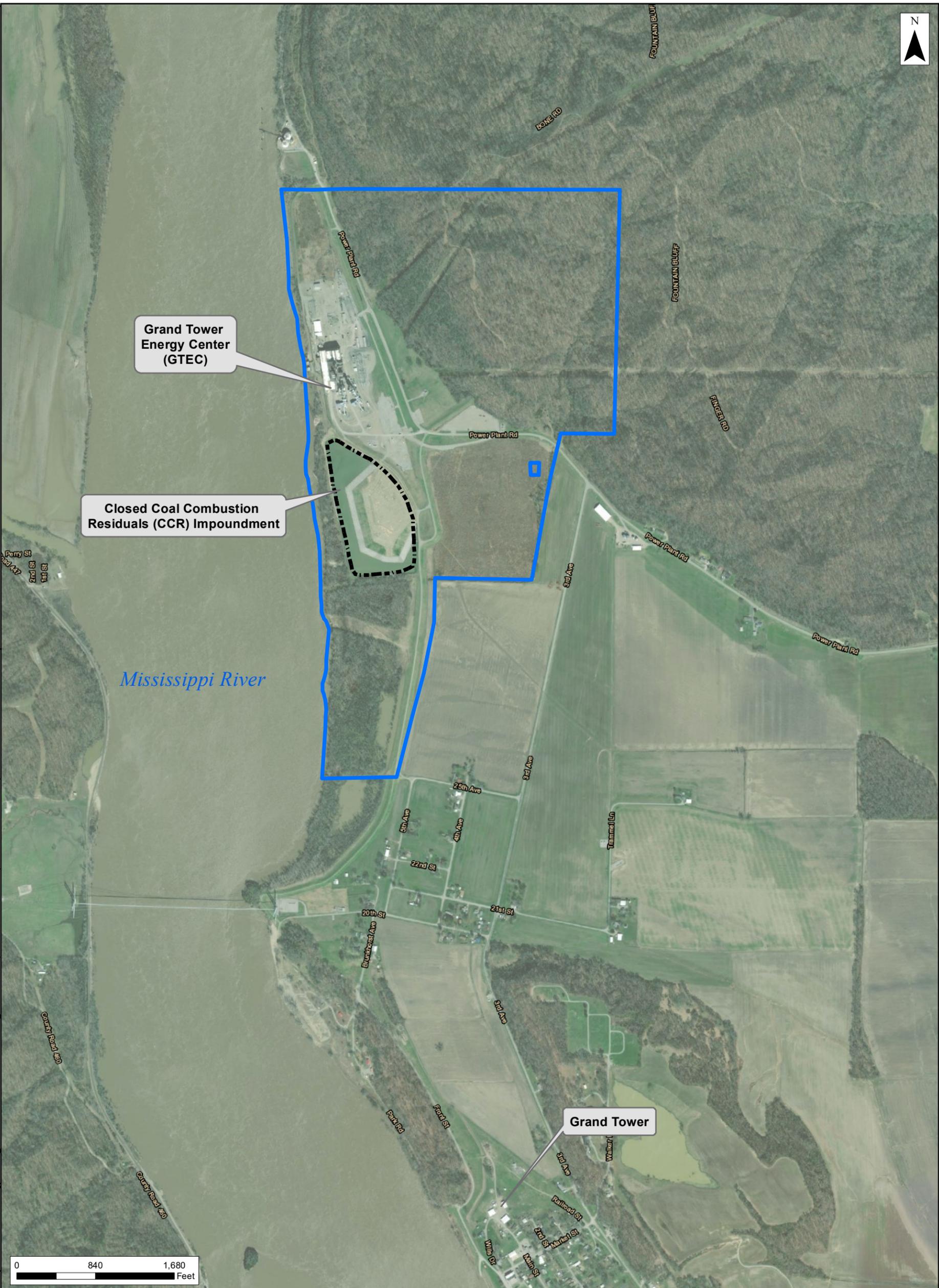
Matt Halley, CHMM
Senior Consultant

Attachments

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

FIGURES

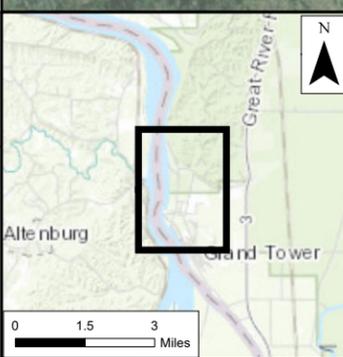
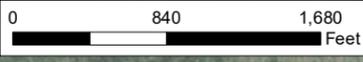
FILE: \\usbd\dfs02\data\Philadelphia\Team\DM\GIS\Projects\Grand Tower Energy Center\ MXD\FIGURE1-SITELLOCATIONMAP_20221003.mxd | REVISED: 10/03/2022 | SCALE: 1:12,000 when printed at 11x17



Grand Tower Energy Center (GTEC)

Closed Coal Combustion Residuals (CCR) Impoundment

Grand Tower



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

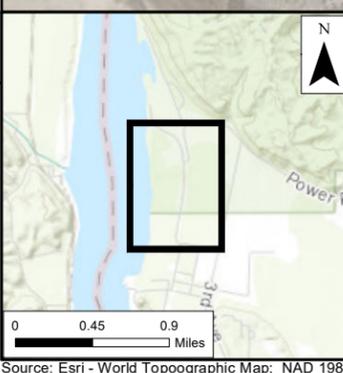
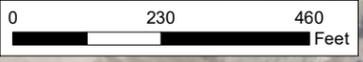
Notes:
 1. CCR Surface Impoundment Closed Prior to July 31, 2021
 2. World Imagery (3/24/2021)

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

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*Mississippi River Elevation = 330.97



- Legend**
- Monitoring Well Location
 - Groundwater Contour (0.25 Ft. Interval)
 - Inferred Groundwater Contour (0.25 Ft. Interval)
 - Groundwater Flow Direction
 - 348.37** Groundwater Elevation

- Notes:**
1. CCR Surface Impoundment Closed Prior to July 31, 2021
 2. Date of gauging June 26, 2023
 3. Ft AMSL - Feet Above Mean Sea Level
 4. *June 26, 2023 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>)
 5. Contours are dashed where inferred
 6. BING Imagery, 2022

Figure 2 -Groundwater Contour Map June 2023
 Grand Tower Energy Center, LLC
 Grand Tower, Illinois
 Jackson County

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

TABLES

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

Sample ID	Location ID	Sample Date	Sample Type	Sampled prior to closure of CCR Impoundment						Post-Closure Sampling						
				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-1R-WG-20220915	APW-1R-WG-20221130	APW-1R-WG-20230202	APW-1R-WG-20230627
Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	N	N	N	N	N	N	N	N	N	N	N	N	N
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.15	0.17	0.16	0.12	0.14	0.15	0.18	0.16	0.21	0.15	0.18	0.17	0.14
Radium-226	NA	pCi/L	NS	0.25 ± .12 U	0.18 ± .09 U	0.307 ± .320	0.13 ± 0.43 U	-0.07 ± 0.16 U	0.23 ± 0.1 U	0.03 ± 0.07 U	-0.04 ± 0.08 U	0.0323 ± 0.141 U	0.24 ± 0.1 U	0.4 ± 0.12 U	0.16 ± 0.169 J	0.27 ± 0.11 U
Radium-228	NA	pCi/L	NS	2.29 ± .98	0.51 ± .39 U	0.12 ± .332	0.57 ± 0.33 U	0.47 ± 0.54 U	0.04 ± 0.34 U	0.98 ± 0.62 J	0.22 ± 0.34 U	0.661 ± 0.257	0.43 ± 0.49 UQM-	0.41 ± 0.56 U	0.531 ± 0.284	0.85 ± 0.61 J
Sulfate	NA	mg/L	400	41	65	65	54	58	88	78	79	33	73 S	69	74	37
CALC																
Radium-226/228	NA	pCi/L	5									0.693 ± 0.293	0.67 ± 0.59 U	0.81 ± 0.68 U	0.691 ± 0.330	1.12 ± 0.72 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									33.9	31.7	31.7	89.5	83.2
GEN CHEM																
Chloride	NA	mg/L	200	5 U	5 U	5 U	5 U	5 U	9	11	10	2	7	7	7	4 U
Dissolved Solids, Total	NA	mg/L	1200	400	428	376	358 R	412	474	434	392	342	420 H	385	384	328
pH, Lab	NA	pH units	6.22-9.0 ²	6.64	6.54	6.6	6.8	7.11	6.96	7.09	6.52	6.98	6.91	6.43	6.57	6.53 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0012	0.001 U	0.001 U	0.001 U	0.0011
Arsenic	T	mg/L	0.01	0.0012	0.0012	0.001 U	0.0012	0.0011	0.001 U	0.0011	0.0011	0.0012	0.0019	0.0021	0.0016	0.0013
Barium	D	mg/L	2									0.16	0.153	0.162 B	0.155	0.164
Barium	T	mg/L	2	0.168	0.193	0.171	0.176	0.165	0.178	0.182	0.18	0.197	0.185	0.199	0.178	0.168
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.163	0.244	0.219	0.205	0.249
Boron	T	mg/L	2	0.218	0.251	0.238	0.211	0.225	0.329	0.357	0.311	0.228	0.242	0.222	0.221	0.176
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2 ¹									85.6	83.8 S	73.9	71.4	66.4
Calcium	T	mg/L	103.2 ¹	84.3 S	93 S	86.2 S	88.2	91.2 S	91	97.1	85.8 S	90.3	91.4	79.7	75.5 S	66.8 B
Chromium	D	mg/L	0.1									0.0009 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0023	0.0021	0.0033	0.001 U	0.001 U	0.0018	0.0015	0.0015	0.0031	0.0034	0.0041	0.0022	0.0015 U
Cobalt	D	mg/L	0.006									0.0002 J	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	0.0017	0.0017	0.0031	0.0013	0.0014
Iron	T	mg/L	NS									1.42				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0062	0.0014	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0127	0.0156	0.0139	0.0135	0.015
Lithium	T	mg/L	0.04	0.0155	0.018	0.0173	0.0175	0.018	0.0179	0.0164	0.0159	0.0171	0.0169	0.0155	0.0157	0.0142
Manganese	T	mg/L	NS									0.139				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.0043		0.0061		
Nickel	T	mg/L	NS	0.0044	0.0062	0.0054	0.004	0.0038	0.0046	0.005	0.0057	0.0083		0.012		
Selenium	D	mg/L	0.05									0.0028	0.0032	0.0033	0.0032	0.0032
Selenium	T	mg/L	0.05	0.0038	0.004	0.0034	0.0044	0.0041	0.004	0.004	0.0037	0.0028	0.0038	0.0035	0.0037	0.0033
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0014	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
 Empty cells = not analyzed
 N = Normal Environmental Sample
 FD = Field Duplicate Sample
 NA = not applicable
 T = total
 D = dissolved
 mg/L = milligrams per liter
 pCi/L = picocuries per liter
 NTU = nephelometric turbidity units
 H = Holding times exceeded
 J = Analyte detected below quantitation limits
 J3 = The associated batch QC was outside the established quality control range for precision
 S = Spike Recovery outside recovery limits
 R = RPD outside accepted recovery limits
 U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
 1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
 2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
 Highlighted values exceed action level
 NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling								
				Sample ID Location ID Sample Date Sample Type	APW-2-20170907 APW-02 09/06/2017 N	APW-2-20170927 APW-02 09/28/2017 N	APW-2-20171020 APW-02 10/20/2017 N	APW-2-20171109 APW-02 11/09/2017 N	APW-2-20171129 APW-02 11/29/2017 N	APW-2-20171227 APW-02 12/27/2017 N	APW-2-20180119 APW-02 01/19/2018 N	APW-2-20180207 APW-02 02/07/2018 N	APW-02-WG-20220616 APW-02 06/16/2022 N	APW-02-WG-20220914 APW-02 09/14/2022 N	DUP-002-WG-20220914 APW-02 09/14/2022 FD	APW-02-WG-20221129 APW-02 11/29/2022 N	DUP-02-WG-20221129 APW-02 11/29/2022 FD	APW-02-WG-20230201 APW-02 02/01/2023 N	DUP-02-WG-20230201 APW-02 02/01/2023 FD	APW-02-WG-20230627 APW-02 06/27/2023 N
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	0.22	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	0.21 ± 0.1 U	-0.05 ± 0.07 U
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	-0.42 ± 0.6 U	0.13 ± 0.52 U
Sulfate	NA	mg/L	400	462	460	472 S	479	472	426	443	416	496	491	490	418	438	459	455	500	465
CALC																				
Radium-226/228	NA	pCi/L	5									0.467 ± 0.297 J	0.67 ± 0.58 U	2.95 ± 1.1	0.74 ± 0.58 U	0.62 ± 0.67 U	1.14 ± 0.532	1.16 ± 0.402	0.21 ± 0.7 U	0.13 ± 0.59 U
FIELD PARAM																				
Turbidity, Field	NA	NTU	17.96 ¹									38	19.2		132		93.6		104.3	
GEN CHEM																				
Chloride	NA	mg/L	200	13	12	11	11	12	12	12	12	9	11	10	9	9	10	10	7	8
Dissolved Solids, Total	NA	mg/L	1200	858	880	934	916	870	848	836	888	930	890 H	905 H	885	855	852	866	920	870
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	6.9 H	7.03 H
METALS																				
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
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	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	0.011	0.0107
Arsenic	T	mg/L	0.01	0.0199	0.0147	0.0212	0.017	0.0169	0.0157	0.0148	0.0243	0.0158	0.026	0.0176	0.022	0.0173	0.0185	0.0175	0.0148	0.0146
Barium	D	mg/L	2									0.154	0.123	0.135	0.125 B	0.148 B	0.187	0.154	0.142	0.145
Barium	T	mg/L	2	0.479	0.355	0.685	0.44	0.427	0.338	0.351	0.739	0.237	0.408	0.238	0.254	0.218	0.214	0.159	0.149	0.206
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.002 U	0.001 U	0.001 U	0.001 SU	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									8.17	7.49 S	7.9	6.56	6.63	8.21	7.39	8.97	9.24
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	9.14	9.51 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	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	0.001 U	0.001 U
Calcium	D	mg/L	103.2 ¹									175	136 S	165	96.1	129	108	144	147	148
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	161 B	167 S
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
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	0.0024	0.0079
Cobalt	D	mg/L	0.006									0.0003 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0057	0.0023	0.0097	0.0041	0.0038	0.0018	0.0028	0.011	0.0011 J	0.0044	0.0011	0.0015	0.0011	0.001 U	0.001 U	0.001 U	0.0016
Iron	T	mg/L	NS									11.7								
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
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	0.0025	0.0029
Lithium	D	mg/L	0.04									0.037	0.0374	0.0404	0.028	0.0356	0.0425	0.0387	0.0442	0.0455
Lithium	T	mg/L	0.04	0.05	0.0455	0.0647	0.0521	0.0542	0.0474	0.045	0.0604	0.0507	0.0559	0.0456	0.0386	0.0411	0.0417	0.044	0.0459	0.048
Manganese	T	mg/L	NS									0.752								
Mercury	D	mg/L	0.002										0.0002 U	0.0002 U						
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00043	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.201	0.139	0.156	0.0337	0.145	0.151	0.155	0.227	0.227
Molybdenum	T	mg/L	0.1	0.172	0.147	0.214	0.175	0.165	0.111	0.0951	0.131	0.24	0.174	0.174	0.128	0.119	0.165	0.16	0.229	0.252
Nickel	D	mg/L	NS									0.0039			0.0022	0.001 U				
Nickel	T	mg/L	NS	0.0288	0.0263	0.0412	0.0202	0.0135	0.0295	0.0631	0.0725	0.0142			0.0045	0.0047				
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.0071	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
 Empty cells = not analyzed
 N = Normal Environmental Sample
 FD = Field Duplicate Sample
 NA = not applicable
 T = total
 D = dissolved
 mg/L = milligrams per liter
 pCi/L = picocuries per liter
 NTU = nephelometric turbidity units
 H = Holding times exceeded
 J = Analyte detected below quantitation limits
 J3 = The associated batch QC was outside the established quality control range for precision
 S = Spike Recovery outside recovery limits
 R = RPD outside accepted recovery limits
 U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
 1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
 2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
 Highlighted values exceed action level
 NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling				
				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-3-WG-20220616	APW-3-WG-20220915	APW-3-WG-20221130	APW-3-WG-20230130	APW-3-WG-20230626
				APW-03 09/06/2017 N	APW-03 09/29/2017 N	APW-03 10/20/2017 N	APW-03 11/10/2017 N	APW-03 11/29/2017 N	APW-03 12/28/2017 N	APW-03 01/19/2018 N	APW-03 02/08/2018 N	APW-03 06/16/2022 N	APW-03 09/15/2022 N	APW-03 11/30/2022 N	APW-03 01/30/2023 N	APW-03 06/26/2023 N
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.28	0.29	0.29	0.31	0.27	0.29	0.29	0.34	0.26	0.2	0.26	0.23	0.23
Radium-226	NA	pCi/L	NS	0.53 ± .18 U	0.04 ± 0.09 U	0.409 ± 0.426	0.18 ± 0.11 U	0.33 ± 0.17 U	0.2 ± 0.1 U	0.1 ± 0.1 U	0.31 ± 0.15 U	0.201 ± 0.155	0.56 ± 0.13 U	0.19 ± 0.1 U	0.293 ± 0.212	0.23 ± 0.11 U
Radium-228	NA	pCi/L	NS	2.05 ± .96	1.01 ± 0.57	0.492 ± 0.373	0.72 ± 0.37 J	0.31 ± 0.49 U	0.37 ± 0.44 U	1.32 ± 0.68	0.06 ± 0.36 U	1.89 ± 0.26 J3	0.4 ± 0.5 UQDR	0.67 ± 0.59 U	0.119 ± 0.430 U	0.61 ± 0.54 U
Sulfate	NA	mg/L	400	175	222	201	207	204	168	152	194	393	150	226	322	292
CALC																
Radium-226/228	NA	pCi/L	5									2.09 ± 0.303	0.96 ± 0.63 U	0.86 ± 0.69 U	0.412 ± 0.479 J	0.84 ± 0.65 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									40.3	56.1	103	50.7	6.04
GEN CHEM																
Chloride	NA	mg/L	200	22	21	21	22	19	20	16	23	20	16	20	21	17
Dissolved Solids, Total	NA	mg/L	1200	464	514	486	450	554	504	498	456	724	602 H	610	524	614
pH, Lab	NA	pH units	6.22-9.0 ²	7.88	7.46	7.65	7.93	7.5	7.48	7.26	7.78	7.85	7.46	7.21	7.45	7.77 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0015	0.0014	0.0024	0.002	0.0016
Arsenic	T	mg/L	0.01	0.0022	0.0029	0.0021	0.0018	0.0023	0.0024	0.0028	0.0018	0.002	0.0046	0.0059	0.003	0.004
Barium	D	mg/L	2									0.139	0.124	0.108 B	0.139	0.13
Barium	T	mg/L	2	0.111	0.146	0.104	0.0814	0.121	0.1	0.15	0.0806	0.158	0.181	0.19	0.135	0.155
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									4.23	1.49	2.99	4.98	4.64
Boron	T	mg/L	2	4.16	4.21 S	4.7	4.67	4.44 S	4.52	4.08	4.92	4.27	1.84	3.59	4.94	4.67
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2 ¹									174	125	101	121	125
Calcium	T	mg/L	103.2 ¹	86.3	104 S	88.1	74.9	116 S	95	101	77.1	153	143	115	111	139 B
Chromium	D	mg/L	0.1									0.0011 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0081	0.0053	0.0026	0.001 U	0.001 U	0.005	0.0025	0.001 U	0.0044	0.0083	0.0118	0.0019	0.0241
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.0015	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0005 J	0.0014	0.0021	0.001 U	0.0014
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	0.001 U
Lead	T	mg/L	0.0075	0.0021	0.0042	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0013	0.0023	0.0029	0.001 U	0.0044
Lithium	D	mg/L	0.04									0.0338	0.0288	0.0266	0.0275	0.0262
Lithium	T	mg/L	0.04	0.0258	0.0262	0.0259	0.0245	0.0308	0.027	0.035	0.0239	0.0361	0.0329	0.029	0.0276	0.0352
Manganese	T	mg/L	NS									0.321				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.057	0.0342	0.0648	0.0521	0.0656
Molybdenum	T	mg/L	0.1	0.0778	0.0754	0.0761	0.0713	0.0684	0.0748	0.0824	0.0849	0.0601	0.0413	0.0621	0.0528	0.0553
Nickel	D	mg/L	NS									0.0016		0.0011		
Nickel	T	mg/L	NS	0.0055	0.0051	0.0019	0.001 U	0.001 U	0.0026	0.0025	0.001	0.0033		0.01		
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									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

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
¹ Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
² Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling				
				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-4-WG-20220615	APW-4-WG-20220915	APW-4-WG-20221128	APW-4-WG-20230202	APW-4-WG-20230627
Location ID	Sample Date	Sample Type		APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04	APW-04
				09/08/2017	09/29/2017	10/19/2017	11/08/2017	11/28/2017	12/28/2017	01/19/2018	02/08/2018	06/15/2022	09/15/2022	11/28/2022	02/02/2023	06/27/2023
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.18	0.19	0.18	0.17	0.18	0.17	0.17	0.16	0.2	0.17	0.17	0.15	0.16
Radium-226	NA	pCi/L	NS	0.38 ± 0.16 U	0.02 ± 0.08 U	-0.272 ± 0.328	0.15 ± 0.09 U	0.09 ± 0.13 U	0.17 ± 0.09 U	-0.05 ± 0.08 U	0.13 ± 0.11 U	0.103 ± 0.164 J	0.5 ± 0.13 U	0.11 ± 0.08 U	0.352 ± 0.232	0.33 ± 0.12 U
Radium-228	NA	pCi/L	NS	0.95 ± 0.64 J	-0.45 ± 0.68 U	0.53 ± 0.382	0.64 ± 0.31 U	0.88 ± 0.64 J	0.73 ± 0.36 J	0.34 ± 0.51 U	0.64 ± 0.48 U	0.245 ± 0.235 J	2.15 ± 0.78	1.47 ± 0.67	0.961 ± 0.296	0.92 ± 0.68 J
Sulfate	NA	mg/L	400	126	116	109	120	107	100	99	92	94	83	68	62	65
CALC																
Radium-226/228	NA	pCi/L	5									0.348 ± 0.287 J	2.65 ± 0.91	1.58 ± 0.75 U	1.31 ± 0.376	1.25 ± 0.8 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									19.1	18.3	26.5	37.3	38.7
GEN CHEM																
Chloride	NA	mg/L	200	12	11	11	11	11	11	10	11	12	10	11	10	12
Dissolved Solids, Total	NA	mg/L	1200	460	484	452	472	492	514	424	528	430	436 H	446	416	432
pH, Lab	NA	pH units	6.22-9.0 ²	7.31	7.33	7.31	7.42	7.32	7.33	7.25	7.2	7.41	7.51	7.34	7.21	7.39 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0013	0.0013	0.0021	0.0011	0.0014
Arsenic	T	mg/L	0.01	0.0025	0.0018	0.0016	0.0018	0.0016	0.0014	0.0016	0.0015	0.0015	0.0029	0.0016	0.0017	0.002
Barium	D	mg/L	2									0.116	0.132	0.13 B	0.116	0.122
Barium	T	mg/L	2	0.145	0.139	0.123	0.13	0.128	0.141	0.155	0.144	0.143	0.165	0.133	0.134	0.138
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									1.41	0.875	7.33	0.619	0.908
Boron	T	mg/L	2	2.37	2.16	2.12	2.21	2.03	1.7	1.33	1.18	1.88	0.973	0.653	0.65	0.876
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2 ¹									111	93.7	108	93.3 S	88.3
Calcium	T	mg/L	103.2 ¹	101 S	105	89.4	97.5	107	107	113	113	97.8	108 S	102	100	97.5 B
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0041	0.0025	0.0017	0.001 U	0.001 U	0.0027	0.0037	0.001 U	0.0015 U	0.0251	0.0043	0.0016	0.0015 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0013	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0025	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									0.563				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0016	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0264	0.0283	0.0355	0.0292	0.0311
Lithium	T	mg/L	0.04	0.0404	0.0403	0.0412	0.0406	0.0424	0.0416	0.0411	0.0397	0.036	0.0322	0.0293	0.0326	0.0314
Manganese	T	mg/L	NS									0.192				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0653	0.0445	0.227	0.0383	0.0503
Molybdenum	T	mg/L	0.1	0.0891	0.084	0.0793	0.0812	0.0748	0.0714	0.0592	0.057	0.0788	0.0494	0.0406	0.0377	0.0449
Nickel	D	mg/L	NS									0.0019		0.0017		
Nickel	T	mg/L	NS	0.0065	0.0034	0.0029	0.002	0.002	0.0026	0.0039	0.003	0.0045		0.0051		
Selenium	D	mg/L	0.05									0.0134	0.0101	0.001 U	0.009	0.0165
Selenium	T	mg/L	0.05	0.0158	0.015	0.0149	0.0161	0.014	0.013	0.0101	0.0102	0.0133	0.0111	0.0085	0.0099	0.0165
Thallium	D	mg/L	0.002									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

