



GROUNDWATER AND SURFACE WATER MONITORING DATA RELEASE 2020 SAMPLING EVENT SHALLOW LAND DISPOSAL AREA FUSRAP SITE

U.S. Army Corps of Engineers
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Pittsburgh District

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Formerly Utilized Sites Remedial Action Program (FUSRAP)

FUSRAP was initiated in 1974 to identify, investigate, and if necessary, cleanup or control sites throughout the United States that were part of the Nation's early atomic weapons and energy programs during the 1940s, 1950s, and 1960s. When implementing FUSRAP, the United States Army Corps of Engineers (USACE) follows the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The USACE is the lead federal agency under FUSRAP remediating the Shallow Land Disposal Area (SLDA) site.

Site Description

The SLDA is located in Parks Township, Armstrong County, Pennsylvania, about 23 miles (37 kilometers) east-northeast of Pittsburgh, Pennsylvania (Figure 1). The 44-acre (18-hectare) site is predominantly an open field partially bordered by woodland. Ten (10) disposal trenches were excavated in the overburden soils and together encompass approximately 1.2 acres (0.49 hectares); the trenches are separated geographically into the Trench 1 through 9 area (or the upper trench area) and Trench 10 (the lower trench area). Site topography declines approximately 115 feet (35 meters) from the southeast to northwest, or from Trenches 1 through 9 toward Trench 10 (Figure 2). The depths of the upper trenches vary between 10 and 15 feet, whereas Trench 10 varies up to 20 feet in depth.

The upper trench area is underlain by up to 20 feet of native silty soils that blanket the following four groundwater-bearing bedrock zones:

- First Shallow Bedrock - averages 13 feet in thickness between elevation 881 and 894 feet,
- Second Shallow Bedrock - averages 14-feet in thickness between elevation 856 and 870 feet,
- Upper Freeport Coal – averages 4 feet in thickness between elevations 832 and 836 feet and was subjected to room and pillar mining (now exhibits open-channel flow), and
- Deep Bedrock Zone - averages about 36 feet in thickness between elevations 757 and 793 feet.

In the Trench 10 area, the Freeport coal seam was strip mined and the general area backfilled with approximately 22

feet of shale rock spoils. Figure 3 presents a generalized northwest to southeast geologic cross section through the site to depict these site entities and groundwater zones.

Groundwater under the upper trench area flows predominantly in the following directions in each layer:

- North to northwesterly in the soil layer (Figure 4),
- North to northeasterly in the first shallow bedrock zone (Figure 5),
- Both northeasterly and southwesterly in the second shallow bedrock zone (Figure 6) due to a flow divide under the site,
- Southerly and southeasterly in the Freeport Coal (Figure 7), and
- Southwesterly in the deep bedrock zone (Figure 8).

Groundwater surrounding Trench 10 appears to enter the Upper Freeport Coal seam, which generally drains to the south and west (Figure 7). These flow observations contrast from previous sampling events which groundwater in the Upper Freeport Coal Zone drained predominantly to the south.

The site is drained by a small ephemeral stream identified as Dry Run (Figure 2). A portion of the flow in Dry Run infiltrates into the coal mine spoils near Trench 10 and then the abandoned coal mines that underlie most of the site (see Figure 2-14 in USACE 2005). The balance of flow in Dry Run continues northwest into the Kiskiminetas River.

Land use surrounding the SLDA site consists of medium-sized residential communities and individual rural residences, small farms with croplands and pastures, idle farmland, forestlands, and light industrial areas. The closest community is Kiskimere, which is adjacent to and to the south of the SLDA; some residences are located within several hundred feet of the SLDA.

Previous Groundwater Monitoring Results

A series of non-USACE groundwater monitoring actions began in 1981 and led to a quarterly monitoring program that ceased in 2000; the USACE initiated site activities in 2002. The historical and USACE-generated data are summarized in the Remedial Investigation (RI) performed by the USACE (USACE 2005).

Groundwater sampling conducted by the USACE during the RI included the following radionuclides:

- Radium-228
- Uranium-234, -235, -238
- Thorium-228, -232
- Plutonium-239,-241
- Americium-241

In addition, 10% of the RI samples were analyzed for cesium-137, cobalt-60, thorium-230, radium-226, plutonium-238, -240, -242, and gross alpha and beta. The RI sampling of groundwater indicated that FUSRAP-related constituents were not a threat to human health and the environment (USACE 2005).

From April to December 2011 (during the initial remedial action), groundwater was sampled monthly at 14 locations for the following constituents: isotopic uranium (U-234, -235, -238), isotopic thorium (Th-228, -232), radium-228, plutonium-239 and -241, americium-241, total uranium, target analyte list (TAL) metals (plus molybdenum), anions, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total organic carbon, and total dissolved solids. The radiological and metals analyses include both unfiltered and filtered samples. These sampling results were consistent with the RI sampling (i.e., FUSRAP-related radiologic constituents are not a risk to

groundwater at the SLDA). This monitoring effort was suspended in 2012 due to a remediation hiatus and will re-initiate once remediation recommences; the 2011 data are presented in the 2013 groundwater sampling report (USACE 2014).

Annual Sampling Program Purpose

The groundwater monitoring plan that was developed in 2013 is used to guide annual sampling activities through the completion of the remedial action (USACE 2013). The overarching objective of the sampling effort is to ensure the protection of human health and the environment from FUSRAP-related constituents of concern at the SLDA site. The USACE plan delineated an optimal monitoring program to detect the potential for off-site migration, specifically towards the Kiskimere community.

The goals of the groundwater monitoring program include:

- Specific analytical parameters for collected samples (Table 1)
- Identification of the locations to be sampled (Table 2)
- Identification of the sampling frequency (i.e., annual sampling)

This sampling program was developed in consultation with the U.S. Environmental Protection Agency (USEPA), who independently sampled on-site and nearby wells through 2017; the agency ceased sampling since the USEPA and USACE data are comparable.

Sampling Scope

Annual groundwater and surface water monitoring for 2020 at the SLDA was conducted between October 5 and October 9, 2020. Twenty-one (21) groundwater locations were sampled and generally lie between the 10 trenches and the neighboring residences (Figure 9). Two (2) surface-water locations were sampled to verify the protection of human health and the environment (Figures 9 and 10). Ten (10) wells planned for sampling were either dry or did not yield adequate sampling volumes, which were then substituted with three (3) other wells to maximize the sampling program. Table 1 lists the constituents analyzed and Table 2 lists the planned locations, along with well substitutions. The constituents listed in Table 1 are a subset of the analytes sampled during the RI and remedial action; this annual sampling program focuses on site contaminants specifically listed in the record of decision (ROD) (USACE 2007), as amended (USACE 2015).

Static water levels from all site wells were recorded synchronously to the nearest 0.01 foot to determine whether adequate volumes were available for sampling and to confirm groundwater flow directions. These measurements are listed in Table 3; wells omitted from this list were either decommissioned during remedial action or previously damaged (unreliable). Figures 4 through 8 graphically present the groundwater elevation data and inferred flow directions for the five water bearing zones underlying the SLDA.

Low-flow sampling techniques consistent with USEPA guidance (Puls and Barcelona 1996) and the Department of Defense (DoD) (DoD 2013) were utilized for the groundwater and surface water sampling. Prior to sampling, groundwater wells were purged until the following field parameters stabilized according to the sampling plan: temperature, pH, specific conductance, oxidation-reduction potential (ORP), turbidity, and dissolved oxygen. These data are listed in Table 4.

Both unfiltered (total fraction) and field-filtered (dissolved fraction) groundwater samples were obtained where well yield allowed; MW-05 and MW-47 did not yield enough water to collect filtered metal and filtered radionuclide

samples. Filtered samples were collected by utilizing a disposable 0.45 micron in-line filter. Field duplicates provided quality control samples, which were collected at a rate of approximately one duplicate for every ten regular samples.

Samples were packaged according to standard practices and shipped to DoD Environmental Laboratory Accreditation Program (ELAP) accredited laboratories. Laboratory data were reviewed and qualified per laboratory performance quality indicators, the applicable laboratory and method criteria, and the DoD Quality Systems Manual.

The sampling task produced investigation derived waste (IDW) that consisted of solids and liquids. The solid IDW generated from groundwater sampling and decontamination activities (i.e., personal protective equipment, sample tubing, etc.) was assessed for radioactivity and either disposed of as general trash or retained on site for disposition. The liquid IDW consisted of purge water that was containerized on site for future disposition.

Sampling Results

Figures 9 and 10 highlight the on-site groundwater wells and on-site and off-site surface water locations that were sampled in 2020; Tables 5 and 6 list the unfiltered (total) and filtered (dissolved phase) analytical results for all groundwater and surface water sampling events for comparison. Tables 7 and 8 present a summary of all groundwater (2003-2020) and surface water (2004-2020) sampling results, comparative drinking water standards, and up-gradient groundwater values for radionuclides derived during the USACE RI. The 2020 analytical results are consistent with past sampling and select wells and surface water locations exhibit unique values for some analytes relative to the overall dataset; these are discussed below.

Metals Data:

The site-wide ranges of the 2020 data generally fall within the historical site ranges. The following metals in groundwater and/or surface water exceeded their respective water quality standards in 2020 (Tables 5):

- Aluminum
- Arsenic
- Beryllium
- Chromium
- Iron
- Manganese

The site-wide average values for aluminum, iron, and manganese in groundwater and surface water exceed the primary or secondary drinking water standards (Tables 7 and 8) due to natural conditions, such as the naturally low-oxygen or reducing conditions in the coal mine and deep groundwater zones below the coal mine.

In 2020, arsenic in MW-22 (deep zone) exceeded the MCL; this reflects previous values seen in these wells. The reducing conditions in these groundwater zones commonly solubilize such metals from natural minerals, which are persistent in the historic data ranges. Additionally, MCLs for arsenic, beryllium, and chromium were exceeded in on-site groundwater wells MW-22, MW-39, and MW-05, respectively (Table 5). The site-wide averages for arsenic, beryllium, and chromium fall below their respective drinking water standards (Table 7). Though there is no defined MCL, increased sodium results were exhibited in on-site groundwater well MW-40 and increased calcium results were exhibited in on-site groundwater well MW-22. In 2020, the MCLs for aluminum, iron, and/or manganese were in on-site and/or off-site surface water (Table 5); this is consistent with historical data ranges.

Radionuclides:

The ranges of radionuclide results for 2020 groundwater and surface water sampling event are generally consistent with past sampling data. No radionuclides exceed the drinking water standards, as listed in Tables 6, 7, and 8. Table 7 shows the 2020 data generally reflect natural background ranges or are well below the drinking water standards. However, as indicated in the 2019 sampling report, well MW-45 exhibited an increased result that is derived from the highly turbid (cloudy) samples obtained from that well in 2019. The uranium increase occurs when cloudy samples

are placed in acid-preserved laboratory containers, where natural metals are dissolved from the soil particles and liberated into solution (the analyzed water). This well was not sampled in 2020 as it was dry but will be sampled in 2021 for both unfiltered and filtered radionuclides to verify whether the observed result is a turbidity artifact or reflects changes in groundwater conditions.

Conclusions

The 2020 USACE sampling shows that radionuclides are present in site groundwater and on-site and off-site surface water at concentrations indicative of background and well below USEPA MCLs or dose-based drinking water standards. Sampling results for metals show select constituents are above drinking water standards, primarily in the coal mine and deeper water-bearing zones. Other exceptions for metals vary throughout the hydrogeologic zones at the site and do not indicate a contiguously contaminated zone. The overall sampling results are consistent with past USACE findings that indicate no FUSRAP-related radionuclides exceed the USEPA MCLs or dose-based drinking water standards.