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
¹ Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
² Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	Sample ID Location ID Sample Date Sample Type	Sampled prior to closure of CCR Impoundment									Post-Closure Sampling								
				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	APW-05R-WG-20230627	DUP-01-WG-20230627
				APW-05 09/06/2017 N	APW-05 09/28/2017 N	APW-05 10/19/2017 N	APW-05 11/09/2017 N	APW-05 11/29/2017 N	APW-05 12/27/2017 N	APW-05 01/18/2018 N	APW-05 02/07/2018 N	APW-05 06/16/2022 N	APW-05 06/16/2022 FD	APW-05 09/14/2022 N	APW-05 09/14/2022 FD	APW-05 11/28/2022 N	APW-05 11/28/2022 FD	APW-05 02/01/2023 N	APW-05 02/01/2023 FD	APW-05 06/27/2023 N	APW-05 06/27/2023 FD
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	0.3	0.32
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	0.23 ± 0.1 U	0.11 ± 0.08 U
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	0.31 ± 0.5 UQDR	0.61 ± 0.67 U
Sulfate	NA	mg/L	400	407	460	399	413	381	394	439	378	224	239	379	403	324	338	325	305	335	326
CALC																					
Radium-226/228	NA	pCi/L	5									1.75 ± 0.424	0.973 ± 0.411	0.99 ± 0.96 U	0.38 ± 0.62 U	0.6 ± 0.6 U	1.41 ± 0.79 U	0.608 ± 0.488 J	0.454 ± 0.332 J	0.54 ± 0.6 U	0.72 ± 0.75 U
FIELD PARAM																					
Turbidity, Field	NA	NTU	17.96 ¹									51.8		9.19		4.65		8.21		42.6	
GEN CHEM																					
Chloride	NA	mg/L	200	15	15	15	14	16	16	16	16	19	19	15	15	19	19	18	18	17	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	740	695
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	7.27 H	7.3 H
METALS																					
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.002	0.0021	0.001	0.0026	0.001 U	0.0019	0.0026	0.0018	0.0024	0.0025
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	0.003	0.003
Barium	D	mg/L	2									0.133	0.132	0.13	0.128	0.172 B	0.13 B	0.175	0.135	0.168	0.167
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	0.14	0.136	0.145	0.148	0.148	0.183	0.181
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									7.63	7.7	7.42	7.09	6.12	7.03 S	8.68 S	6.76	8.64	8.37
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	8.76	8.68
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2 ¹									139	141	119	131	87.4	110 S	106 S	111	120	120
Calcium	T	mg/L	103.2 ¹	136	142	119	131	123	125	121	124	127	129 S	127	137	117	118	112	114	136 B	133 B
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0137	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	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	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	0.001 U	0.001 U
Iron	T	mg/L	NS									2.77	1.89								
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
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	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	0.0384	0.0398
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	0.0423	0.0415
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	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.172	0.17	0.213	0.206	0.293	0.211 S	0.187	0.199	0.213	0.204
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	0.212	0.21
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	0.001 U	0.001 U
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U

Notes:
 Empty cells = not analyzed
 N = Normal Environmental Sample
 FD = Field Duplicate Sample
 NA = not applicable
 T = total
 D = dissolved
 mg/L = milligrams per liter
 pCi/L = picocuries per liter
 NTU = nephelometric turbidity units
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 R = RPD outside accepted recovery 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
 2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
 Highlighted values exceed action level
 NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling					
				Sample ID	APW-6D-20170907	APW-6D-20170927	APW-6D-20171019	APW-6D-20171109	APW-6D-20171128	APW-6D-20171227	APW-6D-20180118	APW-6D-20180208	N/A	APW-06D-WG-20220913	APW-06D-WG-20221128	APW-06D-WG-20230201	APW-06D-WG-20230627
				Location ID	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D	APW-06D
				09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	6/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	
				N	N	N	N	N	N	N	N	N/A	N	N	N	N	
												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	0.2	
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	0.3 ± 0.12 U	
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	0.74 ± 0.54 J	
Sulfate	NA	mg/L	400	215	228	206	222	230	236	211	189	N/A	272	254	269	270	
CALC																	
Radium-226/228	NA	pCi/L	5									N/A	1.77 ± 0.81 U	0.9 ± 0.58 U	1.38 ± 0.528	1.04 ± 0.66 U	
FIELD PARAM																	
Turbidity, Field	NA	NTU	17.96 ¹									N/A	18.5	74.4	26.9	181	
GEN CHEM																	
Chloride	NA	mg/L	200	17	17	16	16	16	16	17	17	N/A	14	17	16	15	
Dissolved Solids, Total	NA	mg/L	1200	558	560	562	564	590	516 R	482	584	N/A	670 H	580	582	735	
pH, Lab	NA	pH units	6.22-9.0 ²	7.23	7.25	7.23	7.19	7.2	7.22	7.21	7.2	N/A	7.42	7.21	7.29	7.39 H	
METALS																	
Antimony	D	mg/L	0.006									N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Arsenic	D	mg/L	0.01									N/A	0.004	0.0116	0.012	0.0102	
Arsenic	T	mg/L	0.01	0.0068	0.0101	0.0075	0.0074	0.009	0.0095	0.0106	0.0096	N/A	0.0104	0.0111	0.0107	0.0115	
Barium	D	mg/L	2									N/A	0.129	0.118 B	0.152	0.13	
Barium	T	mg/L	2	0.173	0.172	0.142	0.153	0.155	0.163	0.166	0.148	N/A	0.143	0.142	0.134	0.145	
Beryllium	D	mg/L	0.004									N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Boron	D	mg/L	2									N/A	5.32	4.14	4.39	5.01	
Boron	T	mg/L	2	3.72	3.87	3.55	3.58	3.9	3.84	3.3	3.09	N/A	5.51	4.29	3.95	4.99	
Cadmium	D	mg/L	0.005									N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Calcium	D	mg/L	103.2 ¹									N/A	118	105	109	118	
Calcium	T	mg/L	103.2 ¹	99.9	110	96.7	100	110	107	105 S	105	N/A	123	110	116	128 B	
Chromium	D	mg/L	0.1									N/A	0.0015 U	0.0015 U	0.0015 U	0.0015 U	
Chromium	T	mg/L	0.1	0.001 U	0.0013	0.001 U	0.001 U	0.001 U	0.0017	0.003	0.0014	N/A	0.0015 U	0.0063	0.0015 U	0.0057	
Cobalt	D	mg/L	0.006									N/A	0.0013	0.0012	0.001	0.001 U	
Cobalt	T	mg/L	0.006	0.0012	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.0035	0.0013	0.0054	
Lead	D	mg/L	0.0075									N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.0012	0.001 U	0.0016	
Lithium	D	mg/L	0.04									N/A	0.0179	0.0155	0.0194	0.016	
Lithium	T	mg/L	0.04	0.016	0.0176	0.0161	0.0163	0.0178	0.0181	0.0165	0.0162	N/A	0.0185	0.0175	0.0172	0.0184	
Mercury	D	mg/L	0.002									N/A	0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	N/A	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
Molybdenum	D	mg/L	0.1									N/A	0.0669	0.0796	0.0583	0.0643	
Molybdenum	T	mg/L	0.1	0.0646	0.0606	0.0582	0.0589	0.06	0.0584	0.0465	0.0463	N/A	0.0719	0.0696	0.0683	0.0602	
Nickel	D	mg/L	NS									N/A		0.002			
Nickel	T	mg/L	NS	0.0032	0.0028	0.0018	0.002	0.0017	0.0022	0.0032	0.0025	N/A		0.0093			
Selenium	D	mg/L	0.05									N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Selenium	T	mg/L	0.05	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.001 U	0.001 U	0.001 U	0.001 U	
Thallium	D	mg/L	0.002									N/A	0.002 U	0.002 U	0.002 U	0.002 U	
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	N/A	0.002 U	0.002 U	0.002 U	0.002 U	

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Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

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				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-6S-WG-20220913	APW-6S-WG-20221128	APW-6S-WG-20230201	APW-6S-WG-20230627
				Location ID	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S	APW-06S
				09/06/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/13/2022	11/28/2022	02/01/2023	06/27/2023	
				N	N	N	N	N	N	N	N	N	N	N	N	N	
UNSPECIFIED																	
Fluoride	NA	mg/L	4	0.41	0.26	0.25	0.26	0.25	0.25	0.27	0.24	0.29	0.28	0.32	0.29	0.26	
Radium-226	NA	pCi/L	NS	0.36 ± 0.14 U	0.09 ± 0.08 U	0.317 ± 0.331	0.22 ± 0.11 U	0.18 ± 0.13 U	0.11 ± 0.09 U	0.09 ± 0.09 U	0.15 ± 0.11 U	0.269 ± 0.182	0.2 ± 0.08 U	0.19 ± 0.09 U	0.0283 ± 0.232 U	0.11 ± 0.08 U	
Radium-228	NA	pCi/L	NS	0.56 ± 0.77 U	1.06 ± 0.53	0.481 ± 0.316	0.9 ± 0.4 J	0.92 ± 0.6 J	0.44 ± 0.44 U	0.71 ± 0.53 J	0.89 ± 0.38 J	0.228 ± 0.248 J	2.73 ± 0.9	0.41 ± 0.5 U	1.44 ± 0.518	-0.03 ± 0.59 U	
Sulfate	NA	mg/L	400	127	177	167	151	189	201	233	220	200	227	243	247	208	
CALC																	
Radium-226/228	NA	pCi/L	5									0.497 ± 0.308	2.93 ± 0.98	0.6 ± 0.59 U	1.47 ± 0.568	0.11 ± 0.67 U	
FIELD PARAM																	
Turbidity, Field	NA	NTU	17.96 ¹									30.5	15.1	5.56	6.67	9.06	
GEN CHEM																	
Chloride	NA	mg/L	200	31	28	27	27	26	27	26	25	24	25	24	24	23	
Dissolved Solids, Total	NA	mg/L	1200	500	546	574	528	566	588	598	666	600	630 H	605	638	615	
pH, Lab	NA	pH units	6.22-9.0 ²	7.16	7.06	7.18	7.23	7.09	7.13	7.09	7.02	7.24	7.38	7.04	7.12	7.05 H	
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Arsenic	D	mg/L	0.01									0.0009 J	0.001 U	0.001 U	0.0013	0.001	
Arsenic	T	mg/L	0.01	0.0017	0.0016	0.0018	0.002	0.0013	0.0012	0.0011	0.0011	0.0009 J	0.0012	0.001	0.0011	0.001 U	
Barium	D	mg/L	2									0.233	0.146	0.19 B	0.219	0.21	
Barium	T	mg/L	2	0.222	0.237	0.205	0.226	0.214	0.213	0.224	0.205	0.25	0.221	0.19	0.202	0.224	
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Boron	D	mg/L	2									4.92	5.95	6.88	7.12	5.83	
Boron	T	mg/L	2	4.65	5.93	5.83	5.64 S	5.8	6.93 S	7.42	6.66	4.77	6.61	6.31	6.84 S	5.84	
Cadmium	D	mg/L	0.005									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	
Calcium	D	mg/L	103.2 ¹									124	93.7	98	94.1	100	
Calcium	T	mg/L	103.2 ¹	101	97.2	87.5	96.8 S	99.5	98.1	98.7	97.4	115	105	103	97.1 S	109 B	
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	
Chromium	T	mg/L	0.1	0.0027	0.0173	0.0028	0.001 U	0.001 U	0.0048	0.0012	0.001 U	0.0028	0.0015 U	0.0022	0.0015 U	0.0019	
Cobalt	D	mg/L	0.006									0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U	
Iron	T	mg/L	NS									9.35					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0028	0.001 U	0.001 U	0.001 U	
Lithium	D	mg/L	0.04									0.0355	0.0384	0.0386	0.0406	0.0411	
Lithium	T	mg/L	0.04	0.0335	0.0413	0.04	0.0415	0.042	0.0458	0.0451	0.0417	0.0363	0.041	0.0393	0.0406	0.0412	
Manganese	T	mg/L	NS									0.53					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
Molybdenum	D	mg/L	0.1									0.229	0.235	0.24	0.244	0.232	
Molybdenum	T	mg/L	0.1	0.249	0.287	0.272	0.243	0.274	0.314	0.324	0.323	0.237	0.271	0.259	0.265	0.235	
Nickel	D	mg/L	NS									0.0015		0.001 U			
Nickel	T	mg/L	NS	0.0021	0.009	0.0021	0.0012	0.001 U	0.0031	0.0016	0.0012	0.0027		0.0023			
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
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	
Thallium	D	mg/L	0.002									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	

Notes:
Empty cells = not analyzed
N = Normal Environmental Sample
FD = Field Duplicate Sample
NA = not applicable
T = total
D = dissolved
mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
S = Spike Recovery outside recovery limits
R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling				
				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-7-WG-20220616	APW-7-WG-20220914	APW-7-WG-20221130	APW-7-WG-20230130	APW-7-WG-20230626
Location ID	Sample Date	Sample Type		APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07	APW-07
				09/07/2017	09/28/2017	10/19/2017	11/09/2017	11/28/2017	12/27/2017	01/18/2018	02/08/2018	06/16/2022	09/14/2022	11/30/2022	01/30/2023	06/26/2023
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.35	0.21	0.19	0.2	0.2	0.19	0.2	0.18	0.18	0.17	0.18	0.19	0.17
Radium-226	NA	pCi/L	NS	0.47 ± 0.15 U	0 ± 0.06 U	0.505 ± 0.396	0.11 ± 0.08 U	0.16 ± 0.14 U	0.25 ± 0.1 U	0.14 ± 0.09 U	0.24 ± 0.14 U	0.333 ± 0.208	0.18 ± 0.09 U	0.2 ± 0.11 U	0.337 ± 0.265	-0.01 ± 0.06 U
Radium-228	NA	pCi/L	NS	-0.42 ± 0.79 U	0.76 ± 0.61 J	0.785 ± 0.412	1.13 ± 0.39	0.61 ± 0.51 U	0.14 ± 0.35 U	1.19 ± 0.55	0.53 ± 0.4 U	0.766 ± 0.234	1.45 ± 0.72	1.13 ± 0.66	1.77 ± 0.352	1.11 ± 0.74
Sulfate	NA	mg/L	400	66	59	52	50	61	63	67	64	72	78	48	48	54
CALC																
Radium-226/228	NA	pCi/L	5									1.1 ± 0.313	1.63 ± 0.81 U	1.33 ± 0.77 U	2.1 ± 0.441	1.11 ± 0.8 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									66.2	34.8	10.5	79.2	14.8
GEN CHEM																
Chloride	NA	mg/L	200	15	15	14	15	16	15	15	15	11	12	12	14	10
Dissolved Solids, Total	NA	mg/L	1200	762	786	624	730	742	736	720	740	780	815 H	800	824	665
pH, Lab	NA	pH units	6.22-9.0 ²	6.84	6.84	6.86	6.87	6.83	6.96	6.97	6.88	6.88	7.02	6.78	7.23	6.79 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0015	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.001 U	0.001 U	0.0012
Arsenic	T	mg/L	0.01	0.0014	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0023	0.0016	0.0011	0.0014	0.0014
Barium	D	mg/L	2									0.334	0.255	0.354 B	0.411	0.303
Barium	T	mg/L	2	0.465	0.448	0.394	0.401	0.37	0.374	0.38	0.359	0.374	0.382	0.381	0.371	0.312
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.148	0.193	0.199	0.267	0.208
Boron	T	mg/L	2	0.235	0.308	0.302	0.3	0.278	0.342	0.298	0.318	0.168	0.208	0.217	0.246	0.237
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2 ¹									222	199	204	199	180 S
Calcium	T	mg/L	103.2 ¹	192	204	171	187	196	193	191	185	238	210	209	200	183 BS
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0017	0.0063	0.0026	0.001 U	0.001 U	0.0329	0.001 U	0.001 U	0.0041	0.0021	0.0015 U	0.0034	0.0015 U
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 J	0.001 U	0.001 U	0.001 U	0.001 U
Iron	T	mg/L	NS									17.3				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0074	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0126	0.0148	0.0158	0.0191	0.0136
Lithium	T	mg/L	0.04	0.0147	0.0181	0.0172	0.0176	0.0185	0.0191	0.0181	0.0178	0.0143	0.0161	0.0166	0.0181	0.0153
Manganese	T	mg/L	NS									1.11				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0026	0.0026	0.0021	0.0027	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	0.0028
Nickel	D	mg/L	NS									0.0008 J		0.001 U		
Nickel	T	mg/L	NS	0.0014	0.0033	0.0013	0.001 U	0.001 U	0.015	0.001 U	0.001 U	0.0042		0.001 U		
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
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
Thallium	D	mg/L	0.002									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

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
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NTU = nephelometric turbidity units
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R = RPD outside accepted recovery limits
U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
¹ Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
² Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling				
				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-8-WG-20220616	APW-8-WG-20220915	APW-8-WG-20221130	APW-8-WG-20230202	APW-8-WG-20230626
Location ID	Sample Date	Sample Type		APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08	APW-08
				09/07/2017	09/28/2017	10/18/2017	11/08/2017	11/27/2017	12/27/2017	01/17/2018	02/08/2018	06/16/2022	09/15/2022	11/30/2022	02/02/2023	06/26/2023
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.3	0.3	0.29	0.29	0.28	0.28	0.3	0.28	0.29	0.26	0.28	0.26	0.26
Radium-226	NA	pCi/L	NS	0.22 ± 0.12 U	0.12 ± 0.08 U	0.2 ± 0.393	0.11 ± 0.1 U	0.35 ± 0.16 U	0.14 ± 0.08 U	0.21 ± 0.11 U	0.39 ± 0.15 U	0.208 ± 0.236 J	0.27 ± 0.1 U	0.4 ± 0.13 U	0.247 ± 0.244 J	0.34 ± 0.12 U
Radium-228	NA	pCi/L	NS	1.13 ± 0.63	0.88 ± 0.48 J	1.3 ± 0.545	0.37 ± 0.25 U	0.77 ± 0.55 J	1.31 ± 0.58	0.64 ± 0.49 U	0.49 ± 0.43 U	0.526 ± 0.224	0.86 ± 0.62 J	1.68 ± 0.77	-0.157 ± 0.282 U	0.11 ± 0.6 U
Sulfate	NA	mg/L	400	43	40	38	40	39	38	39	37	39	39	34	29	31
CALC																
Radium-226/228	NA	pCi/L	5									0.735 ± 0.325	1.13 ± 0.72 U	2.08 ± 0.9	0.247 ± 0.373 J	0.45 ± 0.72 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									119	139	305	26.9	152
GEN CHEM																
Chloride	NA	mg/L	200	9	10	10	10	10	11	12	11	9	11	12	13	10
Dissolved Solids, Total	NA	mg/L	1200	438	458	436	446	466	410	398	442	382	372 H	370	378	420
pH, Lab	NA	pH units	6.22-9.0 ²	7.04	7.07	7	7.12	7.25	7.11	7.04	7.04	7.34	7.47	7.25	7.31	7.18 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0011	0.001 U	0.0012	0.001	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	0.002
Barium	D	mg/L	2									0.194	0.163	0.146 B	0.15	0.191
Barium	T	mg/L	2	0.207	0.256	0.219	0.24	0.217	0.223	0.226	0.215	0.235	0.19	0.179	0.167	0.225
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0777	0.0993	0.0844	0.0895	0.124
Boron	T	mg/L	2	0.132	0.154	0.135	0.138	0.141	0.145	0.151	0.132	0.115	0.11	0.103	0.095	0.103
Cadmium	D	mg/L	0.005									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Cadmium	T	mg/L	0.005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002 J	0.001 U	0.001 U	0.001 U	0.001 U
Calcium	D	mg/L	103.2 ¹									108	79.7	75.4	72.1	92.6
Calcium	T	mg/L	103.2 ¹	97.4	105	92.6	101	102	98.6	95	97.8	93.3	85.1	82.8	79.4	99.4 B
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0018	0.0023	0.001 U	0.0059	0.001 U	0.0021	0.001 U	0.001 U	0.0054	0.0016	0.0036	0.0027	0.0082
Cobalt	D	mg/L	0.006									0.0013	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.0017	0.0013	0.001	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.0013	0.0016	0.0012	0.0019
Iron	T	mg/L	NS									3.14				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0024	0.001 U	0.0012	0.001 U	0.0028
Lithium	D	mg/L	0.04									0.0141	0.0142	0.0132	0.0131	0.0125
Lithium	T	mg/L	0.04	0.0196	0.0206	0.0207	0.0216	0.0223	0.0216	0.0192	0.0196	0.016	0.016	0.0147	0.0155	0.0157
Manganese	T	mg/L	NS									0.202				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0008 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0011	0.001 U	0.001 U	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 J	0.0015 U	0.0015 U	0.0015 U	0.0015 U
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	0.0113
Selenium	T	mg/L	0.05	0.008	0.0141	0.0132	0.0149	0.0135	0.0141	0.0149	0.013	0.0036	0.0077	0.011	0.0148	0.0129
Thallium	D	mg/L	0.002									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