References

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TABLES

Table 1. Site Monitoring Program and Analytical Methods

Analyte	Fraction	Method
Target Analyte List (TAL) Metals	Filtered and Unfiltered	EPA 6020, Inductively Coupled Plasma Mass-Spectrometry (ICPMS)
Total Uranium	Filtered and Unfiltered	ASTM D5174, Trace Uranium by Pulsed-Laser Phosphorimetry
Thorium-228 Thorium-230 Thorium-232 Plutonium-238 Plutonium-239/240 Americium-241	Filtered and Unfiltered	Alpha Spectrometry
Plutonium-241	Filtered and Unfiltered	Liquid Scintillation

Table 2. Shallow Land Disposal Area FUSRAP Site Groundwater Monitoring Well Summary (2020)

Well/Location	Top of Casing Elevation (ft AMSL)	Zone	Up (U) or Down (D) Gradient from Disposal Areas	Monitoring Activity			Rationale
				Water Level	Unfiltered GW	Filtered GW	
02U11	925.99	OB	D	X			Water Levels
02U13	923.45	OB	D	X			Water Levels
03U05	924.1	OB	D	X			Water Levels
05U07	935.1	OB	U	X			Water Levels
06U05	941.26	OB	D	X			Water Levels
08U04	938.94	OB	D	X			Water Levels
08U05	940.93	OB	D	X			Water Levels
09U07	927.69	OB	D	X			Water Levels
10L31	859.84	UF	U	X	X	X	Trench Containment Verification
10L32	848.69	UF	U	X			Water Levels
MW-01	845.79	UF	U	X	◇	◇	Water Levels
MW-02	884.22	DB	U	X			Water Levels
MW-02A	885.43	UF	D	X	X	X	Trench Containment Verification
MW-03	890.5	UF	D	X	NS	NS	Trench Containment Verification
MW-04	NA	UF	D	X			Water Levels
MW-05	865.49	UF	U	X	X	NS	Trench Containment Verification
MW-07	921.52	1S	U/cross gradient	X	X	X	Trench Containment Verification
MW-08	931.77	1S	U	X	X	X	Trench Containment Verification
MW-09A	945.45	1S	U	X	X	X	Trench Containment Verification
MW-11D	909.8	2S	D	X			Water Levels
MW-11S	909.27	OB	D	X			Water Levels
MW-12D	919.31	1S	D	X			Water Levels
MW-13	948.68	1S	U	X	X	X	Trench Containment Verification
MW-14	947.33	1S	U	X	X	X	Trench Containment Verification
MW-15	940.31	1S	U	X	X	X	Trench Containment Verification
MW-17	913.71	2S	D	X			Water Levels
MW-19	861.45	DB	U	X			Water Levels
MW-20	889.87	UF	D	X	NS	NS	Trench Containment Verification
MW-21	888.32	UF	D	X	NS	NS	Trench Containment Verification
MW-22	893.41	DB	D	X	X	X	Trench Containment Verification
MW-25	910.07	1S	D	X			Water Levels
MW-26	919.56	1S	D	X			Water Levels
MW-27	929.99	1S	D	X			Water Levels
MW-29	912.53	1S	D	X			Water Levels
MW-32	925.89	1S	U	X	NS	NS	Trench Containment Verification
MW-33	940.76	2S	U	X	X	X	Trench Containment Verification
MW-34A	926.84	DB	D	X	NS	NS	Trench Containment Verification
MW-35	913.68	DB	U	X			Water Levels
MW-37	926.58	2S	D	X			Water Levels

Well/Location	Top of Casing Elevation (ft AMSL)	Zone	Up (U) or Down (D) Gradient from Disposal Areas	Monitoring Activity			Rationale
				Water Level	Unfiltered GW	Filtered GW	
MW-38	943.81	1S	U	X			Water Levels
MW-39	891.99	UF	D	X	X	X	Trench Containment Verification
MW-40	939.63	DB	D	X	X	X	Trench Containment Verification
MW-41	912.86	1S	D	X			Water Levels
MW-42	916.5	1S	D	X			Water Levels
MW-43	916.32	2S	D	X			Water Levels
MW-44	930.98	1S	D	X	Ø	Ø	Water Levels
MW-45	929.9	2S	U	X	NS	NS	Trench Containment Verification
MW-46	924.18	UF	D	X	NS	NS	Trench Containment Verification
MW-47	925.18	OB	U	X	X	NS	Trench Containment Verification
MW-50	902.02	1S	D	X			Water Levels
MW-51	925.43	1S	D	X	Ø	Ø	Water Levels
MW-52	924.73	2S	U	X	X	X	Trench Containment Verification
MW-53	925.34	2S	D	X			Water Levels
MW-58	838.93	DB	U	X			Water Levels
MW-59	932.45	OB	U	X	Ø	Ø	Water Levels
MW-61	932.49	2S	U	X	NS	NS	Trench Containment Verification
MW-62	926.22	UF	D	X			Water Levels
MW-64	946.5	OB	U	X			Water Levels
MW-69	947.43	OB	U	X			Water Levels
MW-74	925.3	OB	U	X			Water Levels
MW-80	916.07	1S	D	X			Water Levels
MW-81	898.22	1S	D	X			Water Levels
MW-82	921.22	1S	D	X			Water Levels
MW-83	916.03	OB	D	X			Water Levels
MW-84	923.36	1S	D	X			Water Levels
MW-86	928.02	1S	D	X			Water Levels
PZ-01	907.53	OB	D	X	Ø	Ø	Water Levels
PZ-02	913.49	OB	D	X			Water Levels
PZ-03A	920.72	OB	D	X			Water Levels
PZ-04	920.85	OB	D	X			Water Levels
PZ-05	929.78	OB	D	X			Water Levels
PZ-06A	943.23	OB	D	X			Water Levels
PZ-07	942.67	OB	U	X			Water Levels
PZ-08	933.31	OB	U	X			Water Levels
PZ-09	938.49	OB	U	X	X	X	Trench Containment Verification
TPZ-01	924.3	1S	U	NM			Water Levels
TPZ-02	926.38	1S	U	NM			Water Levels
TPZ-03	895.5	1S	D	X			Water Levels
TPZ-04	914.09	1S	D	X			Water Levels
TPZ-05	916.51	1S	D	X			Water Levels

Well/Location	Top of Casing Elevation (ft AMSL)	Zone	Up (U) or Down (D) Gradient from Disposal Areas	Monitoring Activity			Rationale
				Water Level	Unfiltered GW	Filtered GW	
TPZ-06	907.77	OB	D	X			Water Levels
TPZ-07	917.35	OB	D	X			Water Levels
TPZ-08	924.45	OB	D	X			Water Levels

Notes:

ft AMSL

feet above mean sea level

GW

Groundwater

OB

Overburden

1S

First Shallow Bedrock Zone

2S

Second Shallow Bedrock Zone

◊

Water-level Well Sampled as a Replacement for Dry or Non-producing Trench Containment Well

UF

Upper Freeport Coal

DB

Deep Bedrock Zone

NA

Data Not Available

NS

Not Sampled (Dry/Non-producing Well)

NM

Not Measured (Off-site Location)

Table 3. 2020 SLDA Groundwater Levels

Well ID	Date	Depth to Water	Depth to Bottom from TOC	New Remarks
01U17	5-Oct-20	Dry	12.7	Total Depth: 15.98, No well cap, No label, No outer casing, Good condition
03U05	5-Oct-20	--	10.5	Not located during sampling event (possibly removed during early restoration)
06U05	5-Oct-20	11.89	14	No pad, No label, Good condition
08U04	5-Oct-20	--	14	Obstruction at 4 ft from TOC, No well cap, No label
10L31	5-Oct-20	23	0	Total Depth (ft,TOC): 25.23, No pad, No well cap, Good condition
10L32	5-Oct-20	11.24	0	Total Depth (ft,TOC): 12.50, No pad, Good condition
MW-01	5-Oct-20	8.17	21	Good condition
MW-02	5-Oct-20	79.32	89	Good condition
MW-02A	5-Oct-20	47.1	50	Good condition
MW-03	5-Oct-20	Dry	52.5	Good condition
MW-05	5-Oct-20	26.79	26	Good condition
MW-07	5-Oct-20	33.13	33	Good condition
MW-08	5-Oct-20	14.7	34	Good condition
MW-09A	5-Oct-20	21.34	41	Good condition
MW-11D	5-Oct-20	Dry	42	Total Depth (ft,TOC): 40.46, Good condition
MW-11S	5-Oct-20	Dry	13	Total Depth (ft,TOC): 12.11, Good condition
MW-12D	5-Oct-20	--	32.5	Not located during sampling event (possibly removed during early restoration)
MW-13	5-Oct-20	23.76	41	Good condition
MW-14	5-Oct-20	16.22	32	Pad slightly heaved, Good condition
MW-15	5-Oct-20	15.23	30	Pad heaved, Animal burrow beneath pad, Good condition
MW-17	5-Oct-20	42.32	79	Good condition
MW-19	5-Oct-20	58.8	125.5	Good condition
MW-20	5-Oct-20	Dry	52.5	Total Depth (ft,TOC): 51.91, Pad cracked, Good condition
MW-21	5-Oct-20	Dry	47.5	Total Depth (ft,TOC): 50.75, Pad cracked, Good condition
MW-22	5-Oct-20	90.78	111	Pad slightly cracked, Good condition
MW-25	5-Oct-20	19.88	35	Good condition
MW-26	5-Oct-20	30.49	36	No pad observed, Good condition
MW-27	5-Oct-20	33.73	35	Good condition
MW-29	5-Oct-20	20.61	36	Cracked pad, Rusted outer casing, Faded label, No lock
MW-32	5-Oct-20	Dry	63	Total Depth (ft,TOC): 26.40, Pad slightly cracked, Good condition
MW-33	5-Oct-20	56.74	82	Good condition
MW-34A	5-Oct-20	Dry	190	Total Depth (ft,TOC): 100.60, Good condition
MW-35	5-Oct-20	113.07	170	Rusted outer casing, Faded label, No lock
MW-37	5-Oct-20	Dry	75	Total Depth (ft,TOC): 69.14, Cracked outer casing lid, Good condition
MW-38	5-Oct-20	40.93	77.5	Pad buried, Good condition
MW-39	5-Oct-20	55.59	60.5	Pad buried, Good condition
MW-40	5-Oct-20	123.46	191.5	Pad buried, Good condition
MW-41	5-Oct-20	22.78	40	No lock, Fading label, Good condition
MW-42	5-Oct-20	26.87	50	Pad slightly cracked, Good condition
MW-43	5-Oct-20	40.41	55	No pad, Good condition
MW-44	5-Oct-20	42.67	60	Good condition
MW-45	5-Oct-20	Dry	80	No lock, No Pad, Faded label, Good condition
MW-46	5-Oct-20	Dry	93	Good condition
MW-47	5-Oct-20	17.5	17.8	Damaged about 18" down by frost (USACE note)
MW-50	5-Oct-20	Dry	35.1	No pad, Faded label, No lock, Good condition
MW-51	5-Oct-20	33.53	36	No pad, Pinch in casing approximately 1 (ft,TOC)
MW-52	5-Oct-20	36.77	44.5	No lock, No Pad, Rusted outer casing, No label, Good condition
MW-53	5-Oct-20	53.1	71	No pad, Good condition
MW-58	5-Oct-20	7.71	81.2	No pad, Good condition
MW-59	5-Oct-20	10.05	14	Good condition
MW-61	5-Oct-20	Dry	65.5	Good condition
MW-62	5-Oct-20	89.07	88	No lock, Pad broken, Rusted outer casing, faded label, Good condition
MW-64	5-Oct-20	15.44	20	No lock, No concrete pad, Rusted outer casing, No label, Not well grouted in place
MW-69	5-Oct-20	16.34	20	Flush mount, No pad, No label, Good condition
MW-74	5-Oct-20	Dry	14	Total Depth (ft, TOC): 15.23, No lock, No pad, Rusted outer casing, No label, Good condition
MW-80	5-Oct-20	28.31	36.5	Slightly rusted, Faded label, Old master lock, Good condition
MW-81	5-Oct-20	9.75	13	Old master lock, No label, Good condition
MW-82	5-Oct-20	30.14	35.5	Good condition
MW-83	5-Oct-20	48.63	69	Old master lock, Faded label, Slightly rusted, Good condition

Well ID	Date	Depth to Water	Depth to Bottom from TOC	New Remarks
MW-84	5-Oct-20	35.43	36.5	Good condition
MW-86	5-Oct-20	Dry	36	Total Depth (ft, TOC): 38.35, Good condition
PZ-01	5-Oct-20	16.33	18	No lock, Faded label, Good condition
PZ-02	5-Oct-20	19.43	18	No lock, Rusted outer casing, Faded label No pad
PZ-03A	5-Oct-20	--	18	Not located during sampling event (possibly removed during early restoration)
PZ-05	5-Oct-20	19.68	19	Good condition
PZ-06A	5-Oct-20	9.7	20	Good condition
PZ-07	5-Oct-20	9.49	20	Good condition
PZ-08	5-Oct-20	11.52	18	No lock, Rusted outer casing, Faded label, Good condition
PZ-09	5-Oct-20	12.15	18	Good condition
TPZ-01	5-Oct-20	--	11.5	Not Measured - Off-site Location (USACE note), Good condition
TPZ-02	5-Oct-20	--	11.5	Not Measured - Off-site Location (USACE note), Casing bent, No PVC cap
TPZ-03	5-Oct-20	9.71	11.5	No pad, No label, Good condition
TPZ-04	5-Oct-20	22.57	26	No pad, No label, Good condition
TPZ-05	5-Oct-20	21.05	31	DTW measured feet below ground surface, PVC cut at ground surface, No lock, No outer casing

Table 4. Groundwater and Surface Water Sampling Field Data (2020)