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
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 U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
 1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
 2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
 Highlighted values exceed action level
 NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	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-9-WG-20220615	APW-9-WG-20220913	APW-9-WG-20221130	APW-9-WG-20230201	APW-9-WG-20230627
				Location ID	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09	APW-09
				09/05/2017	09/27/2017	10/18/2017	11/08/2017	11/27/2017	12/28/2017	01/17/2018	02/08/2018	06/15/2022	09/13/2022	11/30/2022	02/01/2023	06/27/2023	
				N	N	N	N	N	N	N	N	N	N	N	N	N	
(None)																	
Fluoride	NA	mg/L	4	0.19	0.22	0.21	0.2	0.2	0.2	0.22	0.19	0.23	0.19	0.2	0.19	0.19	
Radium-226	NA	pCi/L	NS	0.17 ± .12 U	0.03 ± 0.07 U	-0.229 ± 0.389	0.14 ± 0.09 U	-0.06 ± 0.1 U	0.14 ± 0.08 U	0.05 ± 0.08 U	0.13 ± 0.13 U	0.267 ± 0.199	0.24 ± 0.09 U	0.06 ± 0.06 U	0.0975 ± 0.156 J	0.18 ± 0.09 U	
Radium-228	NA	pCi/L	NS	0.91 ± .69 J	0.67 ± 0.56 U	0.275 ± 0.316	0.49 ± 0.29 U	1.07 ± 0.48 U	1.06 ± 0.51	0.46 ± 0.46 U	0.23 ± 0.37 U	-0.213 ± 0.244 U	0.22 ± 0.49 U	0.77 ± 0.55 J	0.023 ± 0.243 U	0.35 ± 0.65 U	
Sulfate	NA	mg/L	400	65	47	53	65	50	42	28	25	104	39	36	38	47	
CALC																	
Radium-226/228	NA	pCi/L	5									0.267 ± 0.315 J	0.46 ± 0.58 U	0.83 ± 0.61 U	0.12 ± 0.289 U	0.53 ± 0.74 U	
FIELD PARAM																	
Turbidity, Field	NA	NTU	17.96 ¹									34.2	7.3	7.28	23.6	24.7	
GEN CHEM																	
Chloride	NA	mg/L	200	13	13	13	13	13	13	13	768	13	12	12	13	12	
Dissolved Solids, Total	NA	mg/L	1200	364 R	372	324	366	392	278	348	3380	424	380 H	372	360	386	
pH, Lab	NA	pH units	6.22-9.0 ²	7.31	7.35	7.39	7.39	7.52	7.42	7.57	7.33	7.48	7.59	7.32	7.72	7.32 H	
METALS																	
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	
Arsenic	D	mg/L	0.01									0.0019	0.0021	0.0019	0.0019	0.0021	
Arsenic	T	mg/L	0.01	0.0031	0.0024	0.0018	0.0022	0.002	0.002	0.0022	0.0022	0.0026	0.0025	0.0021	0.0024	0.0021	
Barium	D	mg/L	2									0.129	0.111	0.109 B	0.107	0.116	
Barium	T	mg/L	2	0.227	0.171	0.118	0.133	0.121	0.129	0.133	0.125	0.186	0.134	0.124	0.122	0.123	
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Boron	D	mg/L	2									1.32	0.327	0.24	0.239	0.572	
Boron	T	mg/L	2	0.877	0.569	0.668	0.792	0.506	0.369	0.317	0.255	1.61	0.329	0.243	0.225	0.473	
Cadmium	D	mg/L	0.005									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	
Calcium	D	mg/L	103.2 ¹									107 S	76.5	78.3	76.3	82.8 S	
Calcium	T	mg/L	103.2 ¹	85.9	85.3	76.5	81.9	85.6	81.5 S	80.3	92	110	89.5	80.5	80.3	86.9 B	
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	
Chromium	T	mg/L	0.1	0.0148	0.0021	0.001 U	0.001 U	0.001 U	0.0011	0.0016	0.001 U	0.0011 J	0.0015 U	0.0015	0.0015 U	0.0015 U	
Cobalt	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Cobalt	T	mg/L	0.006	0.0031	0.0014	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	
Iron	T	mg/L	NS									0.496					
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0039	0.001 U	0.001 U	0.001 U	
Lithium	D	mg/L	0.04									0.0184	0.0137	0.0131	0.0125	0.0163	
Lithium	T	mg/L	0.04	0.0176	0.0173	0.0174	0.018	0.0167	0.0173	0.0155	0.0148	0.0246	0.0143	0.0131	0.0137	0.0157	
Manganese	T	mg/L	NS									0.599					
Mercury	D	mg/L	0.002										0.0002 U				
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
Molybdenum	D	mg/L	0.1									0.0351	0.0182	0.0139	0.0165	0.0211	
Molybdenum	T	mg/L	0.1	0.0223	0.0252	0.0327	0.0303	0.0247	0.0246	0.0223	0.0224	0.0455	0.0194	0.015	0.0173	0.0189	
Nickel	D	mg/L	NS									0.0017		0.001 U			
Nickel	T	mg/L	NS	0.012	0.0032	0.001 U	0.001	0.001 U	0.001 U	0.0012	0.001 U	0.004		0.0019			
Selenium	D	mg/L	0.05									0.021	0.0142	0.0147	0.0179	0.0186	
Selenium	T	mg/L	0.05	0.0126	0.0139	0.017	0.0186	0.0138	0.0143	0.0147	0.0134	0.0219	0.0151	0.0138	0.0196	0.0198	
Thallium	D	mg/L	0.002									0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	
Thallium	T	mg/L	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	

Notes:
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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
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U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
¹ Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
² Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
Highlighted values exceed action level
NS = No standard

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

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment								Post-Closure Sampling				
				Sample ID Location ID Sample Date Sample Type	APW-10D-20170907 APW-10D 09/07/2017 N	APW-10D-20170927 APW-10D 09/27/2017 N	APW-10D-20171019 APW-10D 10/19/2017 N	APW-10D-20171109 APW-10D 11/09/2017 N	APW-10D-20171128 APW-10D 11/28/2017 N	APW-10D-20171228 APW-10D 12/28/2017 N	APW-10D-20180118 APW-10D 01/18/2018 N	APW-10D-20180209 APW-10D 02/09/2018 N	APW-10D-WG-20220615 APW-10D 06/15/2022 N	APW-10D-WG-20220916 APW-10D 09/16/2022 N	APW-10D-WG-20221129 APW-10D 11/29/2022 N	APW-10D-WG-20230202 APW-10D 02/02/2023 N
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.1	0.12	0.1	0.1 U	0.11	0.1	0.11	0.1 U	0.12	0.1	0.12	0.12	0.11
Radium-226	NA	pCi/L	NS	0.34 ± 0.12 U	-0.11 ± 0.1 U	0.121 ± 0.337	0.19 ± 0.12 U	0.16 ± 0.13 U	0.23 ± 0.1 U	0.08 ± 0.1 U	0 ± 0.07 U	0.249 ± 0.207	0.22 ± 0.09 U	0.31 ± 0.11 U	0.186 ± 0.157	0.31 ± 0.12 U
Radium-228	NA	pCi/L	NS	1.16 ± 0.52	1.72 ± 0.64	0.633 ± 0.366	0.98 ± 0.33 J	0.47 ± 0.55 U	0.34 ± 0.37 U	0.98 ± 0.6 J	0.59 ± 0.43 U	1.19 ± 0.311	0.56 ± 0.58 U	0.28 ± 0.43 U	0.847 ± 0.370	1.39 ± 0.76
Sulfate	NA	mg/L	400	38	44	43	42	42	44	44	44	41	43	42	39	44
CALC																
Radium-226/228	NA	pCi/L	5									1.44 ± 0.374	0.78 ± 0.67 U	0.59 ± 0.54 U	1.03 ± 0.402	1.7 ± 0.88 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									46.9	21.9	36.4	45.3	176
GEN CHEM																
Chloride	NA	mg/L	200	24	17	17	15	17	16	14	16	16	18	14	13	14
Dissolved Solids, Total	NA	mg/L	1200	466	474	442	468	482	448	448	512	452	460 H	460	454	485
pH, Lab	NA	pH units	6.22-9.0 ²	7.12	7.11	7.05	7.11	7.12	7.15	7.03	7.03	7.21	7.29	7.04	7.57	6.98 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.0008 J	0.001 U	0.0012	0.0011	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	0.0019
Barium	D	mg/L	2									0.342	0.321	0.3 B	0.304	0.348
Barium	T	mg/L	2	0.437	0.304	0.363	0.325	0.284	0.295	0.391	0.357	0.407	0.418	0.276	0.343	0.485
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.0786	0.0711	0.0841	0.0579	0.0704
Boron	T	mg/L	2	0.0999	0.101	0.0843	0.0713	0.0885	0.0922	0.0923	0.0906	0.118	0.0731	0.0522	0.073	0.0674
Cadmium	D	mg/L	0.005									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	0.0011
Calcium	D	mg/L	103.2 ¹									143	124	113	114	114
Calcium	T	mg/L	103.2 ¹	118	136	120	121	125	123	148 S	124 S	135	374	115	122	611 B
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0036	0.0078	0.0022	0.0011	0.001 U	0.001 U	0.0042	0.001 U	0.0015 U	0.0148	0.0024	0.0015 U	0.0015
Cobalt	D	mg/L	0.006									0.0025	0.0021	0.0032	0.003	0.0026
Cobalt	T	mg/L	0.006	0.0039	0.0024	0.0025	0.0032	0.0017	0.0013	0.0026	0.0026	0.0034	0.0049	0.003	0.0033	0.007
Iron	T	mg/L	NS									0.758				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.002	0.001 U	0.001 U	0.001 U
Lithium	D	mg/L	0.04									0.0135	0.0135	0.0133	0.012	0.0148
Lithium	T	mg/L	0.04	0.0147	0.0155	0.0146	0.0146	0.0153	0.0155	0.0142	0.014	0.018	0.0156	0.0126	0.0146	0.0158
Manganese	T	mg/L	NS									1.16				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	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	0.0015 U
Nickel	D	mg/L	NS									0.0054		0.0054		
Nickel	T	mg/L	NS	0.0095	0.0077	0.0065	0.0057	0.0035	0.0025	0.0072	0.0053	0.007		0.0063		
Selenium	D	mg/L	0.05									0.001 U	0.0016	0.0015	0.0024	0.0013
Selenium	T	mg/L	0.05	0.001 U	0.0011	0.0012	0.0013	0.001 U	0.0014	0.0016	0.0016	0.001 U	0.0021	0.0013	0.0027	0.0016
Thallium	D	mg/L	0.002									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

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Empty cells = not analyzed
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NA = not applicable
T = total
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mg/L = milligrams per liter
pCi/L = picocuries per liter
NTU = nephelometric turbidity units
H = Holding times exceeded
J = Analyte detected below quantitation limits
J3 = The associated batch QC was outside the established quality control range for precision
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Groundwater Summary Table
Grand Tower Energy Center (GTEC)
Grand Tower, US-IL

Parameter/Analyte	Total or Dissolved	Units	35 IAC 845.600	Sampled prior to closure of CCR Impoundment						Post-Closure Sampling						
				Sample ID	APW-10S-20170907	APW-10S-20170927	APW-10S-20171019	APW-10S-20171109	APW-10S-20171128	APW-10S-20180118	APW-10S-20180209	APW-10S-WG-20220615	APW-10S-WG-20220915	APW-10S-WG-20221129	APW-10S-WG-20230202	APW-10S-WG-20230626
				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
				09/07/2017	09/27/2017	10/19/2017	11/09/2017	11/28/2017	12/28/2017	01/18/2018	02/09/2018	06/15/2022	09/15/2022	11/29/2022	02/02/2023	06/26/2023
				N	N	N	N	N	N	N	N	N	N	N	N	N
UNSPECIFIED																
Fluoride	NA	mg/L	4	0.19	0.21	0.16	0.16	0.16	0.17	0.17	0.16	0.17	0.15	0.17	0.15	0.15
Radium-226	NA	pCi/L	NS	0.4 ± 0.14 U	0.19 ± 0.11 U	0.774 ± 0.430	0.16 ± 0.11 U	0.18 ± 0.16 U	0.23 ± 0.1 U	0.29 ± 0.12 U	0.24 ± 0.13 U	0.778 ± 0.324	0.3 ± 0.1 U	0.31 ± 0.11 U	1.08 ± 0.395	0.37 ± 0.13 U
Radium-228	NA	pCi/L	NS	0.38 ± 0.47 U	0.98 ± 0.7 J	0.856 ± 0.391	0.71 ± 0.33 J	0.66 ± 0.57 U	0.56 ± 0.43 U	2.71 ± 0.78	0.93 ± 0.52 J	0.475 ± 0.268 J	2.52 ± 0.91	1.64 ± 0.68	0.162 ± 0.371 U	-0.18 ± 0.47 U
Sulfate	NA	mg/L	400	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	21 S	10 U	10 U	10 U
CALC																
Radium-226/228	NA	pCi/L	5									1.25 ± 0.42	2.82 ± 1.01	1.95 ± 0.79 U	1.24 ± 0.542	0.37 ± 0.6 U
FIELD PARAM																
Turbidity, Field	NA	NTU	17.96 ¹									61.5	34.3	52.6	37.3	57.2
GEN CHEM																
Chloride	NA	mg/L	200	10	7	6	6	6	6	6	6	12	15	18	21	14
Dissolved Solids, Total	NA	mg/L	1200	708	720	678	708	734	770	680 R	762	735	770 H	750	780	725
pH, Lab	NA	pH units	6.22-9.0 ²	6.99	6.96	6.95	6.98	6.97	6.98	7.06	6.91	7.09	7.2	6.95	7.2	7.01 H
METALS																
Antimony	D	mg/L	0.006									0.001 U	0.001 U	0.001 U	0.0016	0.001 U
Antimony	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	D	mg/L	0.01									0.152	0.0612	0.0138	0.171	0.166
Arsenic	T	mg/L	0.01	0.186	0.189	0.18	0.209	0.183	0.193	0.23	0.198	0.185	0.187	0.182	0.191	0.194
Barium	D	mg/L	2									0.423	0.292	0.162 B	0.506	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	0.589
Beryllium	D	mg/L	0.004									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Beryllium	T	mg/L	0.004	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Boron	D	mg/L	2									0.57	0.541	7.48	0.497	0.578
Boron	T	mg/L	2	0.525	0.544	0.536	0.595	0.545	0.573	0.645	0.582	0.683	0.565	0.569	0.592	0.582
Cadmium	D	mg/L	0.005									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
Calcium	D	mg/L	103.2 ¹									169	156	142	145	142
Calcium	T	mg/L	103.2 ¹	136	144	135	152	150	145	140	140	161	171 S	154	145	153 B
Chromium	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Chromium	T	mg/L	0.1	0.0091	0.0019	0.001	0.0016	0.001 U	0.0016	0.0019	0.001 U	0.0015 J	0.015	0.0032	0.0023	0.0025
Cobalt	D	mg/L	0.006									0.0001 J	0.001 U	0.001 U	0.001 U	0.001 U
Cobalt	T	mg/L	0.006	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0006 J	0.0021	0.0013	0.001 U	0.001 U
Iron	T	mg/L	NS									19.6				
Lead	D	mg/L	0.0075									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lead	T	mg/L	0.0075	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0007 J	0.0043	0.0014	0.001 U	0.0016
Lithium	D	mg/L	0.04									0.0266	0.0286	0.0387 R	0.0268	0.0278
Lithium	T	mg/L	0.04	0.0263	0.0278	0.0272	0.0289	0.0293	0.0308	0.0316	0.0297	0.0353	0.033	0.0307	0.0323	0.0291
Manganese	T	mg/L	NS									0.243				
Mercury	D	mg/L	0.002										0.0002 U			
Mercury	T	mg/L	0.002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	D	mg/L	0.1									0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Molybdenum	T	mg/L	0.1	0.0017	0.0016	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U	0.0015 U
Nickel	D	mg/L	NS									0.001 U		0.001 U		
Nickel	T	mg/L	NS	0.0051	0.0012	0.001 U	0.0015	0.001 U	0.001 U	0.0014	0.001 U	0.0014		0.0031		
Selenium	D	mg/L	0.05									0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
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
Thallium	D	mg/L	0.002									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

Notes:
 Empty cells = not analyzed
 N = Normal Environmental Sample
 FD = Field Duplicate Sample
 NA = not applicable
 T = total
 D = dissolved
 mg/L = milligrams per liter
 pCi/L = picocuries per liter
 NTU = nephelometric turbidity units
 H = Holding times exceeded
 J = Analyte detected below quantitation limits
 J3 = The associated batch QC was outside the established quality control range for precision
 S = Spike Recovery outside recovery limits
 R = RPD outside accepted recovery limits
 U = Not Detected at the Reporting Limit

*Protection Standard is from Title 35 Section 845.600 unless otherwise noted
 1 Standard is from the Upper Tolerance Limit (UTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018
 2 Standard value 6.22 is from the Lower Tolerance Limit (LTL) calculated from background well APW-01R concentrations from 8 quarterly sampling events from 2017-2018 and 9.0 is the regulatory standard
 Highlighted values exceed action level
 NS = No standard

APPENDIX A

**SECOND QUARTER 2023 CCR IMPOUNDMENT
INSPECTION REPORT**



**Grand Tower Energy Center
Closed CCR Impoundment
Quarterly Inspection Form**

Date: 6/26/2023
Time: 9:45-11:00
Name: Marshall Arendell
(Inspector)

Weather:

Temperature:

80 deg. F

- Sunny
- Cloudy
- Raining
- Other

Observations:

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

Conditions Limiting Visibility:

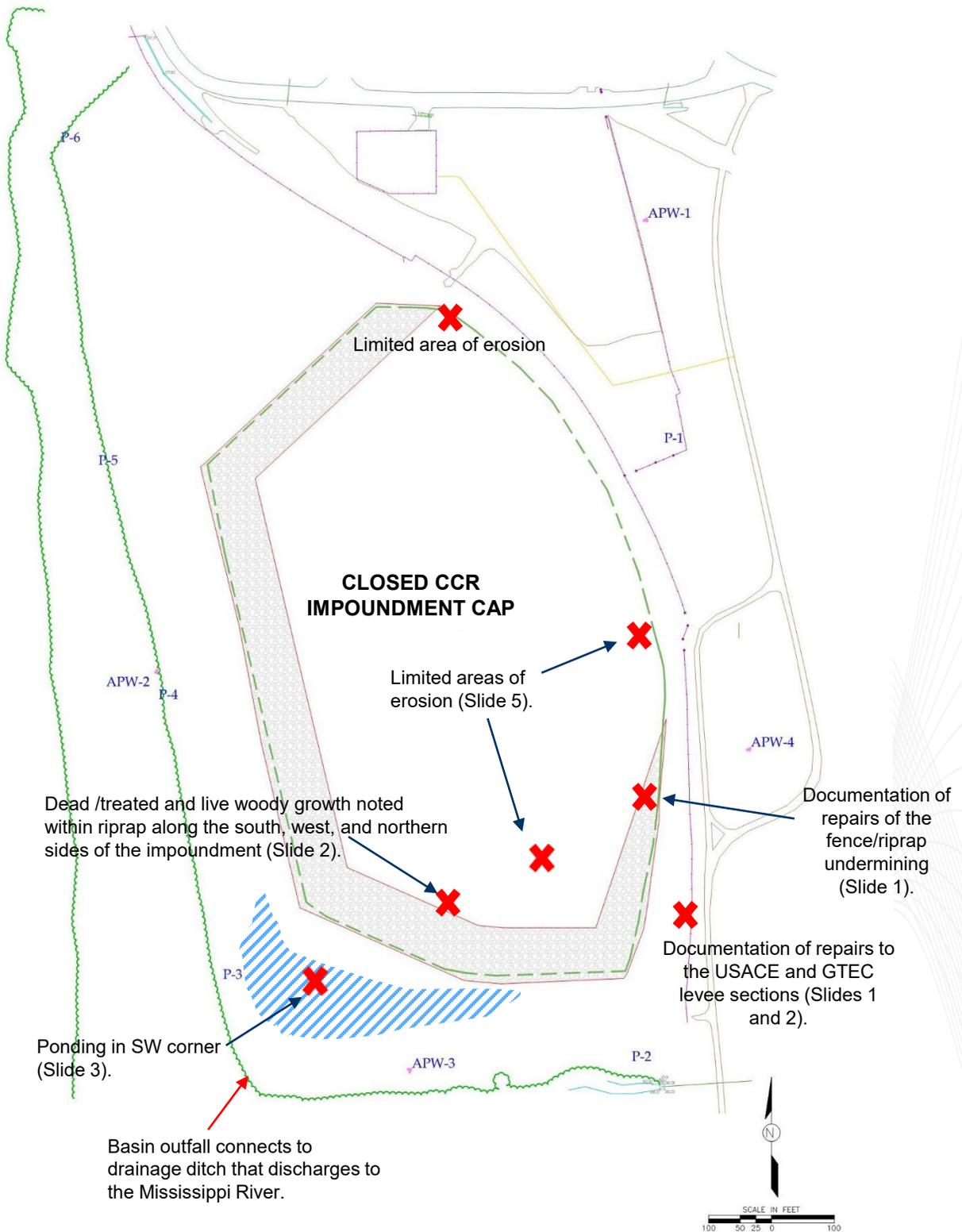
- Snow Cover
- Vegetation
- None
- Other

Observations in Detail Below:

- ERM onsite for the Q2 2023 inspection of the CCR impoundment and groundwater sampling event.
- Repairs to the United States Army Corps of Engineers (USACE) and GTEC levees continue to hold, and successful revegetation of levee face continues to progress.
- Erosion noted across north, west, and southern CCR impoundment cap faces up to 9" deep.
- The woody vegetation (up to 1" diameter) noted to be within the riprap on the north, west, and southern impoundment cap faces during 2022 was treated with herbicide during Q1 2023. However, some live woody vegetation growth remains within the riprap.
- Ponding continues to be noted in the SW corner of the basin near the outfall.
- The impoundment cap was mowed during Q2 of 2023 and found to be in generally good condition.
- The Inspector recommends continued treatment of woody growth within the riprap with herbicide, and the filling of the erosional channels noted above.

Please see observation locations on figure on the following page.

Observation Locations Map



Grand Tower Energy Center Q2 2023 Closed CCR Impoundment Cap Inspection

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



Facing south along the repaired fenceline, riprap, and levee area. Levee has successfully revegetated since repairs were initiated during 2022.

Repairs to the Levee erosion on the SE Side of Closed CCR Impoundment Cap and Woody Growth Observations

June 26th, 2023, at 09:12:43 AM



Facing east towards impoundment cap – dead/herbicide treated woody vegetation noted within riprap up to 1” diameter. Limited amount of live woody growth remains.

June 26th, 2023, at 10:05:40 AM



Facing northeast towards repaired section of USACE and GTEC levee sections.

Ponding in the SW Corner of Site Basin Near the Outfall



Ponded area in southwest corner of site as viewed from mowed 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 at Grand Tower, IL reaches a stage of approximately 27 ft.

Erosional Channel Observations



Erosion up to 9" deep - facing east from center-east side of impoundment cap.



Erosion up to 9" deep - facing south from center-south side of impoundment cap.



Erosion up to 9" deep - facing southwest from southern side of impoundment cap.

APPENDIX B

**SECOND QUARTER 2023 GROUNDWATER
MONITORING WELL INSPECTION FORMS**

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-05R Date: 6/26/2023
Total Depth (Actual): 62.98 (BTOC) Time: 10:05
Total Depth (Measured): 62.89 (BTOC)
Depth to Water (Measured): 32.63 (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: YES
If yes, are current well "markers" adequate around well: _____
Comments: No well markers present.

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

APW-05 was redrilled as APW-05R following
the Q1 2023 groundwater sampling event.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-01R Date: 6/26/2023
Total Depth (Actual): 58.38 (BTOC) Time: 10:25
Total Depth (Measured): 56.22 (BTOC)
Depth to Water (Measured): 32.92 (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: 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:

Hole in the ground around ballards.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-02 Date: 6/26/2023
Total Depth (Actual): 58.75 (BTOC) Time: 10:10
Total Depth (Measured): 58.43 (BTOC)
Depth to Water (Measured): 32.24 (BTOC)

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

LNAPL Present: NO
If Yes, measured thickness = _____
DNAPL Present: NO
If Yes, measured thickness = _____

Well Completion Type:

Condition of protector: INTACT YES
Well ID present and readable: YES
Locks intact: YES
Weep hole present: 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: 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: 6/26/2023
Total Depth (Actual): 59.65 (BTOC) Time: 11:05
Total Depth (Measured): 59.42 (BTOC)
Depth to Water (Measured): 32.01 (BTOC)

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

LNAPL Present: NO
If Yes, measured thickness = _____
DNAPL Present: NO
If Yes, measured thickness = _____

Well Completion Type:

Condition of protector: INTACT YES
Well ID present and readable: YES
Locks intact: YES
Weep hole present: YES
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:

Water present in protector.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-04 Date: 6/26/2023
Total Depth (Actual): 60.4 (BTOC) Time: 10:35
Total Depth (Measured): 60.28 (BTOC)
Depth to Water (Measured): 33.55 (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: YES
If yes, are current well "markers" adequate around well: NO
Comments: Only 2 well markers - both in bad condition.

Well Surface Seal: INTACT

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

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-06S Date: 6/26/2023
Total Depth (Actual): 63.98 (BTOC) Time: 10:00
Total Depth (Measured): 63.83 (BTOC)
Depth to Water (Measured): 31.09 (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: 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:

Sand surrounding the well and marking points.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-06D Date: 6/27/2023
Total Depth (Actual): 152.57 (BTOC) Time: 9:45
Total Depth (Measured): 156.62 (BTOC)
Depth to Water (Measured): 30.77 (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: 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:

Sand surrounding the well and marking points. Had to do well inspection on
6/27 due to wasp nest in well protector.