Well ID	Collect Date	Temperature (F)	pH (standard unit)	ORP (mV)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Purge Rate (mL/min)	Comments
10L31	7-Oct-20	58.2	6.49	9.3	0.486	0.9	2.75	150	Sample Time: 1440
MW-01	7-Oct-20	60.6	6.05	80.5	0.378	4.1	1.79	200	Sample Time: 1428
MW-02A	8-Oct-20	56.5	6.37	59.1	0.285	0.6	3.04	115	Sample Time: 1224. Well went dry while collecting filtered sample. Returned at 1610 to complete sample.
MW-03	8-Oct-20	--	--	--	--	--	--	--	Water Level: 52.98. Total Depth: 53.17. Dry.
MW-05	7-Oct-20	61.9	6.12	78.8	0.478	6.2	4.47	100	Sample Time: 1450. Reset flow through cell at 1525. Returned 9-Oct-2020 at 0857 DTW(ft, btoc): 27.05. 9-Oct-2020 - Insufficient volume for field filter sample.
MW-07	9-Oct-20	56.3	6.47	73.3	0.379	0.8	1.60	360	Sample Time: 1056
MW-08	6-Oct-20	59.1	7.23	-57.8	0.269	4.5	5.50	150	Sample Time: 1607
MW-09A	7-Oct-20	59.7	6.97	-49	0.271	14.7	4.70	130	Sample Time: 1237. Between 1122-1127, empty (reset flow through cell (leaks))
MW-13	7-Oct-20	58.7	7.27	-57.9	0.227	2.6	0.25	250	Sample Time: 1213
MW-14	7-Oct-20	60.0	6.48	-26.3	0.281	22.6	8.29	160	Sample Time: 1035. Water level below bottom of peristaltic tubing, CEC replaced tubing set at 29.0(ft,btoc)
MW-15	6-Oct-20	59.1	6.15	14.6	0.179	9.5	0.61	150	Sample Time: 1111
MW-20	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-21	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-22	8-Oct-20	53.9	6.33	-24	2.165	170.0	1.87	200	Sample Time: 1115
MW-32	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-33	6-Oct-20	59.6	7.21	42.2	0.830	6.0	2.40	130	Sample Time: 1617. Initial 1521-1527 - poor seal on flow-through cell, reset cell.
MW-34A	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-39	8-Oct-20	52.9	3.61	176.3	0.805	542.0	4.29	Bailer	Insufficient head to sample w/bladder pump. 8-Oct-2020 1030 bail 3 well vol (1.5 gal). Returned to sample 9-Oct-2020 at 0925
MW-40	6-Oct-20	57.7	8.85	20.2	1.388	6.6	0.50	360	Sample Time: 1450
MW-44	9-Oct-20	69.5	7.49	-53.7	0.404	21.7	1.89	60	Sample Time: 1245. TD=54.13. Batteries changed.
MW-45	9-Oct-20	--	--	--	--	--	--	--	Dry. No Sample. Missing lock and faded label.
MW-46	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-47	8-Oct-20	59.3	4.79	162.8	0.149	177.0	4.44	110	Returned to MW47 at 1010. Returned at 1305 - enough volume to complete unfiltered set, insufficient volume for filtered.
MW-50	8-Oct-20	--	--	--	--	--	--	--	Dry
MW-51	8-Oct-20	53.2	6.40	88.4	0.718	88.8	3.30	Sample	Well volume (gal) - 0.41. Volume removed (gal) - 1.5.
MW-52	8-Oct-20	55.5	6.75	83.7	0.835	36	2.34	--	TD=44.53, 2" well. 1 well vol = 1.26 gal. 3 well vol = 3.8 gal. Bailed 4.0 gal.
MW-53	9-Oct-20	56.17	6.88	90.7	0.96	37.9	0.99	150	Not Sampled
MW-59	9-Oct-20	64.9	4.44	113	0.138	4.5	0.92	150	Sample Time: 1502
MW-61	8-Oct-20	--	--	--	--	--	--	--	Dry
PZ-01	8-Oct-20	59.0	5.83	66.4	0.358	9.6	0.55	150	Sample Time: 1449
PZ-09	6-Oct-20	64.4	4.90	190.9	0.114	7.5	3.03	145	Sample Time: 1232
SP-DR-01	7-Oct-20	64.2	7.25	15.3	0.230	12.6	9.50	--	Sample Time: 1320 (On-site surface water location)
WS-CR-06	7-Oct-20	59.42	7.04	98.1	0.445	3.4	9.8	--	Sample Time: 1605 (Off-site surface water location)

Maximum	69.5	8.9	191	2.165	542.0	9.8	360.0
Minimum	52.9	3.6	-58	0.114	0.6	0.3	60.0
Average	59.2	6.4	50	0.532	49.6	3.3	169.5
Geometric Mean	59.0	6.3	--	0.402	--	2.3	155.5

NOTES:

Temperature (F) - Degrees Fahrenheit

Specific Conductance (mS/cm) - millisiemens per centimeter

ORP (mV) - Oxidation Reduction Potential in millivolts

Turbidity (NTU) - Nephelometric Turbidity Units

Purge Rate (mL/min) - milliliters per minute ("Pump Max" reflects maximum peristaltic rate of approximately 0.4 gallons [1.5 liters] per minute)

Table 5. Comprehensive Metals Sampling Results at SLDA

Well	Year	ALUMINUM	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CALCIUM	CHROMIUM, TOTAL	COBALT	COPPER	IRON	LEAD	MAGNESIUM	MANGANESE	MERCURY	NICKEL	POTASSIUM	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
10L31	2013	0.01 J	0.00052 U	0.00061 U	0.039	0.0005 U	0.00027 U	79	0.0013 J	0.00036 J	0.0008 J	0.29	0.00024 U	42	0.046	0.000086 J	0.0042 J	3.1	0.0015 U	0.00018 U	9	0.00016 U	0.00054 J	0.016 J
	2014	0.0038 J	0.001 U	0.001 U	0.043	0.0005 U	0.0005 U	67	0.00028 J	0.0005 U	0.00035 J	0.26	0.0005 U	36	0.002 J	0.00001 U	0.002 J	2.7	0.003 J	0.0005 U	6.8	0.0005 U	0.0005 U	0.0031 J
	2015	0.0084 J	0.001 U	0.001 U	0.06	0.0005 U	0.0005 U	54	0.00061 J	0.0005 U	0.0005 U	0.15 J	0.0005 U	27	0.0057	0.00001 U	0.0013 J	2.8	0.0025 U	0.0005 U	5.1	0.0005 U	0.0005 U	0.0018 U
	2016	0.015 J	0.00075 U	0.001 U	0.078	0.0005 U	0.0005 U	54	0.00062 J	0.00016 J	0.00073 J	0.62 U	0.0005 U	32	0.0015 J	0.00001 U	0.0039 J	2.3 J	0.0016 J	0.0005 U	1.9 J	0.0005 U	0.0005 U	0.0054 J
	2017	0.13 J	0.0011 J	0.001 U	0.082	0.0005 U	0.00034 J	53	0.00044 J	0.00034 J	0.00089 J	0.66	0.00036 J	30	0.013	0.00001 U	0.0029 J	2.5	0.0021 J	0.0005 U	2	0.0005 U	0.00025 U	0.003 J
	2018	0.012 J	0.00075 U	0.001 U	0.11	0.0005 U	0.00028 J	48	0.0006 J	0.00015 J	0.00024 J	0.46	0.0005 U	25	0.029	0.00001 U	0.0029 J	2.3	0.0025 U	0.0005 U	1.2	0.0005 U	0.00025 U	0.011 J
	2019	0.03 U	0.00074 U	0.001 U	0.15	0.0003 U	0.00074 U	54.8	0.0011 J	0.00019 U	0.00019 U	0.33	0.00074 U	12.1	0.091	0.00001 U	0.0019 U	2.1	0.0019 U	0.00016 U	3.9	0.0003 U	0.00074 U	0.0065 J
	2020	0.03 U	0.00074 U	0.001 U	0.1	0.0003 U	0.00037 U	49.4	0.00074 U	0.00019 U	0.00019 U	0.15	0.00074 U	26.6	0.006	0.00001 U	0.0019 U	2.4	0.0021 J	0.00074 U	5.5	0.0003 U	0.00074 U	0.0019 U
10L31 (Filtered)	2013	0.0099 J	0.00052 U	0.00061 U	0.03	0.00025 U	0.00027 U	65	0.00018 J	0.00018 J	0.00088 J	0.098 J	0.00024 U	32	0.0037	0.00012 J	0.0037 J	2.5	0.0017 J	0.00028 J	7	0.00016 U	0.00049 U	0.013 J
	2014	0.0025 U	0.001 U	0.001 U	0.038	0.00034 J	0.0005 U	65	0.0018 J	0.00022 J	0.0015 J	0.47	0.0005 U	33	0.013	0.00001 U	0.0017 J	2.6	0.0025 U	0.0005 U	6.2	0.0005 U	0.00094 J	0.0035 J
	2015	0.0027 J	0.00062 J	0.001 U	0.054	0.0005 U	0.0005 U	54	0.0005 J	0.00026 J	0.0005 U	0.16 J	0.0005 U	29	0.00093 J	0.00001 U	0.0014 J	2.8	0.0016 J	0.0005 U	5.5	0.0005 U	0.00054 J	0.0027 J
	2016	0.38	0.00075 U	0.001 U	0.075	0.0005 U	0.0005 U	52	0.00071 J	0.00013 J	0.0013 J	0.62 U	0.0005 U	29	0.0005 U	0.00001 U	0.0023 J	2.3 J	0.0022 J	0.0005 U	1.9 J	0.0005 U	0.0005 U	0.004 J
	2017	0.005 U	0.00075 U	0.001 U	0.076	0.0005 U	0.0005 U	32	0.0005 U	0.00022 J	0.00096 J	0.47	0.0005 U	28	0.00036 J	0.00001 U	0.0032 J	2.4	0.002 J	0.0005 U	2	0.0005 U	0.00025 U	0.005 U
	2018	0.0054 J	0.00075 U	0.001 U	0.11	0.0005 U	0.0004 J	50	0.00044 J	0.00043 J	0.00093 J	0.47	0.0005 U	27	0.022	0.00001 U	0.0026 J	2.3	0.0025 U	0.0005 U	1.1	0.0005 U	0.00025 U	0.009 J
	2019	0.03 U	0.00074 U	0.0017 J	0.42	0.00037 U	0.00037 U	36.2	0.0018 J	0.0033 J	0.0019 U	11.4	0.00074 U	6.7	0.4	0.00003 U	0.0047 J	0.97	0.00074 U	0.00074 U	3.7	0.00037 U	0.00074 U	0.0092
	2020	0.03 U	0.00074 U	0.0011 U	0.096	0.00037 U	0.00037 U	49.4	0.00074 U	0.00019 U	0.00019 U	0.12	0.00074 U	27.5	0.0048 J	0.00003 U	0.0003 U	0.0019 U	2.4	0.0028 J	0.00074 U	5.4	0.00037 U	0.00074 U
MW-01	2013	0.012 J	0.00052 U	0.00061 U	0.048	0.0005 U	0.00027 U	46	0.00092 J	0.00022 J	0.0008 J	0.19 J	0.0003 J	23	0.014	0.000091 J	0.0034 J	1.8	0.0019 J	0.00018 U	4.8	0.0002 J	0.00049 U	0.0067 J
	2014	0.0043 U	0.00076 J	0.001 U	0.046	0.0005 U	0.0005 U	37	0.00066 J	0.0005 U	0.00046 U	0.12 U	0.0005 U	19	0.0015 J	0.00001 U	0.0014 J	1.5	0.0022 J	0.0005 U	3.2	0.0005 U	0.0005 U	0.0061 J
	2015	0.027 J	0.001 U	0.0032	0.07	0.0005 U	0.0005 U	26	0.0005 U	0.00013 J	0.00024 U	4.2	0.0005 U	13	0.011	0.00001 U	0.001 J	1.5	0.0025 U	0.0005 U	2.1	0.0005 U	0.0005 U	0.0018 U
	2016	0.012 J	0.00075 U	0.001 U	0.048	0.0005 U	0.0005 U	29	0.00054 J	0.0005 U	0.00042 J	0.62 U	0.0005 U	18	0.00042 J	0.00001 U	0.0016 J	1.5 J	0.0023 J	0.0005 U	3.7	0.0005 U	0.0005 U	0.0058 J
	2017	0.0032 U	0.00075 U	0.001 U	0.053	0.0005 U	0.0005 U	31	0.00038 J	0.0005 U	0.00057 J	0.19 J	0.0005 U	19	0.001 U	0.00001 U	0.0021 J	1.7	0.0025 U	0.0005 U	3.7	0.0005 U	0.00025 U	0.0037 J
	2018	0.008 J	0.00075 U	0.001 U	0.047	0.0005 U	0.00027 J	30	0.0007 J	0.0006 J	0.0005 U	0.28	0.0005 U	17	0.0012 J	0.00001 U	0.002 J	1.7	0.0015 J	0.0005 U	4.3	0.0005 U	0.00025 U	0.011 J
	2019	0.03 U	0.00074 U	0.001 U	0.032	0.0003 U	0.00037 U	20.1	0.00074 U	0.00019 U	0.00019 U	0.26	0.00074 U	3.1	0.55	0.00001 U	0.0019 U	1	0.0019 U	0.00016 U	1.3	0.0003 U	0.00074 U	0.0028 J
	2020	0.03 U	0.00074 U	0.001 U	0.064	0.0003 U	0.00037 U	36.9	0.00074 U	0.00019 U	0.00019 U	0.067	0.00074 U	20.6	0.042	0.00001 U	0.0019 U	1.9	0.0019 U	0.00074 U	4.8	0.0003 U	0.00074 U	0.0028 J
MW-01 (Filtered)	2013	0.0017 J	0.00052 U	0.00061 U	0.043	0.00025 U	0.00027 U	44	0.00031 J	0.00012 U	0.0004 J	0.048 U	0.00024 U	21	0.0086 J	0.000085 J	0.0032 J	1.7	0.0018 J	0.00016 U	4.5	0.00016 U	0.00049 U	0.0027 J
	2014	0.0025 U	0.001 U	0.001 U	0.047	0.0005 U	0.0005 U	33	0.00078 J	0.0005 U	0.0003 J	0.12 U	0.0005 U	17	0.00061 J	0.00001 U	0.0012 J	1.3	0.0024 J	0.0005 U	3	0.0005 U	0.00068 J	0.0022 J
	2015	0.0044 J	0.001 U	0.001 U	0.054	0.0005 U	0.0005 U	26	0.0012 J	0.00057 J	0.0005 U	0.31	0.0005 U	13	0.012									