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-07 Date: 6/26/2023
Total Depth (Actual): 63.35 (BTOC) Time: 11:00
Total Depth (Measured): 63.19 (BTOC)
Depth to Water (Measured): 27.69 (BTOC)

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

LNAPL Present: NO
If Yes, measured thickness = _____
DNAPL Present: NO
If Yes, measured thickness = _____

Well Completion Type:

Condition of protector: INTACT YES
Well ID present and readable: YES
Locks intact: YES
Weep hole present: 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: YES
Any observed ponding: NO
Is surface run-off flow evident around well: NO

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-08 Date: 6/26/2023
Total Depth (Actual): 61.89 (BTOC) Time: 10:55
Total Depth (Measured): 61.85 (BTOC)
Depth to Water (Measured): 28.52 (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: YES
Any observed ponding: NO
Is surface run-off flow evident around well: NO

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-09 Date: 6/26/2023
Total Depth (Actual): 63.4 (BTOC) Time: 10:30
Total Depth (Measured): 63.14 (BTOC)
Depth to Water (Measured): 32.44 (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: YES
Any observed ponding: NO
Is surface run-off flow evident around well: NO

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-10S Date: 6/26/2023
Total Depth (Actual): 62.84 (BTOC) Time: 10:42
Total Depth (Measured): 62.75 (BTOC)
Depth to Water (Measured): 26.75 (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: YES
Any observed ponding: NO
Is surface run-off flow evident around well: NO

Well Casing Condition: INTACT

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

General Comments:

Well Inspection Worksheet

Grand Tower Energy Center

Grand Tower, IL

Well ID: APW-10D Date: 6/26/2023
Total Depth (Actual): 98.19 (BTOC) Time: 10:40
Total Depth (Measured): 98.07 (BTOC)
Depth to Water (Measured): 24.64 (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: YES
Any observed ponding: NO
Is surface run-off flow evident around well: NO

Well Casing Condition: INTACT

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

General Comments:

APPENDIX C SECOND QUARTER 2023 FIELD DATA FORMS



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-02
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 53.43 (ft)	Reference Elevation 364.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 32.77 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 58.43 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 159.1 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 47.2 - 57.2(ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 4.19 (gal) / 1.4 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:20	33.96	250	0	24.1	7.04	1050	NM	4.97	279.6	1000	NM	OPAQUE BROWN & NO ODOR
11:25	35.37	150	0.5	24.1	6.77	1050	NM	4.97	279.6	1000	NM	OPAQUE BROWN & NO ODOR
11:30	36.09	150	0.6	22.6	6.74	1030	NM	1.69	255.2	1000	NM	OPAQUE BROWN & NO ODOR
11:35	36.91	150	0.7	21.2	6.68	1015	NM	1.92	245.6	517	NM	OPAQUE BROWN & NO ODOR
11:40	37.34	150	0.8	22.4	6.69	1007	NM	2.29	241.4	275	NM	TURBID BROWN & NO ODOR
11:45	37.68	150	0.9	23.2	6.69	1008	NM	2.23	241.3	219	NM	TURBID BROWN & NO ODOR
11:50	38.01	150	1	23.2	6.69	1009	NM	2.22	241.3	168	NM	TURBID BROWN & NO ODOR
11:55	38.62	150	1.1	22.6	6.69	1011	NM	2.08	239.9	141	NM	TURBID BROWN & NO ODOR
12:00	39	150	1.2	22.8	6.86	1013	NM	1.93	235.1	114	NM	CLOUDY & NO ODOR
12:05	39.41	150	1.3	22.9	6.84	1008	NM	1.9	231	112.6	NM	CLOUDY & NO ODOR
12:10	39.73	150	1.4	23.1	6.82	1012	NM	1.87	229	104.3	NM	CLOUDY & NO ODOR

Sample ID(s): APW-02-WG-20230627,DUP-02-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 07/05/2023 16:24
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-03
Well Permit No:

Date: 2023/06/26
sunny

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 32.01 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 59.42 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 233.3 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 45.7 - 55.7 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 4.47 (gal) / 2.75 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
11:10	32.07	150	0	16.7	8.11	764	NM	1.22	142.4	200	NM	CLOUDY GRAY & NO ODOR
11:15	32.07	200	0.25	17.1	8.16	756	NM	0.54	138.9	174	NM	CLOUDY GRAY & NO ODOR
11:20	32.07	200	0.5	16.8	8.19	757	NM	0.38	129.3	115	NM	TURBID & NO ODOR
11:25	32.07	250	0.75	16.8	8.2	756	NM	0.3	122.2	78.1	NM	TURBID & NO ODOR
11:30	32.07	250	1	16.8	8.31	756	NM	0.25	100.9	46.7	NM	CLEAR & NO ODOR
11:35	32.07	250	1.25	16.8	8.32	753	NM	0.2	85.2	26.5	NM	CLEAR & SLIGHT ROTTEN-EGG LIKE ODOR
11:40	32.07	250	1.5	16.6	8.35	753	NM	0.18	74.4	17.7	NM	CLEAR & NO ODOR
11:45	32.07	250	1.75	16.5	8.37	754	NM	0.17	64.6	10.2	NM	CLEAR & NO ODOR
11:50	32.07	250	2	16.6	8.41	753	NM	0.15	54.2	6.05	NM	CLEAR & NO ODOR
11:55	32.07	250	2.25	16.6	8.42	752	NM	0.13	68.7	6.64	NM	CLEAR & NO ODOR
12:00	32.07	250	2.5	16.5	8.41	753	NM	0.13	73.5	6.22	NM	CLEAR & NO ODOR
12:05	32.07	250	2.75	16.5	8.39	754	NM	0.13	72.3	6.04	NM	CLEAR & NO ODOR

Sample ID(s): APW-03-WG-20230626	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/30/2023 14:33
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-04
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 55.28 (ft)	Reference Elevation 367.44 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 33.76 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 60.28 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 421.4 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 45.7 - 55.7 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 4.33 (gal) / 3 (gal)	Well Construction PVC

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

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
17:00	33.76	350	0	23.8	6.7	415.1	NM	6.66	330.9	351	NM	TURBID BROWN & NO ODOR
17:05	33.76	400	0.5	18.7	6.49	529.5	NM	2.26	296.9	86.6	NM	CLOUDY & NO ODOR
17:10	33.76	400	1	18.4	6.59	545.8	NM	1.05	288.5	52.8	NM	CLEAR & NO ODOR
17:15	33.76	450	1.5	18.3	6.68	548.1	NM	0.9	276.9	47.5	NM	CLEAR & NO ODOR
17:20	33.76	450	2	18.5	7.05	548.9	NM	0.73	289.2	41.5	NM	CLEAR & NO ODOR
17:25	33.76	450	2.5	18.5	7.04	549.8	NM	0.72	276.6	39.2	NM	CLEAR & NO ODOR
17:30	33.76	450	3	18.4	7.04	549.7	NM	0.72	276	38.7	NM	CLEAR & NO ODOR

Sample ID(s): APW-04-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/30/2023 14:47
Analysis:			





Low Flow Groundwater Sampling Field Data Form

Well ID: APW-05
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 57.89 (ft)	Reference Elevation 363.8 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 32.72 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 62.89 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 472.5 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 4.92 (gal) / 4.5 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:22	32.74	275	0	18	7.28	868	NM	2.85	188.9	360	NM	TURBID GREY & NO ODOR
13:27	32.74	450	0.5	18.1	7.31	871	NM	1.66	188.8	375	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
13:32	32.74	500	1	17.9	7.39	866	NM	0.91	182.3	335	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
13:37	32.74	500	1.5	18	7.48	865	NM	0.53	171.9	200	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
13:42	32.74	500	2	18	7.16	869	NM	0.34	175.3	131	NM	CLOUDY & NO ODOR
13:47	32.74	500	2.5	17.7	7.12	869	NM	0.29	173.3	92.9	NM	CLOUDY & NO ODOR
13:52	32.74	500	3	17.7	7.14	869	NM	0.2	170	60	NM	CLOUDY & NO ODOR
13:57	32.74	500	3.5	17.6	7.17	869	NM	0.16	169.4	41.1	NM	CLEAR & NO ODOR
14:02	32.74	500	4	17.6	7.17	872	NM	0.13	166.7	39.9	NM	CLEAR & NO ODOR
14:07	32.74	500	4.5	17.7	7.17	871	NM	0.13	166.3	42.6	NM	CLEAR & NO ODOR

Sample ID(s): APW-05-WG-20230627,DUP-01-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Marshall Arendell 	06/30/2023 15:51



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06D
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 151.62 (ft)	Reference Elevation 363.69 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 30.77 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 156.62 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 344.4 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 140 - 150 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 20.54 (gal) / 3.5 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
09:50	30.82	350	0	17.3	7.47	699	NM	1.97	223.7	168	NM	TURBID GREY & ORGANIC LIKE ODOR
09:55	30.82	300	0.5	18.9	7.5	747	NM	0.67	213.9	1000	NM	OPAQUE DARK GREY & ORGANIC LIKE ODOR
10:00	30.82	350	0.75	18.4	7.76	752	NM	0.27	206.7	551	NM	OPAQUE DARK GREY & ORGANIC LIKE ODOR
10:05	30.82	350	1.25	18.1	7.87	762	NM	0.14	192.2	438	NM	OPAQUE DARK GREY & ORGANIC LIKE ODOR
10:10	30.82	350	1.75	18	8.03	762	NM	0.11	178.8	602	NM	OPAQUE DARK GREY & ORGANIC LIKE ODOR
10:15	30.82	350	2.25	17.8	8.01	765	NM	0.09	175	225	NM	TURBID GREY & ORGANIC LIKE ODOR
10:20	30.82	350	2.75	18.1	7.73	764	NM	0.08	171.9	177	NM	TURBID GREY & ORGANIC LIKE ODOR
10:25	30.82	350	3.25	18.9	7.73	768	NM	0.08	170	165	NM	TURBID GREY & ORGANIC LIKE ODOR
10:30	30.82	350	3.5	18.8	7.71	769	NM	0.08	170.6	181	NM	TURBID GREY & ORGANIC LIKE ODOR

Sample ID(s): APW-06D-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/30/2023 17:35
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-06S
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 58.83 (ft)	Reference Elevation 363.51 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 31.23 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 63.83 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 279.2 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 5.32 (gal) / 3 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
08:12	31.25	300	0	17.5	6.63	585	NM	6.12	380.2	139	NM	TURBID & NO ODOR
08:17	31.26	300	0.5	16.9	6.61	610	NM	1.45	345	96.8	NM	CLOUDY & NO ODOR
08:22	31.26	300	0.75	17.3	6.64	612	NM	0.84	322	61.8	NM	CLOUDY & NO ODOR
08:27	31.26	275	1	17.5	6.7	610	NM	0.63	306	29.6	NM	CLEAR & NO ODOR
08:32	31.26	250	1.25	17.5	6.73	621	NM	0.47	285.6	25	NM	CLEAR & NO ODOR
08:37	31.26	275	1.5	17.6	6.72	623	NM	0.34	268	20.1	NM	CLEAR & SLIGHT ROTTEN-EGG LIKE ODOR
08:42	31.26	275	1.75	17.7	6.97	622	NM	0.26	255.3	16	NM	CLEAR & SLIGHT ROTTEN-EGG LIKE ODOR
08:47	31.26	275	2	17.9	7.29	619	NM	0.21	242.8	14.1	NM	CLEAR & NO ODOR
08:52	31.26	275	2.25	18	7.49	620	NM	0.17	228	14.3	NM	CLEAR & NO ODOR
08:57	31.26	275	2.5	17.9	7.54	621	NM	0.15	213.2	9.19	NM	CLEAR & NO ODOR
09:02	31.26	275	2.75	18.1	7.61	619	NM	0.13	207.8	9.02	NM	CLEAR & NO ODOR
09:07	31.26	275	3	18.1	7.6	619	NM	0.14	206.3	9.06	NM	CLEAR & NO ODOR

Sample ID(s): APW-06S-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Marshall Arendell 	06/30/2023 16:44



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-07
Well Permit No:

Date: 2023/06/26
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 58.19 (ft)	Reference Elevation 360.61 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 27.73 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 63.19 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 371.4 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 5.79 (gal) / 3.25 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:45	27.82	500	0	19.2	7.77	819	NM	2.72	129	45.9	NM	CLEAR & NO ODOR
14:50	27.82	350	0.75	21.1	7.58	875	NM	0.41	113.5	37.9	NM	CLEAR & NO ODOR
14:55	27.82	350	1.25	20.6	7.88	886	NM	0.21	110	25.9	NM	CLEAR & NO ODOR
15:00	27.82	350	1.75	19.9	7.71	912	NM	0.16	109.8	18	NM	CLEAR & NO ODOR
15:05	27.82	350	2.25	20	7.62	917	NM	0.13	109	15.4	NM	CLEAR & NO ODOR
15:10	27.82	350	2.75	19.6	7.61	921	NM	0.11	107.1	15.2	NM	CLEAR & NO ODOR
15:15	27.82	350	3.25	20.1	7.59	923	NM	0.11	110.3	14.8	NM	CLEAR & NO ODOR

Sample ID(s): APW-07-WG-20230626	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/30/2023 18:16
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-08
Well Permit No:

Date: 2023/06/26
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 56.85 (ft)	Reference Elevation 362.71 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 28.52 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 61.85 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 336.2 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 5.44 (gal) / 5.25 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
13:13	28.54	150	0	27.1	7.59	565	NM	4.9	195.3	1000	NM	OPAQUE GREY & NO ODOR
13:18	28.54	150	0.5	20.7	7.63	567	NM	1.09	200.5	1000	NM	OPAQUE GREY & NO ODOR
13:23	28.54	200	0.75	25.8	7.35	587	NM	0.29	205.6	1000	NM	OPAQUE GREY & NO ODOR
13:28	28.54	420	1.25	22.1	7.45	571	NM	0.13	201.4	1000	NM	OPAQUE GREY & NO ODOR
13:33	28.54	350	1.5	22.3	7.43	579	NM	0.13	209.7	1000	NM	OPAQUE GREY & NO ODOR
13:38	28.54	375	1.75	23.7	7.29	576	NM	0.12	212.3	891	NM	OPAQUE GREY & NO ODOR
13:43	28.54	375	2.25	23.6	7.36	577	NM	0.12	205.6	580	NM	OPAQUE GREY & NO ODOR
13:48	28.54	350	2.75	24	7.45	573	NM	0.13	198.7	366	NM	OPAQUE GREY & NO ODOR
13:53	28.54	400	3.25	571	7.6	23.4	NM	0.19	197.9	249	NM	TURBID & NO ODOR
13:58	28.54	400	3.75	24.2	7.71	574	NM	0.19	180.9	190	NM	TURBID & NO ODOR
14:03	28.54	400	4.25	24	7.7	565	NM	0.2	181.2	159	NM	TURBID & NO ODOR
14:08	28.54	400	4.75	24.3	7.72	568	NM	0.2	182.6	151	NM	TURBID & NO ODOR
14:13	28.54	400	5.25	24.2	7.72	568	NM	0.2	183.2	152	NM	TURBID & NO ODOR

Sample ID(s): APW-08-WG-20230626	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
		Marshall Arendell 	06/30/2023 18:38
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-09
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 58.14 (ft)	Reference Elevation 366.84 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 32.66 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 63.14 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 425 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 4.97 (gal) / 2.75 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
14:51	32.67	450	0	19.1	6.9	298	NM	4.79	332.1	114	NM	CLOUDY & NO ODOR
14:56	32.67	450	0.75	18.2	6.9	404.1	NM	1.04	297	69.4	NM	CLOUDY & NO ODOR
15:01	32.67	450	1.25	17.9	6.92	506.6	NM	0.76	285.1	33.4	NM	CLEAR & NO ODOR
15:06	32.67	400	1.75	17.9	6.89	509.6	NM	0.67	277.8	26.4	NM	CLEAR & NO ODOR
15:11	32.67	400	2.25	17.6	6.88	513.1	NM	0.67	277.7	25.9	NM	CLEAR & NO ODOR
15:16	32.67	400	2.75	17.6	6.86	510.8	NM	0.66	277.8	24.7	NM	CLEAR & NO ODOR

Sample ID(s): APW-09-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
Analysis:		Marshall Arendell 	06/30/2023 18:50



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10D
Well Permit No:

Date: 2023/06/26
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 93.07 (ft)	Reference Elevation 359.41 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 24.6 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 98.07 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 347.9 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 86 - 96 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 11.99 (gal) / 4.5 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
17:45	24.65	175	0	19	7.68	553.7	NM	2.67	122.8	117	NM	TURBID & NO ODOR
17:50	24.65	350	0.25	19.6	7.54	631	NM	1.49	131.5	699	NM	OPAQUE BROWN & NO ODOR
17:55	24.65	200	0.5	18.1	7.49	639	NM	0.69	138.4	1000	NM	OPAQUE BROWN & NO ODOR
18:00	24.65	150	0.75	18.8	7.4	643	NM	0.69	141.8	1000	NM	OPAQUE BROWN & NO ODOR
18:05	24.65	275	1	17.7	7.44	643	NM	0.49	145.3	1000	NM	OPAQUE BROWN & NO ODOR
18:10	24.65	375	1.25	17.1	7.47	641	NM	0.34	146.6	816	NM	OPAQUE BROWN & NO ODOR
18:15	24.65	450	2	17.1	7.45	640	NM	0.24	149	492	NM	OPAQUE BROWN & NO ODOR
18:20	24.65	400	2.5	17.1	7.5	637	NM	0.2	148.6	334	NM	OPAQUE BROWN & NO ODOR
18:25	24.65	450	3	17.1	7.49	636	NM	0.16	147.8	250	NM	TURBID & NO ODOR
18:30	24.65	450	3.5	16.9	7.43	635	NM	0.13	151.1	188	NM	TURBID & NO ODOR
18:35	24.65	450	4	16.9	7.43	634	NM	0.13	151.5	180	NM	TURBID & NO ODOR
18:40	24.65	450	4.5	16.9	7.41	634	NM	0.13	152.5	176	NM	TURBID & NO ODOR

Sample ID(s): APW-10D-WG-20230626	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/30/2023 19:19
Analysis:			





Low Flow Groundwater Sampling Field Data Form

Well ID: APW-10S
Well Permit No:

Date: 2023/06/26
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 57.75 (ft)	Reference Elevation 359.47 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 26.75 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 62.75 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 305 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 50 - 60 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 5.88 (gal) / 3 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
16:10	26.87	250	0	24.7	7.01	1171	NM	5.01	241	1000	NM	OPAQUE DARK GREY & NO ODOR
16:15	26.88	300	0.25	18.4	6.94	1176	NM	2.55	216.4	1000	NM	OPAQUE DARK GREY & NO ODOR
16:20	26.91	250	0.5	21.7	7.47	1164	NM	1.68	186	1000	NM	OPAQUE DARK GREY & NO ODOR
16:25	26.98	350	1	20.7	7.51	1170	NM	1.12	152.1	422	NM	OPAQUE DARK GREY & ROTTEN-EGG LIKE ODOR
16:30	26.98	300	1.25	20.1	7.56	1173	NM	0.95	131.3	174	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
16:35	26.98	400	1.75	20	7.56	1173	NM	0.76	118	91.1	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
16:40	26.98	300	2.25	20.3	7.57	1172	NM	0.87	106.2	316	NM	TURBID GREY & ROTTEN-EGG LIKE ODOR
16:45	26.98	300	2.5	20.5	7.66	1174	NM	0.5	93.3	56.7	NM	CLOUDY & ROTTEN-EGG LIKE ODOR
16:50	26.98	300	2.75	20.9	7.65	1173	NM	0.49	86.5	60.2	NM	CLOUDY & ROTTEN-EGG LIKE ODOR
16:55	26.98	300	3	20.8	7.64	1173	NM	0.48	87.3	57.2	NM	CLOUDY & ROTTEN-EGG LIKE ODOR

Sample ID(s): APW-10S-WG-20230626	Additional Comments	SAMPLER NAME AND SIGNATURE	Date Time
		Marshall Arendell 	06/30/2023 19:36
Analysis:			



Low Flow Groundwater Sampling Field Data Form

Well ID: APW-01R
Well Permit No:

Date: 2023/06/27
sunny

Site ID GTEC-GRAND-TOWER	Purge Method / Pump Intake Depth Low_Flow / 51.22 (ft)	Reference Elevation 366.82 (ft)
Site Address 1820 Power Plant Road, Grand Tower, US-IL	Purge Equipment NA	Depth to Water / Free Product 33.22 (ft) / None
Project Number 0599247	Sample Equipment NA	Total Well Depth 56.22 (ft)
Project Name 20230626-GWMonitor	Average Purge Rate 375 (mL/min)	Well Diameter / Well Screen Interval 2 (in) / 48.3 - 58.3 (ft)
Sampler Marshall Arendell	Volume of Water in Well / Total Volume Purged 3.75 (gal) / 3.75 (gal)	Well Construction PVC

Well Head Vapor Measurements

PID: NA; FID: NA; CO: NA; CO2: NA; O2: NA; CH4: NA; H2S: NA

Time	DTW (ft)	Flow Rate (mL/min)	Purge Volume (gal)	Temperature (C) ±3%	pH ±0.1pH units	Specific Conductivity (uS/cm) ±3%	Total Conductivity (NA)	Dissolved Oxygen (mg/L) ±10%	ORP (mV) ±10 mV	Turbidity (NTU) ±10%	Total Dissolved Solids(NA)	Comments
15:39	33.22	350	0	20	6.27	291.2	NM	5.76	389.4	223	NM	TURBID BROWN & NO ODOR
15:44	33.22	350	0.25	20.2	5.93	329.3	NM	2.47	334.1	732	NM	OPAQUE BROWN & NO ODOR
15:49	33.22	325	0.5	19.9	5.88	310.9	NM	2.08	344.7	562	NM	OPAQUE BROWN & NO ODOR
15:54	33.22	350	0.75	19.6	5.85	359.5	NM	1.9	301.4	446	NM	OPAQUE BROWN & NO ODOR
15:59	33.22	350	1	19.5	5.87	380.2	NM	1.66	294.1	255	NM	TURBID BROWN & NO ODOR
16:04	33.22	300	1.25	19	5.86	390.2	NM	1.53	290.9	195	NM	TURBID BROWN & NO ODOR
16:09	33.22	300	1.75	19.9	5.89	403.2	NM	1.41	288	143	NM	TURBID BROWN & NO ODOR
16:14	33.22	400	2.25	20.4	5.93	410.7	NM	1.41	284.5	99.1	NM	CLOUDY & NO ODOR
16:19	33.22	400	2.75	18.8	5.9	418.6	NM	1.34	281.3	91.2	NM	CLOUDY & NO ODOR
16:24	33.22	400	3.25	18.7	5.89	421.3	NM	1.33	280.2	89.6	NM	CLOUDY & NO ODOR
16:29	33.22	400	3.75	18.9	5.9	424.7	NM	1.33	279.5	83.2	NM	CLOUDY & NO ODOR

Sample ID(s): APW-01R-WG-20230627	Additional Comments	SAMPLER NAME AND SIGNATURE Marshall Arendell	Date Time 06/29/2023 21:32
Analysis:			

**APPENDIX D SECOND QUARTER 2023 LABORATORY ANALYTICAL
REPORT**

August 10, 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: 0599247

WorkOrder: 23062071

Dear Matt Halley:

TEKLAB, INC received 15 samples on 6/28/2023 10:10:00 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
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
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Sample Summary	23
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Quality Control Results	31
Receiving Check List	47
Chain of Custody	Appended

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-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)

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Qualifiers

- # - Unknown hydrocarbon
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)



Case Narrative

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Cooler Receipt Temp: 4.0 °C

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

This report was revised on August 10, 2023 per Alison Treglia's request. The reason for the revision is to update the Ra228 values for -005 and -009 from ND to negative values. Please replace report dated August 8, 2023 with this report. EAH 8/10/23

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



Accreditations

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-001
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: EB-01-WQ-20230626
 Collection Date: 06/26/2023 9:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		< 20	mg/L	1	06/28/2023 15:02	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		< 10	mg/L	1	07/03/2023 21:04	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	5.33		1	06/29/2023 11:33	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		< 0.10	mg/L	1	07/03/2023 12:15	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		< 4	mg/L	1	07/03/2023 21:02	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Arsenic	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Barium	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Boron	NELAP	0.0250		< 0.0250	mg/L	5	07/04/2023 0:04	207943
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Calcium	NELAP	0.125		< 0.125	mg/L	5	07/04/2023 0:04	207943
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 15:58	207943
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 15:58	207943
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Lithium	*	0.0030		< 0.0030	mg/L	5	07/06/2023 15:58	207943
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/04/2023 0:04	207943
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/04/2023 0:04	207943
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/04/2023 0:04	207943
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 3:47	208035
Arsenic	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Barium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Boron	NELAP	0.0250		< 0.0250	mg/L	5	07/07/2023 3:12	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Calcium	NELAP	0.125	B	< 0.125	mg/L	5	07/07/2023 3:12	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 3:12	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 3:47	208035
Lithium	*	0.0030		< 0.0030	mg/L	5	07/07/2023 3:12	208035
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 3:12	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:12	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/06/2023 3:47	208035
<i>Contamination present in the MBLK for Ca. Sample results below the reporting limit are reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:10	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662
Radium-228	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-002
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-03-WG-20230626
 Collection Date: 06/26/2023 12:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		614	mg/L	1	06/28/2023 15:03	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		292	mg/L	10	07/03/2023 21:24	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.77		1	06/29/2023 11:37	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.23	mg/L	1	07/03/2023 12:17	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		17	mg/L	1	07/03/2023 21:13	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:03	207896
Arsenic	NELAP	0.0010		0.0016	mg/L	5	06/29/2023 17:43	207896
Barium	NELAP	0.0010		0.130	mg/L	5	07/03/2023 16:03	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:03	207896
Boron	NELAP	0.0250		4.64	mg/L	5	07/03/2023 16:03	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:03	207896
Calcium	NELAP	0.125		125	mg/L	5	07/03/2023 16:03	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:26	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 5:26	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:03	207896
Lithium	*	0.0030		0.0262	mg/L	5	06/29/2023 17:43	207896
Molybdenum	NELAP	0.0015		0.0656	mg/L	5	07/03/2023 16:03	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 17:43	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:03	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 3:54	208035
Arsenic	NELAP	0.0010		0.0040	mg/L	5	07/07/2023 3:18	208035
Barium	NELAP	0.0010		0.155	mg/L	5	07/07/2023 3:18	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:18	208035
Boron	NELAP	0.0250		4.67	mg/L	5	07/07/2023 3:18	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:18	208035
Calcium	NELAP	0.125	B	139	mg/L	5	07/07/2023 3:18	208035
Chromium	NELAP	0.0015		0.0241	mg/L	5	07/07/2023 3:18	208035
Cobalt	NELAP	0.0010		0.0014	mg/L	5	07/07/2023 3:18	208035
Lead	NELAP	0.0010		0.0044	mg/L	5	07/06/2023 3:54	208035
Lithium	*	0.0030		0.0352	mg/L	5	07/07/2023 3:18	208035
Molybdenum	NELAP	0.0015		0.0553	mg/L	5	07/07/2023 3:18	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 3:18	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/06/2023 3:54	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:17	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662
Radium-228	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-003
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-08-WG-20230626
 Collection Date: 06/26/2023 14:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		420	mg/L	2.5	06/28/2023 15:03	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		31	mg/L	1	07/03/2023 21:47	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.18		1	06/29/2023 11:40	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.26	mg/L	1	07/03/2023 12:20	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		10	mg/L	1	07/03/2023 21:48	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:09	207896
Arsenic	NELAP	0.0010		0.0010	mg/L	5	06/29/2023 17:50	207896
Barium	NELAP	0.0010		0.191	mg/L	5	07/03/2023 16:09	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:09	207896
Boron	NELAP	0.0250		0.124	mg/L	5	07/03/2023 16:09	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:09	207896
Calcium	NELAP	0.125		92.6	mg/L	5	07/03/2023 16:09	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:32	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 5:32	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:09	207896
Lithium	*	0.0030		0.0125	mg/L	5	06/29/2023 17:50	207896
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/03/2023 16:09	207896
Selenium	NELAP	0.0010		0.0113	mg/L	5	06/29/2023 17:50	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:09	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 4:00	208035
Arsenic	NELAP	0.0010		0.0020	mg/L	5	07/07/2023 4:09	208035
Barium	NELAP	0.0010		0.225	mg/L	5	07/07/2023 4:09	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:09	208035
Boron	NELAP	0.0250		0.103	mg/L	5	07/07/2023 4:09	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:09	208035
Calcium	NELAP	0.125	B	99.4	mg/L	5	07/07/2023 4:09	208035
Chromium	NELAP	0.0015		0.0082	mg/L	5	07/07/2023 4:09	208035
Cobalt	NELAP	0.0010		0.0019	mg/L	5	07/07/2023 4:09	208035
Lead	NELAP	0.0010		0.0028	mg/L	5	07/07/2023 4:09	208035
Lithium	*	0.0030		0.0157	mg/L	5	07/07/2023 4:09	208035
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 4:09	208035
Selenium	NELAP	0.0010		0.0129	mg/L	5	07/07/2023 4:09	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/06/2023 4:00	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:19	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662
Radium-228	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-004
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-07-WG-20230626
 Collection Date: 06/26/2023 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		665	mg/L	2.5	06/28/2023 15:03	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		54	mg/L	2	07/06/2023 13:28	R331244
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	6.79		1	06/29/2023 11:42	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.17	mg/L	1	07/03/2023 12:21	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		10	mg/L	1	07/03/2023 21:56	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:33	207896
Arsenic	NELAP	0.0010		0.0012	mg/L	5	06/29/2023 18:15	207896
Barium	NELAP	0.0010		0.303	mg/L	5	07/03/2023 16:33	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:33	207896
Boron	NELAP	0.0250		0.208	mg/L	5	07/03/2023 16:33	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:33	207896
Calcium	NELAP	0.125	S	180	mg/L	5	07/03/2023 16:33	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:56	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 5:56	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:33	207896
Lithium	*	0.0030		0.0136	mg/L	5	06/29/2023 18:15	207896
Molybdenum	NELAP	0.0015		0.0027	mg/L	5	07/03/2023 16:33	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 18:15	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:33	207896
<i>Matrix spike control limits are not applicable due to high sample/spike ratio.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Arsenic	NELAP	0.0010		0.0014	mg/L	5	07/07/2023 4:53	208035
Barium	NELAP	0.0010		0.312	mg/L	5	07/07/2023 4:53	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Boron	NELAP	0.0250		0.237	mg/L	5	07/07/2023 4:53	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Calcium	NELAP	0.125	BS	183	mg/L	5	07/07/2023 4:53	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 4:53	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Lithium	*	0.0030		0.0153	mg/L	5	07/07/2023 4:53	208035
Molybdenum	NELAP	0.0015		0.0028	mg/L	5	07/07/2023 4:53	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:53	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:53	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
<i>Matrix spike control limits are not applicable due to high sample/spike ratio.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:21	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM Work Order: 23062071
Client Project: 0599247 Report Date: 10-Aug-23
Lab ID: 23062071-004 Client Sample ID: APW-07-WG-20230626
Matrix: GROUNDWATER Collection Date: 06/26/2023 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-228	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-005
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-10S-WG-20230626
 Collection Date: 06/26/2023 17:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		725	mg/L	2.5	06/28/2023 15:05	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		< 10	mg/L	1	07/03/2023 22:03	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.01		1	06/29/2023 11:45	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.15	mg/L	1	07/03/2023 12:23	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		14	mg/L	1	07/03/2023 22:04	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:15	207896
Arsenic	NELAP	0.0010		0.166	mg/L	5	06/29/2023 17:56	207896
Barium	NELAP	0.0010		0.506	mg/L	5	07/03/2023 16:15	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:15	207896
Boron	NELAP	0.0250		0.578	mg/L	5	07/03/2023 16:15	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:15	207896
Calcium	NELAP	0.125		142	mg/L	5	07/03/2023 16:15	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:38	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 5:38	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:15	207896
Lithium	*	0.0030		0.0278	mg/L	5	06/29/2023 17:56	207896
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/03/2023 16:15	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 17:56	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:15	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 4:06	208035
Arsenic	NELAP	0.0010		0.194	mg/L	5	07/07/2023 4:15	208035
Barium	NELAP	0.0010		0.589	mg/L	5	07/07/2023 4:15	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:15	208035
Boron	NELAP	0.0250		0.582	mg/L	5	07/07/2023 4:15	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:15	208035
Calcium	NELAP	0.125	B	153	mg/L	5	07/07/2023 4:15	208035
Chromium	NELAP	0.0015		0.0025	mg/L	5	07/07/2023 4:15	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:15	208035
Lead	NELAP	0.0010		0.0016	mg/L	5	07/06/2023 4:06	208035
Lithium	*	0.0030		0.0291	mg/L	5	07/07/2023 4:15	208035
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 4:15	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:15	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/06/2023 4:06	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:23	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662
Radium-228	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-006
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-10D-WG-20230626
 Collection Date: 06/26/2023 18:45

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		485	mg/L	2.5	06/28/2023 15:21	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		44	mg/L	1	07/03/2023 22:11	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	6.98		1	06/29/2023 11:49	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.11	mg/L	1	07/03/2023 12:43	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		14	mg/L	1	07/03/2023 22:12	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:21	207896
Arsenic	NELAP	0.0010		0.0011	mg/L	5	06/29/2023 18:02	207896
Barium	NELAP	0.0010		0.348	mg/L	5	07/03/2023 16:21	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:21	207896
Boron	NELAP	0.0250		0.0704	mg/L	5	07/03/2023 16:21	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:21	207896
Calcium	NELAP	0.125		114	mg/L	5	07/03/2023 16:21	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:44	207896
Cobalt	NELAP	0.0010		0.0026	mg/L	5	07/06/2023 5:44	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:21	207896
Lithium	*	0.0030		0.0148	mg/L	5	06/29/2023 18:02	207896
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/03/2023 16:21	207896
Selenium	NELAP	0.0010		0.0013	mg/L	5	06/29/2023 18:02	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:21	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:22	208035
Arsenic	NELAP	0.0010		0.0019	mg/L	5	07/07/2023 4:22	208035
Barium	NELAP	0.0010		0.485	mg/L	5	07/07/2023 4:22	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:22	208035
Boron	NELAP	0.0250		0.0674	mg/L	5	07/07/2023 4:22	208035
Cadmium	NELAP	0.0010		0.0011	mg/L	5	07/07/2023 4:22	208035
Calcium	NELAP	0.125	B	611	mg/L	5	07/07/2023 4:22	208035
Chromium	NELAP	0.0015		0.0015	mg/L	5	07/07/2023 4:22	208035
Cobalt	NELAP	0.0010		0.0070	mg/L	5	07/07/2023 4:22	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:22	208035
Lithium	*	0.0030		0.0158	mg/L	5	07/07/2023 4:22	208035
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 4:22	208035
Selenium	NELAP	0.0010		0.0016	mg/L	5	07/07/2023 4:22	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:22	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/05/2023 9:30	207990
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662
Radium-228	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-007
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-06S-WG-20230627
 Collection Date: 06/27/2023 9:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		615	mg/L	2.5	06/28/2023 15:21	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		208	mg/L	10	07/03/2023 22:25	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.05		1	06/29/2023 11:51	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.26	mg/L	1	07/03/2023 12:45	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		23	mg/L	1	07/03/2023 22:20	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:27	207896
Arsenic	NELAP	0.0010		0.0010	mg/L	5	06/29/2023 18:08	207896
Barium	NELAP	0.0010		0.210	mg/L	5	07/03/2023 16:27	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:27	207896
Boron	NELAP	0.0250		5.83	mg/L	5	07/03/2023 16:27	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:27	207896
Calcium	NELAP	0.125		100	mg/L	5	07/03/2023 16:27	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 5:50	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 5:50	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 16:27	207896
Lithium	*	0.0030		0.0411	mg/L	5	06/29/2023 18:08	207896
Molybdenum	NELAP	0.0015		0.232	mg/L	5	07/03/2023 16:27	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 18:08	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 16:27	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Arsenic	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Barium	NELAP	0.0010		0.224	mg/L	5	07/07/2023 4:28	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Boron	NELAP	0.0250		5.84	mg/L	5	07/07/2023 4:28	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Calcium	NELAP	0.125	B	109	mg/L	5	07/07/2023 4:28	208035
Chromium	NELAP	0.0015		0.0019	mg/L	5	07/07/2023 4:28	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Lithium	*	0.0030		0.0412	mg/L	5	07/07/2023 4:28	208035
Molybdenum	NELAP	0.0015		0.235	mg/L	5	07/07/2023 4:28	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:28	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:28	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:37	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662
Radium-228	*	0		See Attached	pci/L	1	07/17/2023 15:33	R334662



Laboratory Results

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Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-008
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-06D-WG-20230627
 Collection Date: 06/27/2023 10:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		735	mg/L	2.5	06/28/2023 15:21	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		270	mg/L	10	07/03/2023 22:49	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.39		1	06/29/2023 11:54	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.20	mg/L	1	07/03/2023 12:47	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		15	mg/L	1	07/03/2023 22:44	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:16	207896
Arsenic	NELAP	0.0010		0.0102	mg/L	5	06/29/2023 18:59	207896
Barium	NELAP	0.0010		0.130	mg/L	5	07/03/2023 17:16	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:16	207896
Boron	NELAP	0.0250		5.01	mg/L	5	07/03/2023 17:16	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:16	207896
Calcium	NELAP	0.125		118	mg/L	5	07/03/2023 17:16	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 6:39	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 6:39	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:16	207896
Lithium	*	0.0030		0.0160	mg/L	5	06/29/2023 18:59	207896
Molybdenum	NELAP	0.0015		0.0643	mg/L	5	07/03/2023 17:16	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 18:59	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:16	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:34	208035
Arsenic	NELAP	0.0010		0.0115	mg/L	5	07/07/2023 4:34	208035
Barium	NELAP	0.0010		0.145	mg/L	5	07/07/2023 4:34	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:34	208035
Boron	NELAP	0.0250		4.99	mg/L	5	07/07/2023 4:34	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:34	208035
Calcium	NELAP	0.125	B	128	mg/L	5	07/07/2023 4:34	208035
Chromium	NELAP	0.0015		0.0057	mg/L	5	07/07/2023 4:34	208035
Cobalt	NELAP	0.0010		0.0054	mg/L	5	07/07/2023 4:34	208035
Lead	NELAP	0.0010		0.0016	mg/L	5	07/07/2023 4:34	208035
Lithium	*	0.0030		0.0184	mg/L	5	07/07/2023 4:34	208035
Molybdenum	NELAP	0.0015		0.0602	mg/L	5	07/07/2023 4:34	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:34	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:34	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:39	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662
Radium-228	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662



Laboratory Results

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Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-009
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-02-WG-20230627
 Collection Date: 06/27/2023 12:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		920	mg/L	2.5	06/28/2023 15:21	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		500	mg/L	10	07/03/2023 22:57	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	6.90		1	06/29/2023 12:00	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.22	mg/L	1	07/03/2023 12:49	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		7	mg/L	1	07/03/2023 22:52	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:22	207896
Arsenic	NELAP	0.0010		0.0110	mg/L	5	06/29/2023 19:05	207896
Barium	NELAP	0.0010		0.142	mg/L	5	07/03/2023 17:22	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:22	207896
Boron	NELAP	0.0250		8.97	mg/L	5	07/03/2023 17:22	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:22	207896
Calcium	NELAP	0.125		147	mg/L	5	07/03/2023 17:22	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 6:45	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 6:45	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:22	207896
Lithium	*	0.0030		0.0442	mg/L	5	06/29/2023 19:05	207896
Molybdenum	NELAP	0.0015		0.227	mg/L	5	07/03/2023 17:22	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 19:05	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:22	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:41	208035
Arsenic	NELAP	0.0010		0.0148	mg/L	5	07/07/2023 4:41	208035
Barium	NELAP	0.0010		0.149	mg/L	5	07/07/2023 4:41	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:41	208035
Boron	NELAP	0.0250		9.14	mg/L	5	07/07/2023 4:41	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:41	208035
Calcium	NELAP	0.125	B	161	mg/L	5	07/07/2023 4:41	208035
Chromium	NELAP	0.0015		0.0024	mg/L	5	07/07/2023 4:41	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:41	208035
Lead	NELAP	0.0010		0.0025	mg/L	5	07/07/2023 4:41	208035
Lithium	*	0.0030		0.0459	mg/L	5	07/07/2023 4:41	208035
Molybdenum	NELAP	0.0015		0.229	mg/L	5	07/07/2023 4:41	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:41	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:41	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:46	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662
Radium-228	*	0		See Attached	pci/L	1	07/18/2023 9:09	R334662



Laboratory Results

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Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-010
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-05R-WG-20230627
 Collection Date: 06/27/2023 14:10

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		740	mg/L	2.5	06/28/2023 15:22	R330972
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		335	mg/L	10	07/03/2023 23:06	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.27		1	06/29/2023 12:03	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.30	mg/L	1	07/03/2023 12:55	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		17	mg/L	1	07/03/2023 23:00	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:28	207896
Arsenic	NELAP	0.0010		0.0024	mg/L	5	06/29/2023 19:11	207896
Barium	NELAP	0.0010		0.168	mg/L	5	07/03/2023 17:28	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:28	207896
Boron	NELAP	0.0250		8.64	mg/L	5	07/03/2023 17:28	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:28	207896
Calcium	NELAP	0.125		120	mg/L	5	07/03/2023 17:28	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 6:51	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 6:51	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:28	207896
Lithium	*	0.0030		0.0384	mg/L	5	06/29/2023 19:11	207896
Molybdenum	NELAP	0.0015		0.213	mg/L	5	07/03/2023 17:28	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 19:11	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:28	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:47	208035
Arsenic	NELAP	0.0010		0.0030	mg/L	5	07/07/2023 4:47	208035
Barium	NELAP	0.0010		0.183	mg/L	5	07/07/2023 4:47	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:47	208035
Boron	NELAP	0.0250		8.76	mg/L	5	07/07/2023 4:47	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:47	208035
Calcium	NELAP	0.125	B	136	mg/L	5	07/07/2023 4:47	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 4:47	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:47	208035
Lead	NELAP	0.0010		0.0011	mg/L	5	07/07/2023 4:47	208035
Lithium	*	0.0030		0.0423	mg/L	5	07/07/2023 4:47	208035
Molybdenum	NELAP	0.0015		0.212	mg/L	5	07/07/2023 4:47	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 4:47	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 4:47	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:48	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Laboratory Results

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Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-011
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-09-WG-20230627
 Collection Date: 06/27/2023 15:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		386	mg/L	1	06/29/2023 11:35	R331052
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		47	mg/L	1	07/03/2023 23:07	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.32		1	06/29/2023 14:43	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.19	mg/L	1	07/03/2023 12:57	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		12	mg/L	1	07/03/2023 23:08	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:59	207896
Arsenic	NELAP	0.0010		0.0021	mg/L	5	06/29/2023 19:43	207896
Barium	NELAP	0.0010		0.116	mg/L	5	07/03/2023 17:59	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:59	207896
Boron	NELAP	0.0250		0.572	mg/L	5	07/06/2023 7:21	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:59	207896
Calcium	NELAP	0.125	S	82.8	mg/L	5	07/03/2023 17:59	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 7:21	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 7:21	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:59	207896
Lithium	*	0.0030		0.0163	mg/L	5	06/29/2023 19:43	207896
Molybdenum	NELAP	0.0015		0.0211	mg/L	5	07/03/2023 17:59	207896
Selenium	NELAP	0.0010		0.0186	mg/L	5	06/29/2023 19:43	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:59	207896
<i>Matrix spike control limits are not applicable due to high sample/spike ratio.</i>								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		0.0010	mg/L	5	07/07/2023 5:57	208035
Arsenic	NELAP	0.0010		0.0021	mg/L	5	07/07/2023 5:57	208035
Barium	NELAP	0.0010		0.123	mg/L	5	07/07/2023 5:57	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 5:57	208035
Boron	NELAP	0.0250		0.473	mg/L	5	07/07/2023 5:57	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 5:57	208035
Calcium	NELAP	0.125	B	86.9	mg/L	5	07/07/2023 5:57	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 5:57	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 5:57	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 5:57	208035
Lithium	*	0.0030		0.0157	mg/L	5	07/07/2023 5:57	208035
Molybdenum	NELAP	0.0015		0.0189	mg/L	5	07/07/2023 5:57	208035
Selenium	NELAP	0.0010		0.0198	mg/L	5	07/07/2023 5:57	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 5:57	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:51	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Laboratory Results

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Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-012
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-01R-WG-20230627
 Collection Date: 06/27/2023 16:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		328	mg/L	1	06/29/2023 11:35	R331052
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		37	mg/L	2	07/06/2023 13:39	R331244
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	6.53		1	06/29/2023 14:46	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.14	mg/L	1	07/03/2023 12:51	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		< 4	mg/L	1	07/03/2023 23:18	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:34	207896
Arsenic	NELAP	0.0010		0.0011	mg/L	5	06/29/2023 19:18	207896
Barium	NELAP	0.0010		0.164	mg/L	5	07/03/2023 17:34	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:34	207896
Boron	NELAP	0.0250		0.249	mg/L	5	07/03/2023 17:34	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:34	207896
Calcium	NELAP	0.125		66.4	mg/L	5	07/03/2023 17:34	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 6:57	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 6:57	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:34	207896
Lithium	*	0.0030		0.0150	mg/L	5	06/29/2023 19:18	207896
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/03/2023 17:34	207896
Selenium	NELAP	0.0010		0.0032	mg/L	5	06/29/2023 19:18	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:34	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:03	208035
Arsenic	NELAP	0.0010		0.0013	mg/L	5	07/07/2023 6:03	208035
Barium	NELAP	0.0010		0.168	mg/L	5	07/07/2023 6:03	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:03	208035
Boron	NELAP	0.0250		0.176	mg/L	5	07/07/2023 6:03	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:03	208035
Calcium	NELAP	0.125	B	66.8	mg/L	5	07/07/2023 6:03	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 6:03	208035
Cobalt	NELAP	0.0010		0.0014	mg/L	5	07/07/2023 6:03	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:03	208035
Lithium	*	0.0030		0.0142	mg/L	5	07/07/2023 6:03	208035
Molybdenum	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 6:03	208035
Selenium	NELAP	0.0010		0.0033	mg/L	5	07/07/2023 6:03	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 6:03	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 8:53	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-013
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: APW-04-WG-20230627
 Collection Date: 06/27/2023 17:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		432	mg/L	1	06/29/2023 11:35	R331052
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		65	mg/L	2	07/06/2023 14:12	R331244
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.39		1	06/29/2023 14:50	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.16	mg/L	1	07/03/2023 12:53	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		12	mg/L	1	07/03/2023 23:56	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:41	207896
Arsenic	NELAP	0.0010		0.0014	mg/L	5	06/29/2023 19:24	207896
Barium	NELAP	0.0010		0.122	mg/L	5	07/03/2023 17:41	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:41	207896
Boron	NELAP	0.0250		0.908	mg/L	5	07/03/2023 17:41	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:41	207896
Calcium	NELAP	0.125		88.3	mg/L	5	07/03/2023 17:41	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 7:03	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 7:03	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:41	207896
Lithium	*	0.0030		0.0311	mg/L	5	06/29/2023 19:24	207896
Molybdenum	NELAP	0.0015		0.0503	mg/L	5	07/03/2023 17:41	207896
Selenium	NELAP	0.0010		0.0165	mg/L	5	06/29/2023 19:24	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:41	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:10	208035
Arsenic	NELAP	0.0010		0.0020	mg/L	5	07/07/2023 6:10	208035
Barium	NELAP	0.0010		0.138	mg/L	5	07/07/2023 6:10	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:10	208035
Boron	NELAP	0.0250		0.876	mg/L	5	07/07/2023 6:10	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:10	208035
Calcium	NELAP	0.125	B	97.5	mg/L	5	07/07/2023 6:10	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 6:10	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:10	208035
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:10	208035
Lithium	*	0.0030		0.0314	mg/L	5	07/07/2023 6:10	208035
Molybdenum	NELAP	0.0015		0.0449	mg/L	5	07/07/2023 6:10	208035
Selenium	NELAP	0.0010		0.0165	mg/L	5	07/07/2023 6:10	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 6:10	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 9:00	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-014
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: DUP-01-WG-20230627
 Collection Date: 06/27/2023 0:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		695	mg/L	2.5	06/29/2023 11:36	R331052
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		326	mg/L	10	07/04/2023 0:09	R331147
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.30		1	06/29/2023 14:53	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.32	mg/L	1	07/03/2023 13:07	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		18	mg/L	1	07/04/2023 0:04	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:47	207896
Arsenic	NELAP	0.0010		0.0025	mg/L	5	06/29/2023 19:30	207896
Barium	NELAP	0.0010		0.167	mg/L	5	07/03/2023 17:47	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:47	207896
Boron	NELAP	0.0250		8.37	mg/L	5	07/03/2023 17:47	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:47	207896
Calcium	NELAP	0.125		120	mg/L	5	07/03/2023 17:47	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 7:09	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 7:09	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:47	207896
Lithium	*	0.0030		0.0398	mg/L	5	06/29/2023 19:30	207896
Molybdenum	NELAP	0.0015		0.204	mg/L	5	07/03/2023 17:47	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 19:30	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:47	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:16	208035
Arsenic	NELAP	0.0010		0.0030	mg/L	5	07/07/2023 6:16	208035
Barium	NELAP	0.0010		0.181	mg/L	5	07/07/2023 6:16	208035
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:16	208035
Boron	NELAP	0.0250		8.68	mg/L	5	07/07/2023 6:16	208035
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:16	208035
Calcium	NELAP	0.125	B	133	mg/L	5	07/07/2023 6:16	208035
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/07/2023 6:16	208035
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:16	208035
Lead	NELAP	0.0010		0.0010	mg/L	5	07/07/2023 6:16	208035
Lithium	*	0.0030		0.0415	mg/L	5	07/07/2023 6:16	208035
Molybdenum	NELAP	0.0015		0.210	mg/L	5	07/07/2023 6:16	208035
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/07/2023 6:16	208035
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/07/2023 6:16	208035
<i>Sample result for Ca exceed 10 times the method blank contamination. Data is reportable per the TNI Standard.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 9:02	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Laboratory Results