Well	Year	ALUMINUM mg/L	ANTIMONY mg/L	ARSENIC mg/L	BARIUM mg/L	BERYLLIUM mg/L	CADMIUM mg/L	CALCIUM mg/L	CHROMIUM, TOTAL mg/L	COBALT mg/L	COPPER mg/L	IRON mg/L	LEAD mg/L	MAGNESIUM mg/L	MANGANESE mg/L	MERCURY mg/L	NICKEL mg/L	POTASSIUM mg/L	SELENIUM mg/L	SILVER mg/L	SODIUM mg/L	THALLIUM mg/L	VANADIUM mg/L	ZINC mg/Lg/L
MW-13	2013	0.01 J	0.00052 U	0.00062 J	0.49		0.00027 U	40	0.0024 J	0.00032 J	0.0012 J	1.1	0.00051 J	8	0.066	0.000076 J	0.0019 J	1.5	0.0015 U	0.00018 U	3.3	0.00024 J	0.00049 U	0.012 J
	2014	0.0017 J	0.001 U	0.001 U	0.47	0.0005 U	0.0005 U	33	0.00038 J	0.0005 U	0.0005 U	0.64	0.0005 U	6.8	0.0005 U	0.00079 J	0.0005 U	1.2	0.0005 U	0.0005 U	2.7	0.0005 U	0.0005 U	0.0025 U
	2015	0.05	0.001 U	0.001 U	0.43	0.0005 U	0.0005 U	33	0.00062 J	0.00023 J	0.0005 U	0.79	0.0005 U	6	0.039	0.0001 U	0.0011 J	0.93	0.0025 U	0.0005 U	2	0.0005 U	0.0005 U	0.0018 U
	2016	0.017 J	0.00075 U	0.001 U	0.44	0.0005 U	0.0005 U	29	0.0005 U	0.00012 J	0.00064 J	0.56 J	0.0005 U	6.8	0.0046	0.0001 U	0.00076 J	1.1	0.0025 U	0.0005 U	2.2 J	0.0005 U	0.0005 U	0.0057 J
	2017	0.0067 U	0.00075 U	0.00082 J	0.46	0.0005 U	0.0005 U	30	0.00038 J	0.0005 U	0.00051 J	1.8	0.0005 U	6.8	0.0056	0.0001 U	0.0012 J	1.1	0.0025 U	0.0005 U	2.1	0.0005 U	0.0025 U	0.0029 J
	2018	0.005 U	0.00075 U	0.00075 U	0.43	0.0005 U	0.00032 J	29	0.0005 U	0.0001 U	0.0005 U	0.83	0.0005 U	6.3	0.0057	0.0001 U	0.0012 J	1	0.0025 U	0.0005 U	2	0.0005 U	0.0025 U	0.0082 J
	2019	0.03 U	0.00074 U	0.001 U	0.64	0.0003 U	0.00037 U	36.1	0.00074 U	0.0019 U	0.0019 U	0.15	0.00074 U	8.6	0.044	0.00016 U	0.0019 U	14.2	0.0019 U	0.00074 U	12.3	0.0003 U	0.00074 U	0.011 J
	2020	0.03 U	0.00074 U	0.001 U	0.4	0.0003 U	0.00037 U	29.8	0.00074 U	0.0019 U	0.0019 U	0.48	0.00074 U	6.9	0.071	0.00016 U	0.0019 U	1.1	0.0019 U	0.00074 U	2.3	0.0003 U	0.00074 U	0.0019 U
	2013	0.0092 J	0.0015 J	0.00061 U	0.43	0.00025 U	0.00027 U	35	0.00072 J	0.00012 J	0.00086 J	0.68	0.00024 U	6.6	0.052	0.000085 J	0.0016 J	1.2	0.0015 U	0.0012 J	2.5	0.00016 U	0.00049 U	0.14 J
	2014	0.0039 J	0.001 U	0.001 U	0.45	0.0003 U	0.0005 U	33	0.00034 J	0.0005 U	0.0005 U	0.59	0.00048 J	6.5	0.045	0.0001 U	0.00095 U	1.2	0.0025 U	0.0005 U	3.2	0.0005 U	0.0005 J	0.0025 U
MW-13 (Filtered)	2015	0.026 J	0.001 U	0.001 U	0.44	0.0005 U	0.0005 U	33	0.00084 J	0.00036 J	0.0005 U	0.7	0.0005 U	6.2	0.045	0.0001 U	0.001 J	0.78	0.0025 U	0.0005 U	2.1	0.0005 U	0.0005 U	0.0047 J
	2016	1.2	0.00075 U	0.001 U	0.43	0.0005 U	0.0005 U	32	0.0005 U	0.0005 U	0.0027 J	0.53 J	0.0005 U	6.8	0.044	0.0001 U	0.0011 J	1.1 J	0.0025 U	0.0005 U	2.3 J	0.0005 U	0.0005 U	0.0092 J
	2017	0.005 U	0.00075 U	0.001 U	0.46	0.0005 U	0.0005 U	30	0.00024 J	0.0005 U	0.0015 U	0.65	0.0005 U	6.4	0.05	0.0001 U	0.0013 J	1.1	0.0025 U	0.0005 U	2.2	0.0005 U	0.0025 U	0.005 U
	2018	0.005 U	0.00075 U	0.001 U	0.43	0.0005 U	0.0017	29	0.0005 U	0.00015 J	0.0022 J	0.44	0.0005 U	6.4	0.053	0.0001 U	0.0014 J	1	0.0025 U	0.0005 U	2	0.0005 U	0.0025 U	0.0086 J
	2019	0.052 J	0.00074 U	0.0011 U	0.33	0.00037 U	0.00037 U	3.5	0.0092	0.0019 U	0.0019 U	0.21	0.036	0.0019 U	0.0081	0.00003 U	0.0019 U	1.4	0.0019 U	0.00074 U	223	0.00037 U	0.00074 U	0.019
	2020	0.03 U	0.00074 U	0.0011 U	0.4	0.00037 U	0.00037 U	28.7	0.00074 U	0.0019 U	0.0019 U	0.46	0.00074 U	6.9	0.068	0.00003 U	0.0019 U	1.1	0.0019 U	0.00074 U	2.3	0.00037 U	0.00074 U	0.0019 U
MW-14	2013	0.006 J	0.00052 U	0.00052 U	0.36	0.0019	0.00061 J	34	0.00061 J	0.0038 J	0.0027 J	10	0.00038 J	6	0.41	0.000086 J	0.005 J	0.96	0.0015 U	0.00018 U	3.7	0.00017 J	0.00049 U	0.018 J
	2014	0.0027 J	0.001 U	0.0014 J	0.36	0.00046 J	0.0005 U	29	0.0005 U	0.0042 J	0.0005 U	7.7	0.0005 U	5	0.43	0.0001 U	0.0063 J	0.78	0.0025 U	0.0005 U	3	0.0005 U	0.0005 U	0.0055 J
	2015	0.13	0.0039 J	0.12	1.6	0.0044	0.0039 J	35	0.0035 J	0.0005 U	0.001 U	190	0.00083 J	3.6	0.48	0.0001 U	0.0071 J	0.55 J	0.0025 U	0.00052 J	1.7	0.0005 U	0.001 U	0.05 J
	2016	0.013 J	0.00075 U	0.0036	0.37	0.0025 U	0.0005 U	27	0.0025 U	0.0035 J	0.0059 J	12	0.00032 J	5.4	0.37	0.0001 U	0.0056 J	0.66 J	0.0025 U	0.0005 U	3.1	0.0005 U	0.0025 U	0.01 J
	2017	0.0072 U	0.00075 U	0.0013 J	0.38	0.0005 U	0.0005 U	30	0.0011 J	0.004 J	0.0015 U	9.1	0.0005 U	6	0.46	0.0001 U	0.0059 J	0.77	0.0025 U	0.0005 U	3.1	0.0005 U	0.0025 U	0.012 J
	2018	0.0049 J	0.00075 U	0.0018	0.36	0.0005 U	0.0005 U	30	0.0034 J	0.0032 J	0.00072 J	11	0.0005 U	5.9	0.38	0.0001 U	0.0048 J	0.7	0.0025 U	0.0005 U	3	0.0005 U	0.0025 U	0.012 J
	2019	0.03 U	0.00074 U	0.001 U	0.16	0.0003 U	0.00037 U	59.5	0.00074 U	0.0019 U	0.0019 U	0.14	0.00074 U	27.7	0.17	0.00016 U	0.0034 J	2.4	0.0019 U	0.00074 U	1.2	0.0003 U	0.00074 U	0.0035 J
	2020	0.03 U	0.00088 J	0.0022 J	0.4	0.00088 J	0.00037 U	33.3	0.0022 J	0.0019 U	0.00037 U	9.1	0.00074 U	6.3	0.4	0.00016 U	0.0036 J	0.93	0.0019 U	0.00074 U	3.9	0.00049 J	0.00074 U	0.005 J
	2013	0.0092 J	0.00081 J	0.00061 U	0.3	0.00025 U	0.00027 U	28	0.00076 J	0.0003 J	0.00076 J	7.5	0.00024 U	4.9	0.33	0.00011 J	0.0043 J	0.77	0.0015 U	0.00082 J	3	0.00016 U	0.00049 U	0.017 J
	2014	0.0025 U	0.001 U	0.001 U	0.33	0.0005 U	0.0005 U	28	0.0005 U	0.0039	0.0003 J	6.5	0.0005 U	4.7	0.4	0.0005 U	0.0046 J	0.79	0.0025 U	0.0005 U	3	0.0005 U	0.0005 U	0.0051 J
MW-14 (Filtered)	2015	0.0025 U	0.001 U	0.001 J	0.39	0.0005 U	0.0005 U	31	0.00063 J	0.0031	0.0005 U	7.1	0.0005 U	5.2	0.38	0.0001 U	0.0037 J	0.51	0.0025 U	0.0005 U	2.9	0.0005 U	0.0005 U	0.0024 J
	2016	0.13 J	0.00075 U	0.0012 J	0.35	0.0005 U	0.0005 U	29	0.0005 U															

Well Units	Year	ALUMINUM mg/L	ANTIMONY mg/L	ARSENIC mg/L	BARIUM mg/L	BERYLLIUM mg/L	CADMIUM mg/L	CALCIUM mg/L	CHROMIUM, TOTAL mg/L	COBALT mg/L	COPPER mg/L	IRON mg/L	LEAD mg/L	MAGNESIUM mg/L	MANGANESE mg/L	MERCURY mg/L	NICKEL mg/L	POTASSIUM mg/L	SELENIUM mg/L	SILVER mg/L	SODIUM mg/L	THALLIUM mg/L	VANADIUM mg/L	ZINC mg/L/g/L
MW-44	2015	0.21	0.001 U	0.0013 J	0.036	0.0005 U	0.0005 U	37	0.0052 J	0.0012 J	0.0013 J	0.39	0.00032 J	3.4	0.98	0.0001 U	0.0018 J	3	0.0025 U	0.0005 U	2.3	0.0005 U	0.0008 J	0.0031 J
	2016	0.51	0.00075 U	0.002 U	0.24	0.001 U	0.001 U	52	0.0012 J	0.00043 J	0.0032 J	0.49 J	0.0009 J	9.6	0.19	0.0001 U	0.0034 J	2.7	0.005 U	0.0005 U	10	0.001 U	0.001 U	0.013 J
	2017	0.032 J	0.00072 J	0.001 U	0.22	0.0005 U	0.0005 U	45	0.00076 J	0.00022 J	0.00093 J	0.33	0.0005 U	9.2	0.019	0.0001 U	0.0026 J	2	0.0025 U	0.0005 U	6.5	0.0005 U	0.0025 U	0.0095 J
	2018	4.2	0.00075 U	0.0008 J	0.23	0.0005 U	0.00045 J	58	0.0042 J	0.00076 J	0.0021 J	3.1	0.0045	12	0.16	0.0001 U	0.0049 J	2	0.0025 U	0.0005 U	4.4	0.0005 U	0.0025 U	0.023 J
	2019	0.2	0.00074 U	0.001 U	0.21	0.0003 U	0.00037 U	49.1	0.0012 J	0.0019 U	0.0019 U	0.41	0.0011 J	10.2	0.077	0.00016 U	0.0019 U	2.1	0.0019 U	0.00074 U	6	0.0003 U	0.00074 U	0.0084 J
	2020	0.23	0.00074 U	0.001 U	0.35	0.0003 U	0.00037 U	53.8	0.00074 U	0.0019 U	0.0019 U	0.29 U	0.00074 U	12.4	0.21	0.00016 U	0.0019 U	3	0.0019 U	0.00074 U	17.2	0.0003 U	0.00074 U	0.021