<http://www.teklabinc.com/>

Client: ERM
 Client Project: 0599247
 Lab ID: 23062071-015
 Matrix: GROUNDWATER

Work Order: 23062071
 Report Date: 10-Aug-23
 Client Sample ID: DUP-02-WG-20230627
 Collection Date: 06/27/2023 0:02

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	50		870	mg/L	2.5	06/29/2023 11:36	R331052
SW-846 9036 (TOTAL)								
Sulfate	NELAP	200		465	mg/L	20	07/06/2023 14:20	R331244
SW-846 9040B, LABORATORY ANALYZED								
Lab pH	NELAP	1.00	H	7.03		1	06/29/2023 14:56	R330948
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.22	mg/L	1	07/03/2023 13:09	R331110
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		8	mg/L	1	07/04/2023 0:12	R331159
SW-846 3005A, 6020A, METALS BY ICPMS (DISSOLVED)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:53	207896
Arsenic	NELAP	0.0010		0.0107	mg/L	5	06/29/2023 19:36	207896
Barium	NELAP	0.0010		0.145	mg/L	5	07/03/2023 17:53	207896
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:53	207896
Boron	NELAP	0.0250		9.24	mg/L	5	07/03/2023 17:53	207896
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:53	207896
Calcium	NELAP	0.125		148	mg/L	5	07/03/2023 17:53	207896
Chromium	NELAP	0.0015		< 0.0015	mg/L	5	07/06/2023 7:15	207896
Cobalt	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 7:15	207896
Lead	NELAP	0.0010		< 0.0010	mg/L	5	07/03/2023 17:53	207896
Lithium	*	0.0030		0.0455	mg/L	5	06/29/2023 19:36	207896
Molybdenum	NELAP	0.0015		0.227	mg/L	5	07/03/2023 17:53	207896
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	06/29/2023 19:36	207896
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/03/2023 17:53	207896
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 22:13	208048
Arsenic	NELAP	0.0010		0.0146	mg/L	5	07/05/2023 22:45	208048
Barium	NELAP	0.0010		0.206	mg/L	5	07/06/2023 22:13	208048
Beryllium	NELAP	0.0010		< 0.0010	mg/L	5	07/06/2023 22:13	208048
Boron	NELAP	0.0250	S	9.51	mg/L	5	07/06/2023 22:13	208048
Cadmium	NELAP	0.0010		< 0.0010	mg/L	5	07/05/2023 22:45	208048
Calcium	NELAP	0.125	S	167	mg/L	5	07/06/2023 22:13	208048
Chromium	NELAP	0.0015		0.0079	mg/L	5	07/05/2023 22:45	208048
Cobalt	NELAP	0.0010		0.0016	mg/L	5	07/05/2023 22:45	208048
Lead	NELAP	0.0010		0.0029	mg/L	5	07/05/2023 22:45	208048
Lithium	*	0.0030		0.0480	mg/L	5	07/06/2023 22:13	208048
Molybdenum	NELAP	0.0015		0.252	mg/L	5	07/06/2023 22:13	208048
Selenium	NELAP	0.0010		< 0.0010	mg/L	5	07/05/2023 22:45	208048
Thallium	NELAP	0.0020		< 0.0020	mg/L	5	07/05/2023 22:45	208048
<i>Matrix spike control limits are not applicable due to high sample/spike ratio.</i>								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.00020		< 0.00020	mg/L	1	07/06/2023 9:04	208092
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662
Radium-228	*	0		See Attached	pci/L	1	07/20/2023 15:16	R334662



Sample Summary

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
23062071-001	EB-01-WQ-20230626	Groundwater	4	06/26/2023 9:00
23062071-002	APW-03-WG-20230626	Groundwater	4	06/26/2023 12:10
23062071-003	APW-08-WG-20230626	Groundwater	4	06/26/2023 14:15
23062071-004	APW-07-WG-20230626	Groundwater	4	06/26/2023 15:20
23062071-005	APW-10S-WG-20230626	Groundwater	4	06/26/2023 17:00
23062071-006	APW-10D-WG-20230626	Groundwater	4	06/26/2023 18:45
23062071-007	APW-06S-WG-20230627	Groundwater	4	06/27/2023 9:10
23062071-008	APW-06D-WG-20230627	Groundwater	4	06/27/2023 10:35
23062071-009	APW-02-WG-20230627	Groundwater	4	06/27/2023 12:15
23062071-010	APW-05R-WG-20230627	Groundwater	4	06/27/2023 14:10
23062071-011	APW-09-WG-20230627	Groundwater	4	06/27/2023 15:20
23062071-012	APW-01R-WG-20230627	Groundwater	4	06/27/2023 16:30
23062071-013	APW-04-WG-20230627	Groundwater	4	06/27/2023 17:35
23062071-014	DUP-01-WG-20230627	Groundwater	4	06/27/2023 0:01
23062071-015	DUP-02-WG-20230627	Groundwater	4	06/27/2023 0:02



Dates Report

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
23062071-001A	EB-01-WQ-20230626	06/26/2023 9:00	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:02
	SW-846 9036 (Total)				07/03/2023 21:04
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:33
	SW-846 9214 (Total)				07/03/2023 12:15
	SW-846 9251 (Total)				07/03/2023 21:02
23062071-001B	EB-01-WQ-20230626	06/26/2023 9:00	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/17/2023 15:33
23062071-001C	EB-01-WQ-20230626	06/26/2023 9:00	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/06/2023 3:47
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 3:12
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:10
23062071-001D	EB-01-WQ-20230626	06/26/2023 9:00	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/30/2023 10:09	07/04/2023 0:04
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/30/2023 10:09	07/06/2023 15:58
23062071-002A	APW-03-WG-20230626	06/26/2023 12:10	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:03
	SW-846 9036 (Total)				07/03/2023 21:24
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:37
	SW-846 9214 (Total)				07/03/2023 12:17
	SW-846 9251 (Total)				07/03/2023 21:13
23062071-002B	APW-03-WG-20230626	06/26/2023 12:10	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/18/2023 9:09
23062071-002C	APW-03-WG-20230626	06/26/2023 12:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/06/2023 3:54
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 3:18
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:17
23062071-002D	APW-03-WG-20230626	06/26/2023 12:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 17:43
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:03
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:26
23062071-003A	APW-08-WG-20230626	06/26/2023 14:15	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:03
	SW-846 9036 (Total)				07/03/2023 21:47
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:40
	SW-846 9214 (Total)				07/03/2023 12:20



Dates Report

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 9251 (Total)				07/03/2023 21:48
23062071-003B	APW-08-WG-20230626	06/26/2023 14:15	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/17/2023 15:33
23062071-003C	APW-08-WG-20230626	06/26/2023 14:15	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/06/2023 4:00
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:09
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:19
23062071-003D	APW-08-WG-20230626	06/26/2023 14:15	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 17:50
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:09
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:32
23062071-004A	APW-07-WG-20230626	06/26/2023 15:20	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:03
	SW-846 9036 (Total)				07/06/2023 13:28
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:42
	SW-846 9214 (Total)				07/03/2023 12:21
	SW-846 9251 (Total)				07/03/2023 21:56
23062071-004B	APW-07-WG-20230626	06/26/2023 15:20	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/17/2023 15:33
23062071-004C	APW-07-WG-20230626	06/26/2023 15:20	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:53
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:21
23062071-004D	APW-07-WG-20230626	06/26/2023 15:20	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 18:15
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:33
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:56
23062071-005A	APW-10S-WG-20230626	06/26/2023 17:00	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:05
	SW-846 9036 (Total)				07/03/2023 22:03
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:45
	SW-846 9214 (Total)				07/03/2023 12:23
	SW-846 9251 (Total)				07/03/2023 22:04
23062071-005B	APW-10S-WG-20230626	06/26/2023 17:00	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/18/2023 9:09
23062071-005C	APW-10S-WG-20230626	06/26/2023 17:00	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/06/2023 4:06



Dates Report

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:15
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:23
23062071-005D	APW-10S-WG-20230626	06/26/2023 17:00	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 17:56
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:15
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:38
23062071-006A	APW-10D-WG-20230626	06/26/2023 18:45	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:21
	SW-846 9036 (Total)				07/03/2023 22:11
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:49
	SW-846 9214 (Total)				07/03/2023 12:43
	SW-846 9251 (Total)				07/03/2023 22:12
23062071-006B	APW-10D-WG-20230626	06/26/2023 18:45	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/17/2023 15:33
23062071-006C	APW-10D-WG-20230626	06/26/2023 18:45	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:22
	SW-846 7470A (Total)			06/30/2023 14:49	07/05/2023 9:30
23062071-006D	APW-10D-WG-20230626	06/26/2023 18:45	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 18:02
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:21
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:44
23062071-007A	APW-06S-WG-20230627	06/27/2023 9:10	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:21
	SW-846 9036 (Total)				07/03/2023 22:25
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:51
	SW-846 9214 (Total)				07/03/2023 12:45
	SW-846 9251 (Total)				07/03/2023 22:20
23062071-007B	APW-06S-WG-20230627	06/27/2023 9:10	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/17/2023 15:33
23062071-007C	APW-06S-WG-20230627	06/27/2023 9:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:28
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:37
23062071-007D	APW-06S-WG-20230627	06/27/2023 9:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 18:08
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 16:27
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 5:50



Dates Report

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
23062071-008A	APW-06D-WG-20230627	06/27/2023 10:35	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:21
	SW-846 9036 (Total)				07/03/2023 22:49
	SW-846 9040B, Laboratory Analyzed				06/29/2023 11:54
	SW-846 9214 (Total)				07/03/2023 12:47
	SW-846 9251 (Total)				07/03/2023 22:44
23062071-008B	APW-06D-WG-20230627	06/27/2023 10:35	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/18/2023 9:09
23062071-008C	APW-06D-WG-20230627	06/27/2023 10:35	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:34
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:39
23062071-008D	APW-06D-WG-20230627	06/27/2023 10:35	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 18:59
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 17:16
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 6:39
23062071-009A	APW-02-WG-20230627	06/27/2023 12:15	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:21
	SW-846 9036 (Total)				07/03/2023 22:57
	SW-846 9040B, Laboratory Analyzed				06/29/2023 12:00
	SW-846 9214 (Total)				07/03/2023 12:49
	SW-846 9251 (Total)				07/03/2023 22:52
23062071-009B	APW-02-WG-20230627	06/27/2023 12:15	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/18/2023 9:09
23062071-009C	APW-02-WG-20230627	06/27/2023 12:15	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:41
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:46
23062071-009D	APW-02-WG-20230627	06/27/2023 12:15	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 19:05
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 17:22
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 6:45
23062071-010A	APW-05R-WG-20230627	06/27/2023 14:10	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/28/2023 15:22
	SW-846 9036 (Total)				07/03/2023 23:06
	SW-846 9040B, Laboratory Analyzed				06/29/2023 12:03
	SW-846 9214 (Total)				07/03/2023 12:55
	SW-846 9251 (Total)				07/03/2023 23:00



Dates Report

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
23062071-010B	APW-05R-WG-20230627	06/27/2023 14:10	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-010C	APW-05R-WG-20230627	06/27/2023 14:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 4:47
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:48
23062071-010D	APW-05R-WG-20230627	06/27/2023 14:10	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 19:11
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 17:28
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 6:51
23062071-011A	APW-09-WG-20230627	06/27/2023 15:20	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/29/2023 11:35
	SW-846 9036 (Total)				07/03/2023 23:07
	SW-846 9040B, Laboratory Analyzed				06/29/2023 14:43
	SW-846 9214 (Total)				07/03/2023 12:57
	SW-846 9251 (Total)				07/03/2023 23:08
23062071-011B	APW-09-WG-20230627	06/27/2023 15:20	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-011C	APW-09-WG-20230627	06/27/2023 15:20	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 5:57
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:51
23062071-011D	APW-09-WG-20230627	06/27/2023 15:20	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 19:43
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 17:59
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 7:21
23062071-012A	APW-01R-WG-20230627	06/27/2023 16:30	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/29/2023 11:35
	SW-846 9036 (Total)				07/06/2023 13:39
	SW-846 9040B, Laboratory Analyzed				06/29/2023 14:46
	SW-846 9214 (Total)				07/03/2023 12:51
	SW-846 9251 (Total)				07/03/2023 23:18
23062071-012B	APW-01R-WG-20230627	06/27/2023 16:30	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-012C	APW-01R-WG-20230627	06/27/2023 16:30	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 6:03
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 8:53
23062071-012D	APW-01R-WG-20230627	06/27/2023 16:30	06/28/2023 10:10		



Dates Report

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	06/29/2023 19:18
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/03/2023 17:34
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:26	07/06/2023 6:57
23062071-013A	APW-04-WG-20230627	06/27/2023 17:35	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/29/2023 11:35
	SW-846 9036 (Total)				07/06/2023 14:12
	SW-846 9040B, Laboratory Analyzed				06/29/2023 14:50
	SW-846 9214 (Total)				07/03/2023 12:53
	SW-846 9251 (Total)				07/03/2023 23:56
23062071-013B	APW-04-WG-20230627	06/27/2023 17:35	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-013C	APW-04-WG-20230627	06/27/2023 17:35	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 6:10
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 9:00
23062071-013D	APW-04-WG-20230627	06/27/2023 17:35	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	06/29/2023 19:24
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/03/2023 17:41
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/06/2023 7:03
23062071-014A	DUP-01-WG-20230627	06/27/2023 0:01	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/29/2023 11:36
	SW-846 9036 (Total)				07/04/2023 0:09
	SW-846 9040B, Laboratory Analyzed				06/29/2023 14:53
	SW-846 9214 (Total)				07/03/2023 13:07
	SW-846 9251 (Total)				07/04/2023 0:04
23062071-014B	DUP-01-WG-20230627	06/27/2023 0:01	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-014C	DUP-01-WG-20230627	06/27/2023 0:01	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 10:51	07/07/2023 6:16
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 9:02
23062071-014D	DUP-01-WG-20230627	06/27/2023 0:01	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	06/29/2023 19:30
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/03/2023 17:47
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/06/2023 7:09
23062071-015A	DUP-02-WG-20230627	06/27/2023 0:02	06/28/2023 10:10		
	Standard Methods 2540 C (Total) 1997, 2011				06/29/2023 11:36
	SW-846 9036 (Total)				07/06/2023 14:20



Dates Report

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 9040B, Laboratory Analyzed				06/29/2023 14:56
	SW-846 9214 (Total)				07/03/2023 13:09
	SW-846 9251 (Total)				07/04/2023 0:12
23062071-015B	DUP-02-WG-20230627	06/27/2023 0:02	06/28/2023 10:10		
	EPA 903.0/904.0, Radium 226/228				07/20/2023 15:16
23062071-015C	DUP-02-WG-20230627	06/27/2023 0:02	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 12:56	07/05/2023 22:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			07/03/2023 12:56	07/06/2023 22:13
	SW-846 7470A (Total)			07/05/2023 10:52	07/06/2023 9:04
23062071-015D	DUP-02-WG-20230627	06/27/2023 0:02	06/28/2023 10:10		
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	06/29/2023 19:36
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/03/2023 17:53
	SW-846 3005A, 6020A, Metals by ICPMS (Dissolved)			06/28/2023 19:48	07/06/2023 7:15



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R330972		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	06/28/2023	

Batch R330972		SampType: LCS		Units mg/L							Date Analyzed
SampID: LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		966	1000	0	96.6	90	110	06/28/2023	

Batch R330972		SampType: DUP		Units mg/L							RPD Limit 10	Date Analyzed
SampID: 23062071-002ADUP												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Total Dissolved Solids		20		626				614.0	1.94	06/28/2023		

Batch R331052		SampType: MBLK		Units mg/L							Date Analyzed
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	06/29/2023	
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	06/29/2023	

Batch R331052		SampType: LCS		Units mg/L							Date Analyzed
SampID: LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Total Dissolved Solids		20		948	1000	0	94.8	90	110	06/29/2023	
Total Dissolved Solids		20		938	1000	0	93.8	90	110	06/29/2023	

Batch R331052		SampType: DUP		Units mg/L							RPD Limit 10	Date Analyzed
SampID: 23062071-015ADUP												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Total Dissolved Solids		50		905				870.0	3.94	06/29/2023		

SW-846 9036 (TOTAL)

Batch R331147		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Sulfate		10		< 10	6.140	0	0	-100	100	07/03/2023	



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 9036 (TOTAL)

Batch R331147		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		18	20.00	0	91.6	90	110	07/03/2023	

Batch R331147		SampType: MS		Units mg/L							
SampID: 23062071-002AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		100		484	200.0	292.1	96.1	85	115	07/03/2023	

Batch R331147		SampType: MSD		Units mg/L						RPD Limit 10		Date Analyzed
SampID: 23062071-002AMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed		
Sulfate		100		468	200.0	292.1	88.1	484.4	3.37	07/03/2023		

Batch R331244		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	07/06/2023	

Batch R331244		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	93.3	90	110	07/06/2023	

Batch R331244		SampType: MS		Units mg/L							
SampID: 23062071-012AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		20		75	40.00	37.28	93.7	85	115	07/06/2023	

Batch R331244		SampType: MSD		Units mg/L						RPD Limit 10		Date Analyzed
SampID: 23062071-012AMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed		
Sulfate		20		76	40.00	37.28	96.7	74.74	1.61	07/06/2023		



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 9040B, LABORATORY ANALYZED

Batch R330948		SampType: LCS		Units							Date Analyzed
SampID: LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Lab pH		1.00		6.97	7.000	0	99.6	99.29	100.7	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-001ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	5.25				5.330	1.51	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-002ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	7.79				7.770	0.26	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-003ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	7.19				7.180	0.14	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-004ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	6.81				6.790	0.29	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-005ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	7.01				7.010	0.00	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-006ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	6.98				6.980	0.00	06/29/2023	

Batch R330948		SampType: DUP		Units		RPD Limit 10					Date Analyzed
SampID: 23062071-007ADUP											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD		
Lab pH		1.00	H	7.07				7.050	0.28	06/29/2023	



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 9040B, LABORATORY ANALYZED

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-008ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.40				7.390	0.14	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-009ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	6.95				6.900	0.72	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-010ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.28				7.270	0.14	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-011ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.34				7.320	0.27	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-012ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	6.55				6.530	0.31	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-013ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.39				7.390	0.00	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-014ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.31				7.300	0.14	06/29/2023

Batch R330948		SampType: DUP		Units		RPD Limit 10				Date Analyzed
SampID: 23062071-015ADUP										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	
Lab pH		1.00	H	7.03				7.030	0.00	06/29/2023



Quality Control Results

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 9214 (TOTAL)

Batch R331110		SampType: MBLK		Units mg/L							
SampID: MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		< 0.10	0.0500	0	0	-100	100	07/03/2023	

Batch R331110		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		0.92	1.000	0	92.0	90	110	07/03/2023	

Batch R331110		SampType: MS		Units mg/L							
SampID: 23062071-005AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.06	2.000	0.1500	95.6	75	125	07/03/2023	

Batch R331110		SampType: MSD		Units mg/L							
SampID: 23062071-005AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Fluoride		0.10		2.06	2.000	0.1500	95.8	2.061	0.19	07/03/2023	

Batch R331110		SampType: MS		Units mg/L							
SampID: 23062071-011AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.15	2.000	0.1860	98.1	75	125	07/03/2023	

Batch R331110		SampType: MSD		Units mg/L							
SampID: 23062071-011AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Fluoride		0.10		2.14	2.000	0.1860	97.8	2.148	0.33	07/03/2023	

Batch R331110		SampType: MS		Units mg/L							
SampID: 23062071-015AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Fluoride		0.10		2.14	2.000	0.2250	95.7	75	125	07/03/2023	

Batch R331110		SampType: MSD		Units mg/L							
SampID: 23062071-015AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Fluoride		0.10		2.15	2.000	0.2250	96.3	2.139	0.51	07/03/2023	



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 9251 (TOTAL)

Batch R331159		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		< 4	0.5000	0	0	-100	100	07/03/2023	

Batch R331159		SampType: LCS		Units mg/L							
SampID: ICB/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		20	20.00	0	99.6	90	110	07/03/2023	

Batch R331159		SampType: MS		Units mg/L							
SampID: 23062071-002AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		36	20.00	17.09	93.9	85	115	07/03/2023	

Batch R331159		SampType: MSD		Units mg/L							
SampID: 23062071-002AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chloride		4		36	20.00	17.09	93.0	35.87	0.53	07/03/2023	

Batch R331159		SampType: MS		Units mg/L							
SampID: 23062071-012AMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		21	20.00	1.650	94.6	85	115	07/03/2023	

Batch R331159		SampType: MSD		Units mg/L							
SampID: 23062071-012AMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Chloride		4		21	20.00	1.650	95.6	20.57	0.92	07/03/2023	

Batch R331275		SampType: MBLK		Units mg/L							
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		< 4	0.5000	0	0	-100	100	07/06/2023	

Batch R331275		SampType: LCS		Units mg/L							
SampID: ICB/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Chloride		4		20	20.00	0	102.5	90	110	07/06/2023	



Quality Control Results

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 207896 SampType: MBLK Units mg/L

SampID: MBLK-207896

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	06/29/2023
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	06/29/2023
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	06/29/2023
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	06/29/2023
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	07/03/2023
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	06/29/2023
Calcium		0.125		< 0.125	0.0700	0	0	-100	100	07/03/2023
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	06/29/2023
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	06/29/2023
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	06/29/2023
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	06/29/2023
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	06/29/2023
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	06/29/2023
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	06/29/2023

Batch 207896 SampType: LCS Units mg/L

SampID: LCS-207896

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.527	0.5000	0	105.3	80	120	07/03/2023
Arsenic		0.0010		0.433	0.5000	0	86.7	80	120	06/29/2023
Barium		0.0010		2.18	2.000	0	108.8	80	120	07/03/2023
Beryllium		0.0010		0.0481	0.0500	0	96.2	80	120	07/03/2023
Boron		0.0250		0.494	0.5000	0	98.7	80	120	07/03/2023
Cadmium		0.0010		0.0504	0.0500	0	100.7	80	120	07/03/2023
Calcium		0.125		2.49	2.500	0	99.8	80	120	07/03/2023
Chromium		0.0015		0.215	0.2000	0	107.4	80	120	07/06/2023
Cobalt		0.0010		0.541	0.5000	0	108.2	80	120	07/06/2023
Lead		0.0010		0.530	0.5000	0	106.1	80	120	07/03/2023
Lithium	*	0.0030		0.457	0.5000	0	91.4	80	120	06/29/2023
Molybdenum		0.0015		0.496	0.5000	0	99.2	80	120	07/03/2023
Selenium		0.0010		0.405	0.5000	0	81.0	80	120	06/29/2023
Thallium		0.0020		0.252	0.2500	0	100.6	80	120	07/03/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 207896		SampType: MS		Units mg/L							Date Analyzed
SampID: 23062071-004DMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Antimony		0.0010		0.431	0.5000	0	86.3	75	125	07/03/2023	
Arsenic		0.0010		0.444	0.5000	0.001228	88.5	75	125	06/29/2023	
Barium		0.0010		2.02	2.000	0.3029	85.8	75	125	07/03/2023	
Beryllium		0.0010		0.0410	0.0500	0	81.9	75	125	07/03/2023	
Boron		0.0250		0.627	0.5000	0.2084	83.7	75	125	07/03/2023	
Cadmium		0.0010		0.0428	0.0500	0	85.5	75	125	07/03/2023	
Calcium		0.125	S	173	2.500	179.6	-281.4	75	125	07/03/2023	
Chromium		0.0015		0.185	0.2000	0	92.6	75	125	07/06/2023	
Cobalt		0.0010		0.456	0.5000	0	91.1	75	125	07/06/2023	
Lead		0.0010		0.431	0.5000	0	86.3	75	125	07/03/2023	
Lithium	*	0.0030		0.461	0.5000	0.01363	89.4	75	125	06/29/2023	
Molybdenum		0.0015		0.425	0.5000	0.002674	84.4	75	125	07/03/2023	
Selenium		0.0010		0.406	0.5000	0	81.3	75	125	06/29/2023	
Thallium		0.0020		0.206	0.2500	0	82.5	75	125	07/03/2023	

Batch 207896		SampType: MSD		Units mg/L							RPD Limit 20	Date Analyzed
SampID: 23062071-004DMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed		
Antimony		0.0010		0.433	0.5000	0	86.7	0.4313	0.49	07/03/2023		
Arsenic		0.0010		0.468	0.5000	0.001228	93.4	0.4437	5.33	06/29/2023		
Barium		0.0010		2.02	2.000	0.3029	85.7	2.019	0.11	07/03/2023		
Beryllium		0.0010		0.0411	0.0500	0	82.2	0.04096	0.36	07/03/2023		
Boron		0.0250		0.622	0.5000	0.2084	82.8	0.6271	0.75	07/03/2023		
Cadmium		0.0010		0.0422	0.0500	0	84.4	0.04277	1.37	07/03/2023		
Calcium		0.125	S	174	2.500	179.6	-221.6	172.6	0.86	07/03/2023		
Chromium		0.0015		0.183	0.2000	0	91.4	0.1853	1.30	07/06/2023		
Cobalt		0.0010		0.451	0.5000	0	90.2	0.4557	1.05	07/06/2023		
Lead		0.0010		0.434	0.5000	0	86.7	0.4315	0.47	07/03/2023		
Lithium	*	0.0030		0.477	0.5000	0.01363	92.6	0.4607	3.40	06/29/2023		
Molybdenum		0.0015		0.429	0.5000	0.002674	85.2	0.4246	0.98	07/03/2023		
Selenium		0.0010		0.428	0.5000	0	85.7	0.4063	5.30	06/29/2023		
Thallium		0.0020		0.204	0.2500	0	81.5	0.2063	1.21	07/03/2023		

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 207896		SampType: MS		Units mg/L						
SampID: 23062071-011DMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.429	0.5000	0	85.9	75	125	07/03/2023
Arsenic		0.0010		0.444	0.5000	0.002084	88.4	75	125	06/29/2023
Barium		0.0010		1.78	2.000	0.1160	83.3	75	125	07/03/2023
Beryllium		0.0010		0.0421	0.0500	0	84.1	75	125	07/03/2023
Boron		0.0250		1.02	0.5000	0.5720	88.8	75	125	07/06/2023
Cadmium		0.0010		0.0425	0.0500	0	85.1	75	125	07/03/2023
Calcium		0.125	S	80.8	2.500	82.79	-80.5	75	125	07/03/2023
Chromium		0.0015		0.173	0.2000	0	86.4	75	125	07/06/2023
Cobalt		0.0010		0.425	0.5000	0	85.1	75	125	07/06/2023
Lead		0.0010		0.439	0.5000	0	87.8	75	125	07/03/2023
Lithium	*	0.0030		0.484	0.5000	0.01627	93.5	75	125	06/29/2023
Molybdenum		0.0015		0.436	0.5000	0.02111	83.0	75	125	07/03/2023
Selenium		0.0010		0.429	0.5000	0.01862	82.1	75	125	06/29/2023
Thallium		0.0020		0.204	0.2500	0	81.7	75	125	07/03/2023

Batch 207896		SampType: MSD		Units mg/L							RPD Limit 20
SampID: 23062071-011DMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Antimony		0.0010		0.391	0.5000	0	78.3	0.4294	9.28	07/03/2023	
Arsenic		0.0010		0.415	0.5000	0.002084	82.6	0.4439	6.65	06/29/2023	
Barium		0.0010		1.67	2.000	0.1160	77.5	1.781	6.68	07/03/2023	
Beryllium		0.0010		0.0393	0.0500	0	78.5	0.04206	6.90	07/03/2023	
Boron		0.0250		0.960	0.5000	0.5720	77.7	1.016	5.64	07/06/2023	
Cadmium		0.0010		0.0379	0.0500	0	75.8	0.04254	11.54	07/03/2023	
Calcium		0.125	S	81.2	2.500	82.79	-65.4	80.78	0.47	07/03/2023	
Chromium		0.0015		0.162	0.2000	0	80.8	0.1729	6.78	07/06/2023	
Cobalt		0.0010		0.398	0.5000	0	79.5	0.4253	6.75	07/06/2023	
Lead		0.0010		0.412	0.5000	0	82.4	0.4392	6.36	07/03/2023	
Lithium	*	0.0030		0.480	0.5000	0.01627	92.7	0.4836	0.75	06/29/2023	
Molybdenum		0.0015		0.404	0.5000	0.02111	76.6	0.4360	7.57	07/03/2023	
Selenium		0.0010		0.402	0.5000	0.01862	76.7	0.4290	6.50	06/29/2023	
Thallium		0.0020		0.192	0.2500	0	77.0	0.2043	5.96	07/03/2023	



Quality Control Results

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Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 207943 SampType: MBLK Units mg/L

SampID: MBLK-207943

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	07/03/2023
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	07/03/2023
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	07/03/2023
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	07/03/2023
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	07/03/2023
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	07/03/2023
Calcium		0.125		< 0.125	0.0700	0	0	-100	100	07/03/2023
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	07/06/2023
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	07/06/2023
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	07/03/2023
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	07/06/2023
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	07/03/2023
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	07/03/2023
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	07/03/2023

Batch 207943 SampType: LCS Units mg/L

SampID: LCS-207943

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.482	0.5000	0	96.3	80	120	07/03/2023
Arsenic		0.0010		0.513	0.5000	0	102.5	80	120	07/03/2023
Barium		0.0010		2.05	2.000	0	102.6	80	120	07/03/2023
Beryllium		0.0010		0.0464	0.0500	0	92.8	80	120	07/03/2023
Boron		0.0250		0.504	0.5000	0	100.8	80	120	07/03/2023
Cadmium		0.0010		0.0482	0.0500	0	96.3	80	120	07/03/2023
Calcium		0.125		2.40	2.500	0	96.2	80	120	07/03/2023
Chromium		0.0015		0.211	0.2000	0	105.3	80	120	07/06/2023
Cobalt		0.0010		0.539	0.5000	0	107.9	80	120	07/06/2023
Lead		0.0010		0.527	0.5000	0	105.4	80	120	07/03/2023
Lithium	*	0.0030		0.502	0.5000	0	100.5	80	120	07/06/2023
Molybdenum		0.0015		0.486	0.5000	0	97.2	80	120	07/03/2023
Selenium		0.0010		0.475	0.5000	0	95.0	80	120	07/03/2023
Thallium		0.0020		0.246	0.2500	0	98.3	80	120	07/03/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 207943 SampType: MS Units mg/L

SampID: 23062071-001DMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.469	0.5000	0	93.8	75	125	07/04/2023
Arsenic		0.0010		0.468	0.5000	0	93.7	75	125	07/04/2023
Barium		0.0010		1.96	2.000	0	98.1	75	125	07/04/2023
Beryllium		0.0010		0.0452	0.0500	0	90.5	75	125	07/04/2023
Boron		0.0250		0.492	0.5000	0	98.4	75	125	07/04/2023
Cadmium		0.0010		0.0455	0.0500	0	91.0	75	125	07/04/2023
Calcium		0.125		2.18	2.500	0	87.0	75	125	07/04/2023
Chromium		0.0015		0.199	0.2000	0	99.3	75	125	07/06/2023
Cobalt		0.0010		0.500	0.5000	0	100.1	75	125	07/06/2023
Lead		0.0010		0.514	0.5000	0	102.9	75	125	07/04/2023
Lithium	*	0.0030		0.485	0.5000	0	97.1	75	125	07/06/2023
Molybdenum		0.0015		0.457	0.5000	0	91.3	75	125	07/04/2023
Selenium		0.0010		0.437	0.5000	0	87.5	75	125	07/04/2023
Thallium		0.0020		0.244	0.2500	0	97.5	75	125	07/04/2023

Batch 207943 SampType: MSD Units mg/L

RPD Limit 20

SampID: 23062071-001DMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.478	0.5000	0	95.5	0.4691	1.81	07/04/2023
Arsenic		0.0010		0.498	0.5000	0	99.5	0.4683	6.06	07/04/2023
Barium		0.0010		2.00	2.000	0	100.2	1.962	2.14	07/04/2023
Beryllium		0.0010		0.0452	0.0500	0	90.3	0.04523	0.13	07/04/2023
Boron		0.0250		0.502	0.5000	0	100.4	0.4920	2.06	07/04/2023
Cadmium		0.0010		0.0474	0.0500	0	94.8	0.04551	4.08	07/04/2023
Calcium		0.125		2.14	2.500	0	85.7	2.176	1.58	07/04/2023
Chromium		0.0015		0.209	0.2000	0	104.4	0.1986	5.04	07/06/2023
Cobalt		0.0010		0.535	0.5000	0	106.9	0.5004	6.60	07/06/2023
Lead		0.0010		0.522	0.5000	0	104.5	0.5145	1.51	07/04/2023
Lithium	*	0.0030		0.498	0.5000	0	99.5	0.4854	2.46	07/06/2023
Molybdenum		0.0015		0.477	0.5000	0	95.4	0.4567	4.37	07/04/2023
Selenium		0.0010		0.460	0.5000	0	91.9	0.4374	4.97	07/04/2023
Thallium		0.0020		0.245	0.2500	0	97.9	0.2436	0.42	07/04/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 208035 SampType: MBLK Units mg/L
 SampID: MBLK-208035

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	07/06/2023
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	07/07/2023
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	07/06/2023
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	07/07/2023
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	07/07/2023
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	07/07/2023
Calcium		0.125	S	0.260	0.0700	0	371.9	-100	100	07/07/2023
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	07/07/2023
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	07/07/2023
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	07/06/2023
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	07/07/2023
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	07/07/2023
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	07/07/2023
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	07/06/2023

Batch 208035 SampType: LCS Units mg/L
 SampID: LCS-208035

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.551	0.5000	0	110.2	85	115	07/06/2023
Arsenic		0.0010		0.517	0.5000	0	103.5	80	120	07/07/2023
Barium		0.0010		2.10	2.000	0	104.8	80	120	07/07/2023
Beryllium		0.0010		0.0479	0.0500	0	95.8	80	120	07/07/2023
Boron		0.0250		0.497	0.5000	0	99.4	80	120	07/07/2023
Cadmium		0.0010		0.0482	0.0500	0	96.4	80	120	07/07/2023
Calcium		0.125	B	2.70	2.500	0	108.0	80	120	07/07/2023
Chromium		0.0015		0.199	0.2000	0	99.3	80	120	07/07/2023
Cobalt		0.0010		0.497	0.5000	0	99.4	80	120	07/07/2023
Lead		0.0010		0.518	0.5000	0	103.6	85	115	07/06/2023
Lithium	*	0.0030		0.483	0.5000	0	96.5	80	120	07/07/2023
Molybdenum		0.0015		0.471	0.5000	0	94.1	80	120	07/07/2023
Selenium		0.0010		0.481	0.5000	0	96.1	80	120	07/07/2023
Thallium		0.0020		0.246	0.2500	0	98.4	85	115	07/06/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 208035 **SampType: MS** Units mg/L

SampID: 23062071-004CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.536	0.5000	0	107.3	75	125	07/07/2023
Arsenic		0.0010		0.539	0.5000	0.001382	107.5	75	125	07/07/2023
Barium		0.0010		2.53	2.000	0.3121	111.0	75	125	07/07/2023
Beryllium		0.0010		0.0499	0.0500	0	99.7	75	125	07/07/2023
Boron		0.0250		0.724	0.5000	0.2368	97.4	75	125	07/07/2023
Cadmium		0.0010		0.0516	0.0500	0	103.1	75	125	07/07/2023
Calcium		0.125	BS	189	2.500	183.1	237.9	75	125	07/07/2023
Chromium		0.0015		0.206	0.2000	0	103.2	75	125	07/07/2023
Cobalt		0.0010		0.506	0.5000	0.0004089	101.1	75	125	07/07/2023
Lead		0.0010		0.528	0.5000	0	105.6	75	125	07/07/2023
Lithium	*	0.0030		0.524	0.5000	0.01531	101.7	75	125	07/07/2023
Molybdenum		0.0015		0.518	0.5000	0.002814	103.0	75	125	07/07/2023
Selenium		0.0010		0.505	0.5000	0	101.0	75	125	07/07/2023
Thallium		0.0020		0.250	0.2500	0	100.1	75	125	07/07/2023

Batch 208035 **SampType: MSD** Units mg/L

RPD Limit **20**

SampID: 23062071-004CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		0.0010		0.501	0.5000	0	100.2	0.5365	6.85	07/07/2023
Arsenic		0.0010		0.510	0.5000	0.001382	101.7	0.5390	5.56	07/07/2023
Barium		0.0010		2.39	2.000	0.3121	104.1	2.531	5.61	07/07/2023
Beryllium		0.0010		0.0489	0.0500	0	97.8	0.04986	1.93	07/07/2023
Boron		0.0250		0.695	0.5000	0.2368	91.6	0.7237	4.10	07/07/2023
Cadmium		0.0010		0.0482	0.0500	0	96.4	0.05157	6.73	07/07/2023
Calcium		0.125	BS	182	2.500	183.1	-44.2	189.1	3.80	07/07/2023
Chromium		0.0015		0.198	0.2000	0	99.2	0.2065	3.97	07/07/2023
Cobalt		0.0010		0.486	0.5000	0.0004089	97.1	0.5058	3.99	07/07/2023
Lead		0.0010		0.519	0.5000	0	103.8	0.5280	1.69	07/07/2023
Lithium	*	0.0030		0.507	0.5000	0.01531	98.3	0.5237	3.26	07/07/2023
Molybdenum		0.0015		0.482	0.5000	0.002814	95.9	0.5178	7.14	07/07/2023
Selenium		0.0010		0.471	0.5000	0	94.1	0.5048	6.99	07/07/2023
Thallium		0.0020		0.250	0.2500	0	100.0	0.2503	0.11	07/07/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 208048 SampType: MBLK Units mg/L

SampID: MBLK-208048

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	07/05/2023
Arsenic		0.0010		< 0.0010	0.0004	0	0	-100	100	07/05/2023
Barium		0.0010		< 0.0010	0.0007	0	0	-100	100	07/05/2023
Beryllium		0.0010		< 0.0010	0.0002	0	0	-100	100	07/06/2023
Boron		0.0250		< 0.0250	0.0093	0	0	-100	100	07/06/2023
Cadmium		0.0010		< 0.0010	0.0001	0	0	-100	100	07/05/2023
Calcium		0.125		< 0.125	0.0700	0	0	-100	100	07/06/2023
Chromium		0.0015		< 0.0015	0.0007	0	0	-100	100	07/05/2023
Cobalt		0.0010		< 0.0010	0.0001	0	0	-100	100	07/05/2023
Lead		0.0010		< 0.0010	0.0006	0	0	-100	100	07/05/2023
Lithium	*	0.0030		< 0.0030	0.0015	0	0	-100	100	07/06/2023
Molybdenum		0.0015		< 0.0015	0.0006	0	0	-100	100	07/06/2023
Selenium		0.0010		< 0.0010	0.0006	0	0	-100	100	07/05/2023
Thallium		0.0020		< 0.0020	0.0010	0	0	-100	100	07/05/2023

Batch 208048 SampType: LCS Units mg/L

SampID: LCS-208048

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		0.0010		0.537	0.5000	0	107.3	80	120	07/06/2023
Arsenic		0.0010		0.542	0.5000	0	108.4	80	120	07/05/2023
Barium		0.0010		2.21	2.000	0	110.7	80	120	07/06/2023
Beryllium		0.0010		0.0520	0.0500	0	104.0	80	120	07/06/2023
Boron		0.0250		0.535	0.5000	0	107.0	80	120	07/06/2023
Cadmium		0.0010		0.0482	0.0500	0	96.5	80	120	07/05/2023
Calcium		0.125		2.82	2.500	0	112.8	80	120	07/06/2023
Chromium		0.0015		0.210	0.2000	0	104.8	80	120	07/05/2023
Cobalt		0.0010		0.513	0.5000	0	102.6	80	120	07/05/2023
Lead		0.0010		0.502	0.5000	0	100.4	80	120	07/05/2023
Lithium	*	0.0030		0.521	0.5000	0	104.1	80	120	07/06/2023
Molybdenum		0.0015		0.515	0.5000	0	103.0	80	120	07/06/2023
Selenium		0.0010		0.486	0.5000	0	97.2	80	120	07/05/2023
Thallium		0.0020		0.251	0.2500	0	100.5	80	120	07/05/2023

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

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

Batch 208048 **SampType: MS** Units mg/L

SampID: 23062071-015CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		0.0010		0.547	0.5000	0.01457	106.6	75	125	07/05/2023
Arsenic		0.0010		0.560	0.5000	0.01576	108.9	75	125	07/06/2023
Barium		0.0010		2.29	2.000	0.2057	104.2	75	125	07/06/2023
Beryllium		0.0010		0.0508	0.0500	0.0002715	101.0	75	125	07/06/2023
Boron		0.0250	S	9.60	0.5000	9.506	19.0	75	125	07/06/2023
Cadmium		0.0010		0.0469	0.0500	0.0002636	93.3	75	125	07/05/2023
Calcium		0.125	S	160	2.500	167.0	-272.8	75	125	07/06/2023
Chromium		0.0015		0.201	0.2000	0.007883	96.6	75	125	07/05/2023
Cobalt		0.0010		0.483	0.5000	0.001560	96.3	75	125	07/05/2023
Lead		0.0010		0.513	0.5000	0.002909	102.0	75	125	07/05/2023
Lithium	*	0.0030		0.575	0.5000	0.04800	105.5	75	125	07/06/2023
Molybdenum		0.0015		0.754	0.5000	0.2517	100.4	75	125	07/06/2023
Selenium		0.0010		0.469	0.5000	0	93.9	75	125	07/05/2023
Thallium		0.0020		0.255	0.2500	0	102.0	75	125	07/05/2023

Batch 208048 **SampType: MSD** Units mg/L

RPD Limit **20**

SampID: 23062071-015CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic		0.0010		0.569	0.5000	0.01576	110.7	0.5602	1.57	07/06/2023
Arsenic		0.0010		0.575	0.5000	0.01457	112.1	0.5475	4.91	07/05/2023
Barium		0.0010		2.29	2.000	0.2057	104.1	2.289	0.04	07/06/2023
Beryllium		0.0010		0.0517	0.0500	0.0002715	102.9	0.05079	1.85	07/06/2023
Boron		0.0250	S	9.78	0.5000	9.506	55.1	9.601	1.86	07/06/2023
Cadmium		0.0010		0.0502	0.0500	0.0002636	99.9	0.04692	6.77	07/05/2023
Calcium		0.125	S	164	2.500	167.0	-125.7	160.2	2.27	07/06/2023
Chromium		0.0015		0.215	0.2000	0.007883	103.7	0.2012	6.77	07/05/2023
Cobalt		0.0010		0.510	0.5000	0.001560	101.7	0.4833	5.36	07/05/2023
Lead		0.0010		0.527	0.5000	0.002909	104.8	0.5128	2.66	07/05/2023
Lithium	*	0.0030		0.588	0.5000	0.04800	108.0	0.5754	2.16	07/06/2023
Molybdenum		0.0015		0.760	0.5000	0.2517	101.7	0.7535	0.86	07/06/2023
Selenium		0.0010		0.495	0.5000	0	99.0	0.4693	5.32	07/05/2023
Thallium		0.0020		0.270	0.2500	0	108.0	0.2550	5.77	07/05/2023



Quality Control Results

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

SW-846 7470A (TOTAL)

Batch 207990		SampType: MBLK		Units mg/L							
SampID: MBLK-207990											
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	07/05/2023	

Batch 207990		SampType: LCS		Units mg/L							
SampID: LCS-207990											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00448	0.0050	0	89.6	85	115	07/03/2023	

Batch 207990		SampType: MS		Units mg/L							
SampID: 23062071-001CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00527	0.0050	0	105.4	75	125	07/05/2023	

Batch 207990		SampType: MSD		Units mg/L							
SampID: 23062071-001CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Mercury		0.00020		0.00517	0.0050	0	103.4	0.005268	1.84	07/05/2023	

Batch 208092		SampType: MBLK		Units mg/L							
SampID: MBLK-208092											
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	07/06/2023	

Batch 208092		SampType: LCS		Units mg/L							
SampID: LCS-208092											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00488	0.0050	0	97.7	85	115	07/06/2023	

Batch 208092		SampType: MS		Units mg/L							
SampID: 23062071-008CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Mercury		0.00020		0.00491	0.0050	0	98.2	75	125	07/06/2023	

Batch 208092		SampType: MSD		Units mg/L							
SampID: 23062071-008CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Mercury		0.00020		0.00487	0.0050	0	97.4	0.004912	0.90	07/06/2023	



Receiving Check List

<http://www.teklabinc.com/>

Client: ERM

Work Order: 23062071

Client Project: 0599247

Report Date: 10-Aug-23

Carrier: Clay Sansoucie

Received By: MBP

Completed by:

Allison Colin

Reviewed by:

Ellie Hopkins

On:

28-Jun-23

Allison Colin

On:

28-Jun-23

Ellie Hopkins

Pages to follow: Chain of custody

Extra pages included

- | | | | | |
|---|---|---|--------------------------------------|----------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Temp °C 4.0 |
| Type of thermal preservation? | None <input type="checkbox"/> | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/> | Dry Ice <input type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | | |
| Reported field parameters measured: | Field <input type="checkbox"/> | Lab <input checked="" type="checkbox"/> | NA <input type="checkbox"/> | |

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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>
---	---	-----------------------------

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- | | | | |
|---|------------------------------|--|---|
| Water – at least one vial per sample has zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/> |
| Water - TOX containers have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

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

pH strip #88374. - acoln - 6/28/2023 11:13:59 AM

Additional HNO3 (90404) was needed in APW-08 and APW-10S upon arrival at the laboratory. - acoln - 6/28/2023 11:14:09 AM

EB-01-WQ-20230626 was split, filtered and preserved with HNO3 (90404) upon arrival at laboratory. - TWM - 6/28/23



Summit Environmental Technologies, Inc.
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Website: <http://www.settek.com>

August 09, 2023

Elizabeth Hurley
TEKLAB Inc,
5445 Horseshoe lake Road
Collinsville, IL 62234
TEL:
FAX:
RE: 23062071

Order No.: 23070477

Dear Elizabeth Hurley:

Summit Environmental Technologies, Inc. received 15 sample(s) on 7/7/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Jennifer Woolf
Project Manager
3310 Win St.
Cuyahoga Falls, Ohio 44223

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



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Case Narrative

WO#: 23070477
Date: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071

WorkOrder Narrative:

23070477: This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

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

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

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

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

Analytical Sequence Sample Notes:

23070477-010A Radium-228_NPW(904.0): Parent sample and duplicate exhibited a high RPD, both sample and duplicate are below PQL

REVISED REPORT 8/9/23: Corrected negative values for -005 & -009.