Well	Year	ALUMINUM	ANTIMONY	ARSENIC	BARIUM	BERYLLIUM	CADMIUM	CALCIUM	CHROMIUM, TOTAL	COBALT	COPPER	IRON	LEAD	MAGNESIUM	MANGANESE	MERCURY	NICKEL	POTASSIUM	SELENIUM	SILVER	SODIUM	THALLIUM	VANADIUM	ZINC
Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW-44 (Filtered)	2015	0.0025 U	0.00056 U	0.001 U	0.1	0.0005 U	0.0005 U	32	0.0017 U	0.0005 U	0.0005 U	0.12 U	0.0005 U	7.1	0.018	0.0001 U	0.00069 U	1.6	0.0025 U	0.0005 U	4.7	0.0005 U	0.0005 U	0.0029 U
	2016	0.23 U	0.0005 U	0.001 U	0.25	0.0005 U	0.0005 U	56	0.00048 U	0.0005 U	0.0005 U	0.62 U	0.0005 U	12	0.2	0.0001 U	0.0031 U	2.5 U	0.0025 U	0.0005 U	13	0.0005 U	0.0005 U	0.013 U
	2017	0.0027 U	0.00075 U	0.001 U	0.17	0.0005 U	0.0005 U	38	0.0005 U	0.00015 U	0.00052 U	0.32	0.0005 U	8.8	0.0011	0.0001 U	0.0022 U	1.7	0.0025 U	0.0005 U	5.6	0.0005 U	0.0005 U	0.0096 U
	2018	0.0078 U	0.00075 U	0.001 U	0.12	0.0005 U	0.0005 U	48	0.00044 U	0.00029 U	0.0005 U	0.5	0.0005 U	10	0.0023 U	0.0001 U	0.0023 U	1.6	0.0025 U	0.0005 U	4	0.0005 U	0.0005 U	0.0083 U
	2019	0.8	0.00074 U	0.0011 U	0.27	0.0005 U	0.00063 U	27.6	0.0011 U	0.0026 U	0.0019 U	3.5	0.00074 U	13.4	0.0038	0.00003 U	0.0098	3	0.0019 U	0.00074 U	186	0.00037 U	0.00074 U	0.05
MW-47	2015	0.0069 U	0.0015 U	0.001 U	0.47	0.0005 U	0.0005 U	91	0.0025 U	0.0012 U	0.0029 U	0.68 U	0.0005 U	22	0.11	0.0001 U	0.0091 U	9.3	0.0042 U	0.0005 U	120	0.0005 U	0.00072 U	0.0046 U
	2017	5.7	0.00075 U	0.0025	0.097	0.0007 U	0.0005 U	15	0.009 U	0.0036 U	0.019	4.6	0.0042	4.4	0.29	0.0001 U	0.0026 U	3.9	0.0025 U	0.0005 U	8.3	0.0005 U	0.0096	0.029 U
	2018	1.5	0.00075 U	0.001 U	0.049	0.00034 U	0.0013	12	0.004 U	0.0015 U	0.0067	0.83	0.0011	3.5	0.16	0.0001 U	0.019	2.3	0.0025 U	0.0005 U	7.4	0.0005 U	0.0028 U	0.033 U
	2019	0.032 U	0.00074 U	0.001 U	0.054	0.0003 U	0.00037 U	13.9	0.00074 U	0.0037 U	0.003 U	0.15	0.00074 U	4.7	0.013	0.00016 U	0.016	2.1	0.0019 U	0.00074 U	8.1	0.0003 U	0.00074 U	0.013
	2020	3.8	0.00074 U	0.0029 U	0.083	0.00065 U	0.00037 U	10.4	0.006 U	0.0023 U	0.02	4.1	0.0045	3.9	0.16	0.00016 U	0.023	4.4	0.0019 U	0.00074 U	6.4	0.0003 U	0.0076	0.019
MW-47 (Filtered)	2017	0.033 U	0.00075 U	0.001 U	0.052	0.0003 U	0.0005 U	14	0.00096 U	0.0014 U	0.0037 U	0.15 U	0.0005 U	4.1	0.24	0.0001 U	0.024	2.2	0.0025 U	0.0005 U	7.9	0.0005 U	0.0025 U	0.012 U
	2018	0.023 U	0.00075 U	0.001 U	0.038	0.0005 U	0.00074 U	12	0.0005 U	0.0032 U	0.0097 U	0.76	0.0019	3.6	0.18	0.0001 U	0.019	1.9	0.0025 U	0.0005 U	7.2	0.0005 U	0.0025 U	0.018 U
	2019	0.03 U	0.00074 U	0.0011 U	0.13	0.00037 U	0.00037 U	7.9	0.0014 U	0.0019 U	0.0019 U	0.25	0.00074 U	5.3	0.012	0.000067 U	0.013	2.4	0.0019 U	0.00074 U	6.2	0.00037 U	0.00074 U	0.024
MW-50	2017	0.014 U	0.00095 U	0.001 U	0.09	0.0005 U	0.0005 U	24	0.00076 U	0.0005 U	0.00054 U	0.16 U	0.00027 U	5.3	0.024	0.0001 U	0.0023 U	0.91	0.0025 U	0.00036 U	4.1	0.0005 U	0.0025 U	0.005 U
MW-50 (Filtered)	2016	0.027 U	0.00021 U	0.001 U	0.048	0.0005 U	0.0005 U	130	0.0005 U	0.00072 U	0.003 U	0.62 U	0.0005 U	34	0.058	0.0001 U	0.0074 U	5.7	0.0044 U	0.0005 U	13	0.0005 U	0.0005 U	0.026 U
	2017	0.0014 U	0.00075 U	0.001 U	0.09	0.0005 U	0.0005 U	22	0.00044 U	0.0005 U	0.0015 U	0.17 U	0.0005 U	5.5	0.022	0.0001 U	0.0023 U	0.86	0.0025 U	0.0005 U	3.9	0.0005 U	0.0025 U	0.005 U
MW-51	2014	0.087	0.001 U	0.001 U	0.29	0.00044 U	0.0005 U	57	0.00013 U	0.00053 U	0.0032 U	1.1	0.00059 U	12	0.13	0.0001 U	0.0028 U	2.2	0.0019 U	0.0005 U	7.8	0.00018 U	0.00078 U	0.0076 U
	2015	0.0057 U	0.00052 U	0.001 U	0.24	0.0005 U	0.0005 U	60	0.0005 U	0.0017 U	0.0005 U	0.28	0.0005 U	12	0.062	0.00054 U	0.0014 U	2.6	0.0025 U	0.0005 U	7.9	0.0005 U	0.0005 U	0.0018 U
	2016	0.018 U	0.00024 U	0.002 U	0.28	0.001 U	0.001 U	50	0.0015 U	0.001 U	0.003 U	0.44 U	0.00053 U	10	0.096	0.0005 U	0.003 U	1.8	0.005 U	0.0005 U	6	0.001 U	0.001 U	0.0074 U
	2017	0.036 U	0.00075 U	0.001 U	0.29	0.0005 U	0.0005 U	53	0.0006 U	0.00025 U	0.00076 U	0.83	0.0005 U	12	0.13	0.0001 U	0.0029 U	2.1	0.0025 U	0.0005 U	9	0.0005 U	0.0025 U	0.0078 U
	2020	1.6	0.00074 U	0.001 U	0.37	0.0003 U	0.00037 U	52	0.0022	0.0019 U	0.0033 U	4.4	0.002 U	13	0.16	0.00016 U	0.015	2.6	0.0019 U	0.00074 U	7.7	0.0003 U	0.0029	0.012
MW-51 (Filtered)	2014	0.0016 U	0.0012 U	0.001 U	0.27	0.00036 U	0.0003 U	54	0.00082 U	0.00034 U	0.00048 U	0.28	0.0005 U	11	0.11	0.0001 U	0.002 U	2.2	0.0025 U	0.00055 U	7.5	0.0002 U	0.00074 U	0.0025 U
	2015	0.0099 U	0.001 U	0.001 U	0.25	0.0005 U	0.0005 U	60	0.0005 U	0.00017 U	0.0005 U	0.28	0.0005 U	14	0.066	0.0001 U	0.0018 U	2.6	0.0025 U	0.0005 U	8.9	0.0005 U	0.0007 U	0.0025 U
	2016	0.036 U	0.00075 U	0.001 U	0.31	0.0005 U	0.0005 U	50	0.0005 U	0.00025 U	0.00093 U	0.39 U	0.0005 U	11	0.094	0.0001 U	0.0027 U	2.1	0.0025 U	0.0005 U	7.1	0.0005 U	0.0005 U	0.019 U
	2017	0.005 U	0.00075 U	0.001 U	0.29	0.0005 U	0.0005 U	52	0.0005 U	0.00022 U	0.0015 U	0.26	0.0005 U	12	0.13	0.0001 U	0.0026 U	2	0.0025 U	0.0005 U	8.9	0.0005 U	0.0025 U	0.005 U
	2020	0.03 U	0.00074 U	0.0011 U	0.33	0.00037 U	0.00037 U	48.8	0.00074 U	0.0019 U	0.0019 U	0.84 U	0.00074 U	12.4	0.012	0.00003 U	0.013	2.4	0.0019 U	0.00074 U	7.7	0.00037 U	0.00074 U	0.0023 U
MW-52	2013	0.028 U	0.00052 U	0.00061 U	0.3	0.00061 U	0.00027 U	94	0.0039 U	0.00052 U	0.003 U	1.4	0.0036 U	15	0.25	0.000077 U	0.0067 U	2.2</						

Well Units	Year	ALUMINUM mg/L	ANTIMONY mg/L	ARSENIC mg/L	BARIUM mg/L	BERYLLIUM mg/L	CADMIUM mg/L	CALCIUM mg/L	CHROMIUM, TOTAL mg/L	COBALT mg/L	COPPER mg/L	IRON mg/L	LEAD mg/L	MAGNESIUM mg/L	MANGANESE mg/L	MERCURY mg/L	NICKEL mg/L	POTASSIUM mg/L	SELENIUM mg/L	SILVER mg/L	SODIUM mg/L	THALLIUM mg/L	VANADIUM mg/L	ZINC mg/L/g/L
WS/SE-CR-06	2015	1.2	0.001 U	0.0071	0.15	0.0012	0.0005 U	13	0.0025 J	0.011	0.0035 J	16	0.0053	5.7	3.9	0.0001 U	0.0046 J	2.1	0.0015 J	0.0005 U	1.9	0.0005 U	0.0034 J	0.023 J
	2016	0.16 J	0.00075 U	0.001 U	0.042	0.0005 U	0.0005 U	26	0.0004 J	0.001 J	0.0013 J	0.62 U	0.0005 U	8.4	0.053	0.0001 U	0.0055 J	2.1 J	0.0025 U	0.0005 U	33	0.0005 U	0.0005 U	0.0096 J
	2017	0.17 J	0.0028	0.001 U	0.042	0.0005 U	0.0005 U	22	0.00094 J	0.0009 J	0.0015 J	0.46	0.00038 J	6.8 J	0.049	0.0001 U	0.0046 J	2.1 J	0.0025 U	0.001 J	22	0.0005 U	0.0005 U	0.0079 J
	2019	0.03 U	0.00074 U	0.001 U	0.32	0.0003 U	0.00037 U	3.6	0.00074 U	0.0019 U	0.0074	0.38	0.00074 U	0.71	0.008	0.00016 U	0.0019 U	1.4	0.0019 U	0.00074 U	219	0.00038 J	0.00074 U	0.0083 J
	2020	0.2	0.00074 U	0.001 U	0.043	0.0003 U	0.00037 U	26.7	0.00074 U	0.0019 U	0.0019 U	0.36	0.00074 U	9.1	0.04	0.00016 U	0.0044 J	2.5	0.0019 U	0.00074 U	41.7	0.0003 U	0.00074 U	0.005 J
	2015	0.072	0.001 U	0.001 U	0.028	0.0005 U	0.0005 U	13	0.0068 J	0.00091 J	0.0005 U	0.13 J	0.0005 U	3.7	0.024	0.0001 U	0.0015 J	1.8	0.0025 U	0.0005 U	4.5	0.0005 U	0.0005 U	0.0027 J
WS/SE-CR-06 (Filtered)	2016	0.19 J	0.00038 J	0.001 U	0.04	0.0005 U	0.0005 U	29	0.0005 U	0.00092 J	0.0013 J	0.25 J	0.0005 U	8.4	0.046	0.0001 U	0.0055 J	2.3 J	0.0025 U	0.0005 U	33	0.0005 U	0.0005 U	0.0034 J
	2017	0.05	0.002 J	0.001 U	0.042	0.00056 J	0.0005 U	22	0.0011 J	0.00079 J	0.0015 J	0.27	0.00043 J	6.5	0.039	0.0001 U	0.0042 J	2	0.0025 U	0.0005 U	22	0.0005 U	0.0025 U	0.0038 J
	2020	0.072 J	0.00074 U	0.0011 U	0.038	0.00037 U	0.00037 U	26.7	0.00074 U	0.0019 U	0.0019 U	0.067	0.00074 U	9.1	0.038	0.00003 U	0.005 J	2.4	0.0019 U	0.00074 U	40.6	0.00037 U	0.00074 U	0.0035 J

Table 6. Comprehensive Radionuclide Sampling Results at SLDA

Note: Five (5) FLUTE Wells (NWS-01A, NWS-02, NWS-03, NWS-04, and NWS-05) were decommissioned in 2020.

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
10L31	2013	0.109 J	0.168	0.066 U	-1.23 U	0.524 U	-0.059 U	-0.007 U	0.431
	2014	0.05 U	0.057 U	0.021 U	-0.637 U	0.026 U	-0.024 U	0 U	0.312 J
	2015	0.005 U	0.15 J	0.046 J	-1.28 U	0.054 U	-0.031 U	-0.041 U	0.362
	2016	0.093	0.093 U	-0.063 U	-9.35 U	0.513 J	-0.014 U	0 U	0.374
	2017	0.002 U	0.089 U	0.029 U	3.28 U	0.374 J	-0.005 U	-0.003 U	0.416
	2018	0.015 U	0.154 U	0.035 U	0.834 U	0.058 U	-0.009 U	0 U	0.399
	2019	-0.011 U	0.012 U	0.007 U	4.8 U	0.021 U	0.026 U	-0.003 U	0.3
	2020	0.077 U	0.069 U	0.03 J	10.6 U	0.108 U	0.104 U	0.051 U	0.189 J
10L31 (Filtered)	2013	0.099 J	0.159 J	0.006 U	-1.74 U	0.576 U	-0.065 U	-0.03 U	0.402
	2014	0.053 J	0.08 U	0.027 U	-0.29 U	0.005 U	0.009 U	0 U	0.31 J
	2015	0.03 U	0.089 J	-0.01 U	-0.739 U	-0.027 U	0.011 U	0 U	0.407
	2016	-0.034 U	0.07 U	-0.023 U	-6.5 U	0.372 U	-0.079 U	-0.001 U	0.392
	2017	0.037 U	0.141 U	0.06 U	4.73 U	0.346 J	-0.015 U	0 U	0.345 J
	2018	0.027 U	0.102 U	0.104 J	-0.055 U	0.106 U	0.025 U	0 U	0.424
	2019	-0.021 U	0.023 U	0.006 U	-2.4 U	0.043 U	0.045 U	0.016 U	0.304
	2020	0.078 U	0.082 U	0.031 J	10.8 U	0.101 U	0.109 U	0.039 U	0.188 J
MW-01	2004	0.834 U		0.683 U	13.5 U			0.379 J	
	2013	0.027 U	0.204 J	0.019 U	3.62 U	0.442 U	-0.04 U	-0.216 U	0.162 J
	2014	0.089 J	0.05 U	0.025 U	1.66 U	-0.151 U	-0.006 U	-0.027 U	0.065 J
	2015	0.026 U	0.203	0.056 U	0.78 U	-0.035 U	-0.009 U	-0.009 U	0.07 U
	2016	0 U	0.097 U	0.065 J	-4.3 U	0.618 J	0.027 U	-0.012 U	0.058 U
	2017	0.013 U	0.11 U	-0.009 U	4.25 U	0.419 J	-0.04 U	-0.004 U	0.075 J
	2018	0.036 U	0.155 J	0.026 U	2.98 J	0.152 J	-0.015 U	0 U	0.179 J
	2019	-0.017 U	0.032 U	0.021 U	2 U	-0.099 U	-0.01 U	0 U	0.021 U
MW-01 (Filtered)	2020	0.076 U	0.066 U	0.054 U	10.2 U	0.145 U	0.108 U	0.035 U	0.03 U
	2013	0.066 U	0.186 J	0.022 U	8.18 J	0.422 U	-0.005 U	-0.022 U	0.163 J
	2014	-0.053 U	0.051 U	-0.032 U	1.8 U	0.014 U	-0.006 U	-0.026 U	0.067 J
	2015	-0.008 U	0.099 J	0.034 U	-3.62 U	-0.048 U	-0.004 U	0 U	0.076 U
	2016	0.01 U	0.095 U	0.002 U	-3.39 U	0.429 U	-0.071 U	0.021 J	0.068 J
	2017	0.072 J	0.112 U	0.023 U	2.83 U	0.344 J	-0.03 U	0 U	0.06 U
	2018	-0.008 U	0.332 J	0.109 J	-0.824 U	0.039 U	0.012 U	0.012 U	0.18 J
	2019	-0.015 U	-0.021 U	0.001 U	-0.3 U	-0.033 U	0.004 U	0.01 U	0.023 U
MW-02	2020	0.076 U	0.035 J	0.026 J	9.6 U	0.146 U	0.119 U	0.032 U	0.032 U
	2004	0.503 U		0.529 U	15.7 U			0.429 U	
MW-02A	2004	R		0.326 U	11.9 U			0.298 J	
	2004	1.46 J		R	11.2 U			0.471 J	
	2013	0.047 U	0.221 J	0.091 J	1.04 U	0.571 J	-0.125 U	-0.021 U	0.102 J
	2015	0.014 U	0.101 J	0.071 J	0.764 U	-0.025 U	0.056 J	-0.036 U	-0.004 U
	2016	0.025 U	0.08 U	0.065	1.14 U	0.275 U	0.013 U	0.022 U	0.067 U
	2017	0.047 U	0.127 U	0.013 U	-2.09 U	0.345 J	-0.05 U	0 U	0.072 U
	2018	0.023 U	0.046 U	0.05 J	3.8 J	0.057 U	-0.007 U	-0.005 U	0.118 U
	2019	-0.021 U	0.003 U	0.034 U	2.8 U	0.035 U	-0.008 U	0.005 U	0.078 J
MW-02A (Filtered)	2020	0.074 U	0.066 U	0.075 U	10.4 U	0.088 U	0.101 U	0.025 U	-0.01 U
	2013	-0.048 U	0.049 U	0.038 J	-0.092 U	0.41 U	-0.153 U	-0.048 U	0.093 J
	2015	0.032 U	0.144 J	0.057 J	1.22 U	-0.088 U	0.061 J	0.01 U	0.02 U
	2016	-0.006 U	0.138 J	-0.043 U	-1.14 U	0.544 J	-0.121 U	0 U	0.062 U
	2017	0.181 J	0.233 U	0.015 U	2.89 U	0.404 J	0.018 U	-0.004 U	0.067 U
	2018	-0.01 U	0.285 J	0.028 J	2.25 U	0.114 U	-0.008 U	-0.004 U	0.129 U
	2019	-0.02 U	0.011 U	0.002 U	2.4 U	-0.005 U	0.042 U	0.013 U	0.033 U
	2020	0.099 U	0.068 J	0.056 U	10.4 U	0.153 U	0.107 U	0.045 U	0.02 U

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-03	2013	0.042 U	0.164 J	0.01 U	-0.122 U	2.42 J	0.056 U	0.369 J	3.81
	2014	0.163 J	0.146 U	0 U	10.8 J	1.18	0.054 U	0.181 J	1.98
	2015	0.071 J	0 U	0.056 U	5.21 U	0.433	0.138	0.124	1.91
	2016	0.06 J	0.09 U	0.045 J	-0.282 U	0.604 J	0.014 U	0.076 J	1.18
	2018	0.013 U	0.175 J	0.027 J	1.22 U	0.064 U	0.034 J	0.053 J	0.986
	2019	-0.027 U	0 U	0.02 U	10.6 U	0.015 U	0.027 U	0.005 U	0.153 J
MW-03 (Filtered)	2015	0.005 U	0.086 U	0.224	2.35 U	0.591	0.138	0.073	1.86
	2016	0.023 U	0.114 U	-0.065 U	3.02 U	0.437 J	-0.014 U	-0.006 U	1.29
MW-05	2004	1.19 J		0.191 U	12.2 U			0.592 J	
	2014	0.069 J	0.152 J	0.062 J	-0.781 U	-0.058 U	0.033 U	-0.041 U	0.127 U
	2015	0.018 U	0.196	0.041 J	3.51 U	-0.121 U	0.088 J	0.044 U	0.161 J
	2016	0.015 U	0.092 U	0.005 U	-4.8 U	0.53 J	-0.03 U	0.019 U	0.037 U
	2017	-0.005 U	0.084 U	0.028 U	3.41 U	0.565 J	-0.027 U	-0.004 U	0.101 J
	2018	0.072 J	0.161 U	0.022 U	0.111 U	0.034 U	-0.008 U	-0.007 U	0.132 J
	2019	-0.011 U	0.031 U	0.011 U	-2.3 U	-0.037 U	0.073 U	0 U	0.102 J
	2020	0.083 U	0.038 J	0.026 U	10.4 U	0.168 U	0.117 U	0.032 U	0.082 J
MW-05 (Filtered)	2014	0.008 U	0 U	0.04 U	3.04 U	0.012 U	-0.016 U	0.019 U	0.105 U
	2015	0.012 U	0.057 U	0.029 J	1.1 U	-0.157 U	-0.025 U	0.013 J	0.153 J
	2016	-0.006 U	0.046 U	-0.013 U	-6.31 U	0.406 U	-0.126 U	-0.016 U	0.079 J
	2017	0.04 U	0.135 U	0.017 U	3.35 U	0.31 J	-0.029 U	0 U	0.112 J
	2018	0.038 U	0.305 U	0.116 J	0.995 U	0.155 J	0.043 J	-0.005 U	0.097 J
	2019	-0.008 U	0.042	0.003 U	-0.5 U	-0.078 U	0.053 U	0.016	0.06 J
MW-06	2004	0.822 U		R	8.91 U			0.5 J	
MW-07	2004	0.86 U		0.395 U	11.4 U			0.236 J	
	2013	0.103 J	0.094 J	0.017 U	-4.6 U	0.374 U	-0.008 U	0 U	0.241 J
	2014	0.005 U	0.014 U	0.034 U	3.62 U	-0.021 U	-0.022 U	0 U	0.224 J
	2015	0.053 U	0.117 J	0.002 U	-0.802 U	0.156 J	-0.022 U	0 U	0.176 J
	2017	0.061 J	0.1 J	-0.013 U	-0.147 U	0.37 U	-0.003 U	0 U	0.192 J
	2018	0.043 U	0.23 J	0.053 U	-1.32 U	0.109 U	0.01 U	-0.006 U	0.252 J
	2019	-0.007 U	0.014 U	-0.012 U	11.2	0.071 U	0.034 U	0.007 U	0.107 J
	2020	0.086 U	0.025 U	0.052 U	10.2 U	0.095 U	0.102 U	0.031 U	0.097 J
MW-07 (Filtered)	2013	0.102 J	0.151 J	0.018 U	-2.3 U	0.819 J	-0.039 U	0 U	0.239 J
	2014	0.026 J	0.119 U	0.009 U	7.88 J	-0.012 U	-0.04 U	0 U	0.205 J
	2015	-0.02 U	0.104 J	0.051 U	2.89 U	0 U	0.037 U	0.012 U	0.18 J
	2017	0.001 U	0.097 J	-0.006 U	1.87 U	0.411 U	-0.007 U	-0.004 U	0.172 J
	2018	0.022 U	0.34 J	0.132 J	-0.897 U	0.085 U	0.008 U	0 U	0.245 J
	2019	-0.005 U	-0.013 U	0.008 U	4.7 U	0.012 U	0.03 U	-0.012 U	0.077 J
	2020	0.076 U	0.054 U	0.065 U	10.1 U	0.11 U	0.104 U	0.038 U	0.107 J
MW-08	2004	0.667 U		0.125 U	11.6 U			0.557 J	
	2013	-0.028 U	0.184 J	-0.009 U	1.28 U	0.67 J	0.011 U	-0.007 U	0.103 J
	2014	-0.007 U	0.058 U	0.048 U	2.71 U	-0.177 U	-0.088 U	-0.07 U	0.058 J
	2015	0.07 J	0.103 J	0.007 U	-0.21 U	0.012 U	-0.016 U	-0.018 U	0.078 U
	2016	0.012 U	0.106 J	-0.011 U	1.24 U	0.384 J	-0.129 U	0 U	0.06 U
	2017	0.116 J	0.159 U	0.04 U	2.09 U	-0.01 U	0.017 U	0.041 J	0.077 J
	2018	0.006 U	0.227 J	0.096 U	1.16 U	0.153 J	0.02 U	-0.004 U	0.151 J
	2019	-0.016 U	-0.012 U	0.003 U	3.4 U	0.031 U	0.005 U	0.003 U	0.038 J
	2020	0.073 U	0.046	0.053 U	10.6 U	0.107 U	0.103 U	0.01 J	0.011 U
MW-08 (Filtered)	2013	-0.003 U	0.043 U	0.026 U	-1.74 U	0.15 U	-0.015 U	-0.008 U	0.107 J
	2014	0.003 U	0.068 U	0.059 U	3.81 U	-0.08 U	0.028 U	-0.062 U	0.06 J
	2015	-0.01 U	0.015 U	0.023 U	-0.495 U	0.063 U	-0.029 U	0 U	0.098 U
	2016	0.026 J	0.128 J	0.006 U	0.772 U	0.527 J	-0.011 U	0.018 U	0.08 U
	2017	0.071 J	0.053 U	0.004 U	3.05 U	0.387 J	0.008 U	0.02 J	0.081 J
	2018	0.035 U	0.366 J	0.054 U	-0.514 U	0.15 J	-0.008 U	-0.004 U	0.133 J
	2019	-0.023 U	0.034 U	0.007 U	3.6 U	0 U	0.019 U	0.006 U	0.075 J
	2020	0.081 U	0.024 U	0.026 J	10.1 U	0.135 U	0.104 U	0.025 U	0.007 U