Revision v1

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

Qualifiers

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

Acronyms

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

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



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Workorder
Sample Summary
 WO#: **23070477**
09-Aug-23

CLIENT: TEKLAB Inc,
Project: 23062071

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
23070477-001	23062071-001		6/26/2023 9:00:00 AM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-002	23062071-002		6/26/2023 12:10:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-003	23062071-003		6/26/2023 2:15:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-004	23062071-004		6/26/2023 3:20:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-005	23062071-005		6/26/2023 5:00:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-006	23062071-006		6/26/2023 6:45:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-007	23062071-007		6/27/2023 9:10:00 AM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-008	23062071-008		6/27/2023 10:35:00 AM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-009	23062071-009		6/27/2023 12:15:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-010	23062071-010		6/27/2023 2:10:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-011	23062071-011		6/27/2023 3:20:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-012	23062071-012		6/27/2023 4:30:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-013	23062071-013		6/27/2023 5:35:00 PM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-014	23062071-014		6/27/2023 12:01:00 AM	7/7/2023 1:30:00 PM	Non-Potable Water
23070477-015	23062071-015		6/27/2023 12:02:00 AM	7/7/2023 1:30:00 PM	Non-Potable Water



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DATES REPORT

WO#: **23070477**
09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23070477-001A	23062071-001	6/26/2023 9:00:00 AM	Non-Potable Water	Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-002A	23062071-002	6/26/2023 12:10:00 PM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/25/2023 12:57:10 PM	8/2/2023 3:10:00 PM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-003A	23062071-003	6/26/2023 2:15:00 PM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-004A	23062071-004	6/26/2023 3:20:00 PM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-005A	23062071-005	6/26/2023 5:00:00 PM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/25/2023 12:57:10 PM	8/2/2023 3:10:00 PM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-006A	23062071-006	6/26/2023 6:45:00 PM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-007A	23062071-007	6/27/2023 9:10:00 AM		Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM

Revision v1



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DATES REPORT

WO#: **23070477**
09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23070477-008A	23062071-008	6/27/2023 10:35:00 AM	Non-Potable Water	Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
				Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
23070477-009A	23062071-009	6/27/2023 12:15:00 PM		Radium-228 (EPA 904.0)		7/25/2023 12:57:10 PM	8/2/2023 3:10:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/12/2023 11:59:36 AM	7/18/2023 9:09:00 AM
23070477-010A	23062071-010	6/27/2023 2:10:00 PM		Radium-228 (EPA 904.0)		7/12/2023 11:59:36 AM	7/17/2023 3:33:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM
23070477-011A	23062071-011	6/27/2023 3:20:00 PM		Radium-228 (EPA 904.0)		7/13/2023 12:34:34 PM	7/20/2023 3:16:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM
23070477-012A	23062071-012	6/27/2023 4:30:00 PM		Radium-228 (EPA 904.0)		7/13/2023 12:34:34 PM	7/20/2023 3:16:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM
23070477-013A	23062071-013	6/27/2023 5:35:00 PM		Radium-228 (EPA 904.0)		7/13/2023 12:34:34 PM	7/20/2023 3:16:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM
23070477-014A	23062071-014	6/27/2023 12:01:00 AM		Radium-228 (EPA 904.0)		7/13/2023 12:34:34 PM	7/20/2023 3:16:00 PM
				Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM

Revision v1



SUMMIT
 ENVIRONMENTAL TECHNOLOGIES, INC.
 Analytical Laboratories

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DATES REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
23070477-015A	23062071-015	6/27/2023 12:02:00 AM	Non-Potable Water	Combined Radium (EPA903+904)			8/7/2023 8:05:48 AM
				Radium-226 (EPA 903.0)		7/13/2023 12:34:34 PM	7/21/2023 9:43:00 AM
				Radium-228 (EPA 904.0)		7/13/2023 12:34:34 PM	7/20/2023 3:16:00 PM

Revision v1



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Analytical Report

(consolidated)
 WO#: 23070477
 Date Reported: 8/9/2023

CLIENT: TEKLAB Inc, **Collection Date:** 6/26/2023 9:00:00 AM
Project: 23062071
Lab ID: 23070477-001 **Matrix:** NON-POTABLE WATER
Client Sample ID: 23062071-001

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	2	2.00		pCi/L	± 0.87	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.01	1.00	U	pCi/L	± 0.06	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	1.99	1.00		pCi/L	± 0.81	1	7/17/2023 3:33:00 PM
Yield	1					1	7/17/2023 3:33:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-002
Client Sample ID: 23062071-002

Collection Date: 6/26/2023 12:10:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.84	2.00	U	pCi/L	± 0.65	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.23	1.00	U	pCi/L	± 0.11	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.61	1.00	U	pCi/L	± 0.54	1	8/2/2023 3:10:00 PM
Yield	1					1	8/2/2023 3:10:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-003
Client Sample ID: 23062071-003

Collection Date: 6/26/2023 2:15:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.45	2.00	U	pCi/L	± 0.72	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.34	1.00	U	pCi/L	± 0.12	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.11	1.00	U	pCi/L	± 0.6	1	7/17/2023 3:33:00 PM
Yield	1					1	7/17/2023 3:33:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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

Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-004
Client Sample ID: 23062071-004

Collection Date: 6/26/2023 3:20:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION			Analyst: CXS
Radium-226/Radium-228	1.11	2.00	U	pCi/L	± 0.8	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0		E903-904	Analyst: HDJ
Radium-226	-0.01	1.00	U	pCi/L	± 0.06	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0		E903-904	Analyst: HDJ
Radium-228	1.11	1.00		pCi/L	± 0.74	1	7/17/2023 3:33:00 PM
Yield	1					1	7/17/2023 3:33:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-005
Client Sample ID: 23062071-005

Collection Date: 6/26/2023 5:00:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.37	2.00	U	pCi/L	± 0.6	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.37	1.00	U	pCi/L	± 0.13	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	-0.18	1.00	U	pCi/L	± 0.47	1	8/2/2023 3:10:00 PM
Yield	1					1	8/2/2023 3:10:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-006
Client Sample ID: 23062071-006

Collection Date: 6/26/2023 6:45:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	1.7	2.00	U	pCi/L	± 0.88	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.31	1.00	U	pCi/L	± 0.12	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	1.39	1.00		pCi/L	± 0.76	1	7/17/2023 3:33:00 PM
Yield	1					1	7/17/2023 3:33:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)
 WO#: 23070477
 Date Reported: 8/9/2023

CLIENT: TEKLAB Inc, **Collection Date:** 6/27/2023 9:10:00 AM
Project: 23062071
Lab ID: 23070477-007 **Matrix:** NON-POTABLE WATER
Client Sample ID: 23062071-007

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION			Analyst: CXS
Radium-226/Radium-228	0.11	2.00	U	pCi/L	± 0.67	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.11	1.00	U	pCi/L	± 0.08	1	7/18/2023 9:09:00 AM
Yield	0.99					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	-0.03	1.00	U	pCi/L	± 0.59	1	7/17/2023 3:33:00 PM
Yield	1					1	7/17/2023 3:33:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
ND	Not Detected	OG1	
P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-008
Client Sample ID: 23062071-008

Collection Date: 6/27/2023 10:35:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	1.04	2.00	U	pCi/L	± 0.66	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.3	1.00	U	pCi/L	± 0.12	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.74	1.00	J	pCi/L	± 0.54	1	8/2/2023 3:10:00 PM
Yield	1					1	8/2/2023 3:10:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-009
Client Sample ID: 23062071-009

Collection Date: 6/27/2023 12:15:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.21	2.00	U	pCi/L	± 0.7	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0		E903-904	Analyst: HDJ
Radium-226	0.21	1.00	U	pCi/L	± 0.1	1	7/18/2023 9:09:00 AM
Yield	1					1	7/18/2023 9:09:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0		E903-904	Analyst: HDJ
Radium-228	-0.42	1.00	U	pCi/L	± 0.6	1	8/2/2023 3:10:00 PM
Yield	0.99					1	8/2/2023 3:10:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-010
Client Sample ID: 23062071-010

Collection Date: 6/27/2023 2:10:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.54	2.00	U	pCi/L	± 0.6	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0		E903-904	Analyst: HDJ
Radium-226	0.23	1.00	U	pCi/L	± 0.1	1	7/21/2023 9:43:00 AM
Yield	1					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0		E903-904	Analyst: HDJ
Radium-228	0.31	1.00	UQDR	pCi/L	± 0.5	1	7/20/2023 3:16:00 PM
Yield	1					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-011
Client Sample ID: 23062071-011

Collection Date: 6/27/2023 3:20:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.53	2.00	U	pCi/L	± 0.74	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.18	1.00	U	pCi/L	± 0.09	1	7/21/2023 9:43:00 AM
Yield	1					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.35	1.00	U	pCi/L	± 0.65	1	7/20/2023 3:16:00 PM
Yield	1					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-012
Client Sample ID: 23062071-012

Collection Date: 6/27/2023 4:30:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	1.12	2.00	U	pCi/L	± 0.72	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.27	1.00	U	pCi/L	± 0.11	1	7/21/2023 9:43:00 AM
Yield	1					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.85	1.00	J	pCi/L	± 0.61	1	7/20/2023 3:16:00 PM
Yield	1					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-013
Client Sample ID: 23062071-013

Collection Date: 6/27/2023 5:35:00 PM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	1.25	2.00	U	pCi/L	± 0.8	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.33	1.00	U	pCi/L	± 0.12	1	7/21/2023 9:43:00 AM
Yield	1					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.92	1.00	J	pCi/L	± 0.68	1	7/20/2023 3:16:00 PM
Yield	0.92					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-014
Client Sample ID: 23062071-014

Collection Date: 6/27/2023 12:01:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.72	2.00	U	pCi/L	± 0.75	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	0.11	1.00	U	pCi/L	± 0.08	1	7/21/2023 9:43:00 AM
Yield	0.96					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.61	1.00	U	pCi/L	± 0.67	1	7/20/2023 3:16:00 PM
Yield	1					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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Analytical Report

(consolidated)

WO#: 23070477

Date Reported: 8/9/2023

CLIENT: TEKLAB Inc,
Project: 23062071
Lab ID: 23070477-015
Client Sample ID: 23062071-015

Collection Date: 6/27/2023 12:02:00 AM

Matrix: NON-POTABLE WATER

Analyses	Result	PQL	Qual	Units	Uncertainty	DF	Date Analyzed
RAD226/228 COMBINED RADIUM (EPA903+904)				CALCULATION		Analyst: CXS	
Radium-226/Radium-228	0.13	2.00	U	pCi/L	± 0.59	1	8/7/2023 8:05:48 AM
RAD226/228 RADIUM-226 (EPA 903.0)				E903.0	E903-904	Analyst: HDJ	
Radium-226	-0.05	1.00	U	pCi/L	± 0.07	1	7/21/2023 9:43:00 AM
Yield	1					1	7/21/2023 9:43:00 AM
RAD226/228 RADIUM-228 (EPA 904.0)				E904.0	E903-904	Analyst: HDJ	
Radium-228	0.13	1.00	U	pCi/L	± 0.52	1	7/20/2023 3:16:00 PM
Yield	1					1	7/20/2023 3:16:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Manual Integration used to determine area response
	MC	Value is below Minimum Compound Limit.	N	Tentatively identified compounds
	ND	Not Detected	OG1	
	P	Second column confirmation exceeds	PL	Permit Limit



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66785

Sample ID: MB-66785	SampType: MBLK	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: PBW	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0						U
Yield	1.00			0	0						

Sample ID: LCS-66785	SampType: LCS	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: LCSW	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496563						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	4.19	1.00	5.000	0	83.8	70	130				
Yield	0.800			0	0						

Sample ID: RLC-66785	SampType: RLC	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: BatchQC	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496566						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.840	1.00	1.000	0	84.0	50	150				J
Yield	0.840			0	0						

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual Integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	OG1	P Second column confirmation exceeds
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit

Revision v1



Summit Environmental Technologies, Inc.
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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66785

Sample ID: RLCD-66785	SampType: RLC	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: BatchQC	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496567						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	4.24	1.00	1.000	0	424	50	150				S
Yield	0.890			0	0						

Sample ID: 23070127-001AMS	SampType: MS	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: BatchQC	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496568						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	2.57	1.00	5.000	0	51.4	70	130				S
Yield	0.970			1.000	0						

Sample ID: 23070149-001ADUP	SampType: DUP	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167598						
Client ID: BatchQC	Batch ID: 66785	TestNo: E904.0	E903-904	Analysis Date: 7/17/2023	SeqNo: 4496571						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0			0	0	20	U
Yield	1.00			0	0			0.9400	6.19		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



Summit Environmental Technologies, Inc.
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 Website: <http://www.settek.com>

QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66785

Sample ID: MB-66785	SampType: MBLK	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: PBW	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497012						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00									U
Yield	1.00										

Sample ID: LCS-66785	SampType: LCS	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: LCSW	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497013						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.08	1.00	5.000	0	102	70	130				

Sample ID: LCSD-66785	SampType: LCSD	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: LCSS02	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497014						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.20	1.00	5.000	0	104	70	130	5.080	2.33	20	

Sample ID: RLC-66785	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497016						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66785

Sample ID: RLC-66785	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497016						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.39	1.00	1.000	0	139	50	150				

Sample ID: RLCD-66785	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497017						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.05	1.00	1.000	0	105	50	150				

Sample ID: 23070127-001AMS	SampType: MS	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497018						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	6.10	1.00	5.000	0	122	70	130				

Sample ID: 23070149-001ADUP	SampType: DUP	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497021						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00						0	0	20	U

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66785

Sample ID: 23070149-001ADUP	SampType: DUP	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497021						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Yield	1.00							1.000	0	0	

Sample ID: 23070155-001ADUP	SampType: DUP	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/12/2023	RunNo: 167616						
Client ID: BatchQC	Batch ID: 66785	TestNo: E903.0	E903-904	Analysis Date: 7/18/2023	SeqNo: 4497023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00						0	0	20	U
Yield	1.00							1.000	0	0	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
 - J Analyte detected below quantitation limits
 - ND Not Detected
 - PL Permit Limit
 - E Value above quantitation range
 - M Manual Integration used to determine area response
 - OG1
 - R RPD outside accepted recovery limits
 - H Holding times for preparation or analy
 - MC Value is below Minimum Compound
 - P Second column confirmation exceeds
 - RL Reporting Detection Limit

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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: 23070477-010ADUP	SampType: DUP	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: 23062071-010	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497251						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.97	1.00		0	0			0	200	30	JR
Yield	1			0	0			1.000	0		

- Qualifiers:**
- B Analyte detected in the associated Method Blank
 - J Analyte detected below quantitation limits
 - ND Not Detected
 - PL Permit Limit
 - E Value above quantitation range
 - M Manual Integration used to determine area response
 - OG1
 - R RPD outside accepted recovery limits
 - H Holding times for preparation or analy
 - MC Value is below Minimum Compound
 - P Second column confirmation exceeds
 - RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: MB-66816	SampType: MBLK	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: PBW	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497240						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0						U
Yield	1.00			0	0						

Sample ID: LCS-66816	SampType: LCS	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: LCSW	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497241						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	6.04	1.00	5.000	0	121	70	130				QLR
Yield	1.00			0	0						

Sample ID: LCSD-66816	SampType: LCSD	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: LCSS02	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497242						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.64	1.00	5.000	0	72.8	70	130	6.040	49.6	20	R
Yield	1.00			0	0			1.000	0		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: RLC-66816	SampType: RLC	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: BatchQC	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497244						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00	1.000	0	54.0	50	150				
Yield	0.220			0	0						

Sample ID: 23070591-001AMS	SampType: MS	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: BatchQC	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497246						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	2.03	1.00	5.000	0.9200	22.2	70	130				S
Yield	0.640			0.7800	0						

Sample ID: 23070592-001ADUP	SampType: DUP	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167622						
Client ID: BatchQC	Batch ID: 66816	TestNo: E904.0	E903-904	Analysis Date: 7/20/2023	SeqNo: 4497249						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	0.760	1.00		0	0			0	200	20	JR
Yield	0.950			0	0			1.000	5.13		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: 23070477-010ADUP	SampType: DUP	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: 23062071-010	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497507						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	0.12	1.00						0	0	30	U
Yield	0.99							1.000	1.01	0	

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual Integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	OG1	P Second column confirmation exceeds
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: MB-66816	SampType: MBLK	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: PBW	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497498						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	ND	1.00									U
Yield	1.00										

Sample ID: LCS-66816	SampType: LCS	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: LCSW	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497499						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	6.33	1.00	5.000	0	127	70	130				

Sample ID: LCSD-66816	SampType: LCSD	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: LCSS02	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497500						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	5.86	1.00	5.000	0	117	70	130	6.330	7.71	20	

Sample ID: RLC-66816	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: BatchQC	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 66816

Sample ID: RLC-66816	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: BatchQC	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497502						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.41	1.00	1.000	0	141	50	150				

Sample ID: RLCD-66816	SampType: RLC	TestCode: Radium-226_	Units: pCi/L	Prep Date: 7/13/2023	RunNo: 167641						
Client ID: BatchQC	Batch ID: 66816	TestNo: E903.0	E903-904	Analysis Date: 7/21/2023	SeqNo: 4497503						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-226	1.00	1.00	1.000	0	100	50	150				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 67186

Sample ID: MB-67186	SampType: MBLK	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/25/2023	RunNo: 168446						
Client ID: PBW	Batch ID: 67186	TestNo: E904.0	E903-904	Analysis Date: 8/2/2023	SeqNo: 4522176						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0						U
Yield	0.780			0	0						

Sample ID: LCS-67186	SampType: LCS	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/25/2023	RunNo: 168446						
Client ID: LCSW	Batch ID: 67186	TestNo: E904.0	E903-904	Analysis Date: 8/2/2023	SeqNo: 4522177						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.56	1.00	5.000	0	71.2	70	130				
Yield	1.00			0	0						

Sample ID: LCSD-67186	SampType: LCSD	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/25/2023	RunNo: 168446						
Client ID: LCSS02	Batch ID: 67186	TestNo: E904.0	E903-904	Analysis Date: 8/2/2023	SeqNo: 4522178						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	4.06	1.00	5.000	0	81.2	70	130	3.560	13.1	20	
Yield	1.00			0	0			1.000	0		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 67186

Sample ID: RLC-67186	SampType: RLC	TestCode: Radium-228_ Units: pCi/L				Prep Date: 7/25/2023	RunNo: 168446				
Client ID: BatchQC	Batch ID: 67186	TestNo: E904.0		E903-904	Analysis Date: 8/2/2023	SeqNo: 4522180					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00	1.000	0	51.0	50	150				
Yield	0.640			0	0						

Sample ID: 23071399-001AMS	SampType: MS	TestCode: Radium-228_ Units: pCi/L				Prep Date: 7/25/2023	RunNo: 168446				
Client ID: BatchQC	Batch ID: 67186	TestNo: E904.0		E903-904	Analysis Date: 8/2/2023	SeqNo: 4522182					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.73	1.00	5.000	0	74.6	70	130				
Yield	0.860			1.000	0						

Sample ID: 23071400-001ADUP	SampType: DUP	TestCode: Radium-228_ Units: pCi/L				Prep Date: 7/25/2023	RunNo: 168446				
Client ID: BatchQC	Batch ID: 67186	TestNo: E904.0		E903-904	Analysis Date: 8/2/2023	SeqNo: 4522185					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	3.28	1.00		0	0			2.950	10.6	20	
Yield	1.00			0	0			1.000	0		

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	OG1		P	Second column confirmation exceeds
PL	Permit Limit	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Revision v1



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QC SUMMARY REPORT

WO#: 23070477
 09-Aug-23

Client: TEKLAB Inc,
Project: 23062071

BatchID: 67186

Sample ID: 23071401-001ADUP	SampType: DUP	TestCode: Radium-228_	Units: pCi/L	Prep Date: 7/25/2023	RunNo: 168446						
Client ID: BatchQC	Batch ID: 67186	TestNo: E904.0	E903-904	Analysis Date: 8/2/2023	SeqNo: 4522187						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Radium-228	ND	1.00		0	0			0	0	20	U
Yield	1.00			0	0			1.000	0		

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analy
	J Analyte detected below quantitation limits	M Manual Integration used to determine area response	MC Value is below Minimum Compound
	ND Not Detected	OG1	P Second column confirmation exceeds
	PL Permit Limit	R RPD outside accepted recovery limits	RL Reporting Detection Limit

Revision v1

TEKLAB, INC. Chain of Custody

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

23070477

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

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Project# 23062071
Cooler Temp: _____
Sampler: _____
QC Level: 3

Contact: Elizabeth Hurley Email: ehurley@teklabinc.com
Requested Due Date: 20 business days or less Billing/PO: 84627
Phone: 618-344-1004 ext. 33
State of Origin: MO IL

Comments: **Please issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) by method EPA903.0/904.0
on standard TAT Please include negative values (no ND).
Batch QC and CCR EDD are required. Receipt summary requested.

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

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium	CPM
	23062071-001	6/26/23 9:00	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	31, 36
	23062071-002	6/26/23 12:10	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	33, 28
	23062071-003	6/26/23 14:15	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	32, 26
	23062071-004	6/26/23 15:20	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	43, 47
	23062071-005	6/26/23 17:00	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	29, 27
	23062071-006	6/26/23 18:45	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	32, 32
	23062071-007	6/27/23 9:10	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	28, 31
	23062071-008	6/27/23 10:35	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	41, 16
	23062071-009	6/27/23 12:15	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	18, 21
	23062071-010	6/27/23 14:10	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	33, 43
	23062071-011	6/27/23 15:20	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	19, 12

Reinquished By: Elizabeth Hurley Date/Time: 6/28/23
Received By: Elizabeth Hurley Date/Time: 6/28/23 1:30
20,700 = 20.7 Fedex code

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

TEKLAB, INC. Chain of Custody

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

23070477

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

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Project#: 23062071

Cooler Temp: _____ Sampler: _____ QC Level: 3

Comments: **Please issue reports and invoices via email only**
Please analyze for Radium (226, 228, and combined) by method EPA903.0/904.0
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Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Radium 226	Radium 228	Combined Radium	PH	CPM
	23062071-012	6/27/23 16:30	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7.11	31, 32
	23062071-013	6/27/23 17:35	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7.11	28, 27
	23062071-014	6/27/23 0001	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7.11	35, 31
	23062071-015	6/27/23 0002	HNO3	Groundwater	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	7.11	36, 28

Relinquished By: *Elizabeth Hurley* Date/Time: 6/28/23

Received By: _____ Date/Time: _____



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

Sample Log-In Check List

Client Name: **TEK-IL-62234-A**

Work Order Number: **23070477**

RcptNo: **1**

Logged by:	Anthony W. Britton	7/7/2023 1:30:00 PM	<i>Anthony Britton</i>
Completed By:	Jacqueline Rasile	7/11/2023 12:09:49 AM	<i>Jacqueline Rasile</i>
Reviewed By:	Jennifer Woolf	7/12/2023 10:24:31 AM	<i>Jennifer Woolf</i>

Chain of Custody

- Were seals intact? Yes No Not Present
- Is Chain of Custody complete? Yes No Not Present
- How was the sample delivered? FedEx

Log In

- Coolers are present? Yes No NA
- Was an attempt made to cool the samples? Yes No NA
- Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- Sample(s) in proper container(s)? Yes No
- Sufficient sample volume for indicated test(s)? Yes No
- Are samples (except VOA and ONG) properly preserved? Yes No
- Was preservative added to bottles? Yes No NA
- Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
- Were any sample containers received broken? Yes No
- Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes No
- Are matrices correctly identified on Chain of Custody? Yes No
- Is it clear what analyses were requested? Yes No
- Were all holding times able to be met?
(If no, notify customer for authorization.) Yes No

Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

- Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	20.7	Good	Not Present			