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-09A	2004	0.716 U		0.0386 U	9.78 U			0.459 J	
	2013	0.109 U	0.051 U	-0.041 U	5.58 J	0.283 U	-0.027 U	0.037 J	0.154 J
	2014	0.017 U	0.01 U	0.079	0.413 U	-0.159 U	-0.177 U	-0.118 U	0.111 J
	2015	0 U	-0.041 U	0 U	-1.89 U	0.081 U	0.015 U	-0.01 U	0.145 J
	2016	0.081 J	0.128 J	0.013 U	-4.11 U	0.475 J	0.054 U	-0.007 U	0.129 J
	2017	0.002 U	0.111 U	0.012 U	2.85 U	0.385 J	-0.005 U	-0.003 U	0.43
	2018	0.01 U	0.465 J	0.053 U	1.23 U	0.222 J	0.034 J	0 U	0.21 J
	2019	-0.018 U	0.027 U	0.013 U	9.2 U	0.199	0.023 U	-0.003 U	0.188 J
	2020	0.08 U	0.039 J	0.029 J	10.5 U	0.051 U	0.108 U	0.05 U	0.082 J
MW-09A (Filtered)	2013	0.141 J	0.205 J	-0.028 U	2.99 U	0.505 U	-0.02 U	0 U	0.174 J
	2014	0.016 U	0.08 J	0.03 U	-0.108 U	-0.004 U	-0.009 U	0.012 U	0.116 J
	2015	0.061 J	0.108 J	0.049 J	-2.36 U	-0.042 U	-0.023 U	0 U	0.168 J
	2016	0.047 J	0.121 U	-0.094 U	-4.74 U	0.323 U	-0.011 U	-0.006 U	0.144 J
	2017	0.072 J	0.106 U	0.045 U	6.4 J	0.445 J	0.006 U	0 U	0.415
	2018	0.03 U	0.329 U	0.104 J	2.33 U	0.19 J	0.015 U	-0.004 U	0.231 J
	2019	-0.013 U	0.017 U	0.021 U	2.4 U	0 U	0.085	0.027 U	0.14 J
	2020	0.079 U	0.038 J	0.025 U	10.1 U	0.109 U	0.106 U	0.025 U	0.031 U
MW-12D	2004	0.593 U		0.595 U	10.2 U			0.774 J	
MW-13	2004	0.612 U		0.715 U	11.7 U			0.328 J	
	2013	0.068 J	0.033 U	0.027 U	-0.274 U	0.252 U	-0.037 U	-0.019 U	0.137 J
	2014	0.013 U	0.08 U	-0.017 U	-2.35 U	-0.019 U	-0.028 U	0 U	0.123 U
	2015	0.021 U	0.167	0.071 J	4.29 U	0.147 J	0.026 U	-0.013 U	0.085 J
	2016	0.01 U	0.038 U	-0.039 U	0.492 U	0.591 J	-0.011 U	0 U	0.081 U
	2017	-0.002 U	0.213 J	0.013 U	2.62 U	0.333 J	-0.028 U	0 U	0.067 U
	2018	-0.024 U	0.323 U	0.143 J	-0.884 U	0.123 U	0.01 U	0.018 J	0.129 J
	2019	-0.011 U	0.007 U	0.033 J	3.6 U	-0.034 U	0.096 U	0.008 U	0.033 U
	2020	0.078 U	0.024 U	0.051 U	9.7 U	0.104 U	0.109 U	0.029 U	-0.012 U
MW-13 (Filtered)	2013	0.02 U	0.156 J	0.053 U	-4.75 U	0.457 U	0.06 J	-0.005 U	0.156 J
	2014	-0.012 U	0.153 J	0.03 U	2.33 U	0.017 U	0.008 U	-0.014 U	0.111 U
	2015	0.064 J	0.031 U	0.029 J	3.08 U	-0.039 U	0.012 U	0.062 J	0.082 J
	2016	-0.007 U	0.034 U	0.024 U	3.43 U	0.327 U	-0.082 U	-0.001 U	0.089 U
	2017	0.026 U	0.135 U	0.037 U	5.1 U	0.273 J	-0.004 U	-0.004 U	0.07 U
	2018	0.028 U	0.541 J	0.183 J	1.6 U	0.043 U	-0.008 U	0 U	0.126 J
	2019	0.013 U	0 U	0 U	-1.9 U	0.02 U	0.07 U	-0.002 U	0.028 U
	2020	0.085 U	0.056 U	0.068 U	10.4 U	0.098 U	0.105 U	0.033 U	-0.02 U
MW-14	2004	0.675 U		0.494 U	10.7 U			0.341 J	
	2013	0.057 U	0.1 J	0.1 U	-0.698 U	0.828 J	-0.027 U	0 U	0.098 J
	2014	0.034 J	-0.011 U	0.043 U	0.602 U	0.128 J	-0.017 U	-0.017 U	0.032 U
	2015	-0.099 U	0.388 J	0.053 U	0.847 U	4.15	0.051 U	0.051	1.06
	2016	-0.005 U	-0.012 U	-0.058 U	-0.654 U	0.635 J	0.038 J	-0.006 U	0.088 U
	2017	-0.012 U	0.234 J	0.046 U	0.232 U	0.411 U	0.018 J	-0.004 U	0.029 U
	2018	0.038 U	0.421 J	0.058 U	-0.58 U	0.123 U	0.041 J	0.011 U	0.124 J
	2019	-0.023 U	0.037 U	0.003 U	-1.5 U	-0.017 U	0.036 U	0.014 U	0.184 J
	2020	0.075 U	0.067 U	0.067 U	11 U	0.109 U	0.107 U	0.037 U	-0.028 U
MW-14 (Filtered)	2013	0.108 J	0.035 U	0.124 J	-3.51 U	0.886 J	-0.022 U	0 U	0.099 J
	2014	-0.031 U	0.103 U	0.056 J	2.05 U	-0.098 U	-0.072 U	-0.045 U	0.031 U
	2015	-0.031 U	0.081 J	0.052 U	-0.301 U	-0.018 U	0.034 U	-0.025 U	0.076 U
	2016	0.007 U	0.091 J	-0.024 U	-3.38 U	0.345 J	0.01 U	-0.006 U	0.069 U
	2017	0.096 J	0.122 J	0.054 U	-2.68 U	0.339 U	0.014 U	0.015 J	0.028 U
	2018	0.04 U	0.218 J	0.071 U	0.319 U	0.171 J	0.035 J	-0.005 U	0.123 J
	2019	-0.03 U	-0.012 U	0.011 U	7.6 U	0.059 U	-0.034 U	0.004 U	0.163 J
	2020	0.079 U	0.059 U	0.059 U	12 U	0.113 U	0.114 J	0.033 U	-0.011 U

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-15	2004	0.776 U		0.107 U	12.7 U			0.487 J	
	2013	0.061 U	0.008 U	-0.017 U	4.42 J	0.283 U	0.08 J	-0.035 U	0.263 J
	2014	0.182 J	0.137 U	-0.107 UJ	-2.97 U	0.17	0.036 J	0 U	0.064 U
	2015	0.049 J	0.022 U	0.006 U	5.19 J	0.013 U	0.039 U	-0.065 U	0.053 U
	2016	0.02 U	0.045 U	0 U	-5.09 U	0.571 J	-0.078 U	-0.001 U	0.085 U
	2017	0.042 U	0.162 J	0.035 U	1.86 U	0.008 U	0.015 U	0.04 J	0.086 J
	2018	-0.003 U	0.117 U	0.068 U	-0.166 U	0.262 J	0.094 J	-0.005 U	0.245 J
	2019	-0.007 U	0.032 U	0.001 U	11 U	-0.005 U	0.025 U	-0.021 U	0.025 U
MW-15 (Filtered)	2020	0.073 U	0.052 U	0.052 U	10.5 U	0.111 U	0.1 U	0.043 U	0.037 J
	2013	0.05 U	0.023 U	0 U	0.708 U	0.557 J	0.032 U	0.023 U	0.061 U
	2014	-0.055 U	-0.024 U	0 U	1.82 U	-0.045 U	-0.011 U	0 U	0.051 U
	2015	0.047 U	0.104	0.02 U	0.37 U	0.095 U	0.026 U	0 U	0.086 J
	2016	0.04 J	0.042 U	0.012 U	-3.35 U	0.628 J	0.002 U	-0.005 U	0.063 U
	2017	0.073 J	0.381 J	0.084 J	-0.204 U	0.267 U	-0.003 U	0 U	0.068 U
	2018	0.006 U	0.216 U	0.117 J	-1.26 U	0.142 J	-0.018 U	0 U	0.107 J
	2019	-0.018 U	0.028 U	0.017 U	9.8 U	0.025 U	-0.001 U	-0.012 U	0.069 J
MW-16BC	2020	0.074 U	0.052 U	0.052 U	10.5 U	0.122 U	0.113 U	0.046 U	0.074 J
MW-19	2004	0.564 U		0.035 J	12 U			0.468 J	
MW-20	2004	R		R	R			0.459 J	
MW-20	2013	0.026 U	0.16 J	0.006 U	3.32 U	2.41 J	0.413	0.492	2.47
	2014	-0.017 U	0.029 U	0.011 J	-1.93 U	4.23	1.32	0.66	1.61
	2015	-0.014 U	0.116 J	0.012 U	0.741 U	1.62	0.334	0.193 J	2.35
MW-20 (Filtered)	2015	0.025 U	0.117 J	0.073 J	9.13 J	1.42	0.298	0.184	1.49
MW-22	2004	0.458 U		0.532 U	10.6 U			0.478 J	
	2013	0.106 J	0.152 J	0.093	-0.47 U	0.489 J	-0.055 U	0.003 U	0.282 J
	2014	0.007 U	0.034 U	0.051 J	1.98 U	0.226 J	0.067 J	0.084	0.292
	2015	0.015 U	0.171	0.043 U	-1.15 U	-0.051 U	-0.012 U	0 U	0.116 J
	2016	0.011 U	0.016 U	-0.041 U	0.272 U	0.467 J	0.093 J	0.06 J	0.265 J
	2017	0.046 U	0.037 U	0.054 U	1.1 U	0.364 J	0.029 U	0.018 J	0.459
	2018	0.014 U	0.121 U	0.067 U	-0.367 U	0.178 J	0.006 U	0.019 J	0.193 J
	2019	-0.02 U	-0.009 U	0.051 U	12.5	0.48	0.36	0.373	0.771
	2020	0.078 U	0.069 U	0.083 U	12.9 U	0.29	0.181	0.196	0.311
MW-22 (Filtered)	2013	0.026 U	0.075 U	0.031 U	0.184 U	0.643 J	-0.039 U	0 U	0.157 J
	2014	0.197	0.025 U	0.025 U	0.484 U	-0.037 U	-0.025 U	-0.007 U	0.059 J
	2015	0.044 U	-0.009 U	0.017 U	8.2 J	0.073 U	-0.035 U	0.012 U	0.095 J
	2016	0.059 J	0.123 J	0 U	-0.187 U	0.663 J	-0.144 U	0.01 U	0.034 U
	2017	-0.003 U	0.119 U	0.088 J	-1.33 U	0.348 J	-0.024 U	0 U	0.103 J
	2018	0.088 J	0.255 U	0.067 U	-0.837 U	0.138 J	0.017 J	-0.004 U	0.105 J
	2019	-0.011 U	0.043 U	0.027 U	10.4 U	-0.016 U	0.012 U	0.021	0.114 J
	2020	0.073 U	0.026 U	0.026 U	10.6 U	0.115 U	0.107 U	0.046 U	-0.014 U
MW-23	2004	0.635 J		0.255 U	R			0.561 J	
MW-24	2004	0.632 U		0.496 U	10.6 U			0.555 J	
MW-25	2004	1.07 J		0.06 U	11.9 U			R	
MW-26	2004	0.732 U	0.815 U	0.537 U	13 U		0.345 U	0.455 J	
MW-29	2004	0.397 U	0.744 U	0.506 U	11.3 U		0.446 U	0.215 U	
MW-30A	2004	0.912 U		0.383 U	R			0.726 J	
MW-31	2004	0.558 U		0.323 U	12 U			0.502 J	
MW-32	2004	R		0.084 U	12.3 U			0.207 U	

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-33	2004	0.488 U	0.619 U	0.448 U	11.8 U		0.323 U	0.323 J	
	2013	-0.012 U	-0.055 U	-0.016 U	1.79 U	0.817 J	-0.028 U	0.024 U	0.448
	2014	0.064 U	0.119 U	0.03 U	1.69 U	0.022 U	0.077 J	-0.009 U	0.213 J
	2015	0.053 U	0.103	0.007 U	-0.646 U	0.084 U	0.081 U	0.271	0.513 J
	2016	0.018 U	0.094 U	0.037 J	0.82 U	0.329 J	-0.025 U	0.022 J	0.663
	2017	0.017 U	0.077 U	0.041 U	1.27 U	0.33 U	-0.009 U	0 U	0.221 J
	2018	0.027 U	0.033 U	0.043 U	0.373 U	0.128 U	0.008 U	-0.004 U	0.383 J
	2019	-0.014 U	0.01 U	0.006 U	10.4	0 U	0.033 U	0.021	0.187 J
MW-33 (Filtered)	2020	0.073 U	0.027 J	0.063 U	10.4 U	0.124 U	0.11 U	0.039 U	0.286
	2013	0.038 U	0.124 U	0.083 J	0.087 U	0.478 U	0.031 J	0 U	0.295 J
	2014	0.021 U	0.094 U	0.028 U	3.09 U	-0.011 U	-0.031 U	-0.008 U	0.2 J
	2015	0.023 U	-0.039 U	0.057 U	-0.468 U	0.06 U	-0.035 U	-0.012 U	0.259 J
	2016	0.003 U	0.073 U	0.035 J	3.3 U	0.326 J	-0.052 U	-0.005 U	0.28
	2017	0.013 U	0.152 J	0.092 J	-1.3 U	0.269 U	-0.048 U	0 U	0.159 J
	2018	0.062 J	0.144 U	0.053 U	-1.9 U	0.109 U	-0.009 U	-0.004 U	0.361 J
	2019	-0.014 U	0.021 U	0.012 U	11.6 U	0.008 U	0.034 U	0.017 U	0.172 J
MW-35	2020	0.077 U	0.067 U	0.076 U	10.3 U	0.11 U	0.101 U	0.039 U	0.339
MW-36	2004	0.882 U		0.101 U	11 U			0.206 J	
MW-36	2004	0.59 U		R	R			0.368 J	
MW-38	2004	R		0.0625 U	12.1 U			0.509 J	
	2017	0.028 U	0.062 U	0.013 U	0.644 U	0.352 J	0.02 U	-0.004 U	0.171 J
MW-38 (Filtered)	2017	0.068 J	0.261 U	0.065 U	-2.7 U	0.301 U	-0.024 U	-0.004 U	0.134 J
MW-39	2004	0.482 U	0.814 U	0.467 U	13.9 U		0.527 J	0.175 U	
	2013	0.003 U	0.074 U	0.012 U	-3.83 U	0.366 U	0.004 U	0 U	0.408
	2014	0.02 U	0.069 U	0.026 U	2.28 U	0.039 U	-0.079 U	-0.049 U	0.143 J
	2015	-0.029 U	0.061 U	0.061	6.9 J	0.415	0.024 U	0.182	0.458
	2016	0.015 U	0.023 U	0.033 J	0 U	0.511 J	-0.248 U	0.011 U	0.504 J
	2017	0.034 U	0.058 U	-0.017 U	1.9 U	0.518 J	0.04 U	0 U	0.903
	2018	0.06 J	0.125 U	0.101 J	1.47 U	0.161 J	-0.007 U	0.02 J	0.173 J
	2020	0.074 U	0.08 U	0.027 U	10.6 U	0.214	0.11 J	0.081	0.451
MW-39 (Filtered)	2013	-0.02 U	0.235	0.051 U	-2.47 U	0.309 U	-0.041 U	0 U	0.46
	2014	0.002 U	0.037 U	0.009 U	-1.79 U	0.003 U	0.088 J	0.049 U	0.181 J
	2015	0.018 U	0 U	0.048 J	5.7 J	-0.092 U	0.011 U	-0.011 U	0.103 J
	2016	-0.006 U	0.096 J	-0.04 U	-3.5 U	0.542 J	-0.011 U	0.019 U	0.438 J
	2017	-0.014 U	0.051 U	-0.003 U	-2.15 U	0.372 U	0.022 J	-0.005 U	0.514 J
	2018	-0.015 U	0.08 U	0.079 J	0.61 U	0.142 J	0.014 U	0 U	0.202 J
	2020	0.079 U	0.074 U	0.06 U	11.5 U	0.125 U	0.104 U	0.031 U	0.191 J
MW-40	2004	0.681 U		0.185 U	10.3 U			0.245 J	
	2013	0.101 U	-0.016 U	0.107 J	1.18 U	0.791 J	-0.003 U	0.036 J	0.11 J
	2014	-0.005 U	0.023 U	0 U	6.82 J	0.094 J	0.021 U	0 U	0.042 U
	2015	0.056 U	0.057 U	0.023 U	-0.234 U	0.048 U	-0.007 U	0 U	0.096 J
	2016	0.034 U	0.099 U	0.006 U	-6.79 U	0.466 U	-0.061 U	-0.006 U	0.051 U
	2017	0.041 U	0.137 J	0.016 U	7.35 J	0.322 U	-0.027 U	0 U	0.08 J
	2019	-0.01 U	-0.005 U	0.012 U	3.2 U	-0.008 U	0.092 U	0.015 U	0.071 J
	2020	0.077 U	0.03 U	0.064 U	11.8 U	0.131 U	0.113 U	0.027 U	-0.013 U
MW-40 (Filtered)	2013	0.066 U	0.074 U	0.046 U	4.84 J	0.502 U	0.004 U	0 U	0.099 J
	2014	0.043 U	0.13 U	0.044 U	7.37 J	-0.085 U	-0.027 U	0 U	0.038 U
	2015	-0.034 U	-0.1 U	0.02 U	0.562 U	0.033 U	-0.074 U	0 U	0.111 J
	2016	0.048 J	0.155 J	-0.057 U	-8.26 U	0.453 U	-0.031 U	-0.006 U	0.044 U
	2017	0.045 J	0.187 J	0.011 U	-4.39 U	0.291 U	0.013 U	-0.004 U	0.052 U
	2019	-0.014 U	0 U	0.017 U	1 U	0.055 U	0.031 U	0.011 U	0.042 J
MW-41	2020	0.071 U	0.052 U	0.063 U	9.7 U	0.108 U	0.109 U	0.027 U	-0.013 U
MW-43	2004	0.646 U		0.376 U	11.3 U			0.481 J	
MW-43	2004	0.691 U		0.0715 U	10.7 U			0.228 J	

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-44	2015	-0.042 U	0.183 J	0.043 J	6.32 U	0.027 U	0.039	0 U	0.375
	2016	0.094 J	0.009 U	0.031 J	4.16 U	0.369 J	-0.049 U	-0.005 U	1.06
	2017	0.161 J	0.15 J	0.003 U	2.93 U	0.434 U	-0.005 U	0.01 J	0.567 J
	2018	-0.011 U	0.121 U	0.016 U	0.164 U	0.649 J	0.32	0.453	17.7
	2019	0.01 U	-0.005 U	0.01 U	12.4 U	0.63	0.4	0.419	1.7
	2020	0.073 U	0.048 J	0.026 U	10.4 U	0.106 U	0.101 U	0.105	1.57
MW-44 (Filtered)	2015	0.096 J	0.148 J	0.053 J	1.44 U	-0.129 U	0.014 U	-0.028 U	0.369
	2016	0.029 J	0.102 U	0.021 U	-9.23 U	0.465 U	-0.095 U	0 U	1.23
	2017	0.025 U	0.169 J	0.001 U	1.2 U	0.381 U	-0.032 U	-0.005 U	0.387 J
	2018	0.037 U	0.091 U	0.056 J	1.69 U	0.051 U	0.016 J	0.016 U	0.326 J
	2019	-0.009 U	0.004 U	-0.003 U	3.7 U	0.045 U	0.004 U	0.007 U	0.521
	2020	0.077 U	0.025 U	0.052 U	10.1 U	0.127 U	0.105 U	0.014 J	1.57
MW-45	2019	-0.016 U	0.01 U	0.038 U	4.1 U	1.37	1.1	0.8	9.36
MW-45 (Filtered)	2015	0.008 U	0.149 J	0.054 J	1.4 U	0.03 U	0 U	0.015 U	5.91
MW-47	2017	0.007 U	0.088 U	0.05 U	2.29 U	0.531 J	0.084 J	0.058	1.05
	2018	0.073 J	0.035 U	0.07 U	-0.308 U	0.141 J	0.019 U	0.018 J	0.533 J
	2019	-0.017 U	0.026 U	0.036 U	-4.2 U	0.078	0.053 U	0.063	0.853
	2020	0.075 U	0.057 U	0.069 U	10.6 U	0.52	0.46	0.4	1.97
MW-47 (Filtered)	2017	0.021 U	0.093 U	0.027 U	4.58 U	0.379 J	-0.004 U	-0.004 U	0.249 J
	2018	0.046 U	0.092 U	0.036 U	-0.246 U	0.106 U	0.008 U	0.015 J	0.229 J
	2019	0.002 U	-0.009 U	0.124	5.3 U	0.008 U	0.02 U	-0.013 U	0.255 J
MW-50	2016	0.088	0.1 U	0.024 J	2.44 U	0.392 J	0.007 U	0 U	1.46
	2017	0.033 U	0.085 J	0.004 U	3.73 U	0.281 U	0.03 U	0.024 J	0.393 J
MW-50 (Filtered)	2016	0.051 J	0.031 U	0.003 U	1.31 U	0.352 J	-0.081 U	-0.001 U	0.811
	2017	0.057 U	0.133 J	0.041 J	2.57 U	0.75 J	-0.004 U	0 U	0.547 J
MW-51	2004	1.01 J		0.0843 U	10.7 U			0.335 J	
	2014	0.03 U	0.104 U	0.016 U	9.72 J	-0.055 U	-0.047 U	0.022 U	0.247 J
	2015	0.046 U	0.077 U	0.029 J	-5.33 U	-0.071 U	0.055 U	0.014 U	0.356
	2016	-0.007 U	0.056 U	0.019 U	0.205 U	0.091 U	-0.143 U	-0.015 U	0.231
	2017	0.022 U	0.177 U	0.03 U	0.881 U	-0.013 U	0.029 U	0.017 J	0.305 J
	2018	0.031 U	0.164 J	0.044 J	-0.504 U	0.463 J	0.012 U	0.093 J	9.48
	2020	0.08 U	0.065 U	0.025 U	10 U	0.28	0.104 U	0.085	0.574
MW-51 (Filtered)	2014	0.032 U	0.153 U	0.029 U	3.89 U	-0.051 U	-0.075 U	0 U	0.234 J
	2015	0.076	0.145 J	0.022 U	-0.83 U	-0.015 U	-0.015 U	-0.015 U	0.362
	2016	-0.034 U	0.001 U	0.012 U	2.71 U	0.49 J	-0.285 U	-0.012 U	0.239
	2017	0.036 U	0.297 J	0.101 J	-1.54 U	0.167 U	-0.003 U	0 U	0.294 J
	2020	0.075 U	0.067 U	0.048 J	10.6 U	0.11 U	0.103 U	0.032 U	0.354
MW-52	2004	0.901 U		0.2 U	11 U			0.487 J	
	2013	0.041 U	0.155 J	0.026 U	-0.098 U	0.437 U	-0.027 U	-0.007 U	0.233 J
	2014	0.088 J	0.028 U	0.033 U	2.3 U	0.033 U	-0.011 U	0.027 J	0.216 J
	2015	0.075 J	0.115	-0.042 U	3.45 U	-0.069 U	-0.027 U	0.04 J	0.506 J
	2018	0.042 U	0.092 U	0.059 J	2.84 J	0.008 U	-0.007 U	0 U	0.47 J
	2019	0.016 U	-0.004 U	0.003 U	9.5 U	0.125	0.067 U	0.051	0.458
	2020	0.074 U	0.079 U	0.027 U	10.5 U	0.119 U	0.101 U	0.027 J	0.093 J
MW-52 (Filtered)	2013	0.088 J	0.136 J	0.035 U	-2.56 U	0.314 U	-0.015 U	-0.007 U	0.258 J
	2014	0.189 J	0.085 U	-0.003 U	4.09 U	-0.066 U	-0.072 U	0.007 U	0.191 J
	2015	0.077 J	-0.018 U	0.065 U	-6.87 U	0.176 J	0.073 U	0.012 U	0.426 J
	2018	-0.014 U	0.171 J	0.021 U	3.37 J	0.07 U	-0.008 U	-0.004 U	0.41 J
	2019	-0.011 U	0.006 U	0.032 U	14.9	0.024 U	0.005 U	0.003 U	0.339 J
	2020	0.077 U	0.072 U	0.059 U	11.3 U	0.11 U	0.108 U	0.04 U	0.124 J

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
MW-53	2014	-0.031 U	0.152	-0.012 U	-0.76 U	0.178 J	-0.039 U	0.052 J	7.24
	2015	0.043 J	0.174 J	0.084 J	3.13 U	0.081 U	0.087 J	0 U	3.58
	2016	-0.015 U	0.033 U	0.031 U	5.43 U	0.338 J	0.001 U	-0.006 U	3.29
	2017	-0.041 U	0.079 U	0.007 U	0 U	0.372 J	-0.026 U	-0.004 U	2.84
	2018	0.038 U	0.039 U	0.091 J	0.524 U	1.11 J	0.692	0.647	4.71
MW-53 (Filtered)	2014	0.041 U	0.084 J	0.017 U	0 U	0.047 U	-0.024 U	0 U	6.63
	2015	0.09 J	0.174	0.02 U	-2.62 U	-0.112 U	0.015 U	0.092 J	3.99
	2016	0.021 U	0.003 U	-0.051 U	3.18 U	0.351 J	-0.117 U	0 U	3.37
	2017	0.042 U	0.099 U	0.035 U	-1.24 U	0.368 J	-0.014 U	0 U	2.42
	2018	0.083 J	0.226 J	0.015 U	2.4 U	0.433 J	0.145 J	0.184	5.79
MW-56	2004	0.742 U		0.418 U	R			0.411 J	
MW-58	2004	0.498 J	0.634 DL	0.193 U	13.8 DL		0.352 U	0.2 J	
MW-59	2004	0.485 U		0.351 U	10.4 U			0.391 J	
	2013	0.097 U	0.26 J	0.097	4.07 U	0.714 J	-0.004 U	-0.02 U	0.199 J
	2014	-0.012 U	0.091 U	0.038 U	6.26 J	-0.003 U	-0.046 U	0 U	0.176 J
	2015	0.045 U	0.086 J	0.058	4.73 U	-0.051 U	-0.037 U	0 U	0.168 J
	2016	-0.013 U	0.044 U	-0.05 U	2.59 U	0.256 U	-0.005 U	-0.006 U	0.044 U
	2017	0.064 J	0.055 U	0.001 U	-1.46 U	0.398 U	-0.003 U	-0.004 U	0.108 J
	2018	0.038 U	0.138 U	0.043 U	-2.32 U	0.141 J	-0.007 U	0 U	0.159 J
	2019	-0.023 U	-0.001 U	-0.008 U	4.5 U	0.023 U	0.016 U	0.003 U	0.027 U
	2020	0.087 U	0.049 U	0.049 U	12.9 U	0.122 U	0.103 U	0.026 U	0.05 J
MW-59 (Filtered)	2013	0.037 U	0.17 J	0.069 J	2.63 U	0.46 U	0.067 U	-0.028 U	0.191 J
	2014	0.03 U	0.018 U	0.007 U	4.57 J	-0.034 U	-0.023 U	-0.006 U	0.057 J
	2015	0.028 U	0.071 U	0.041 J	0.193 U	-0.081 U	-0.039 U	0.013 U	0.164 J
	2016	0.012 U	0.089 U	-0.031 U	2.96 U	0.388 J	-0.005 U	-0.006 U	0.042 U
	2017	-0.025 U	0.144 J	0.045 U	-2.07 U	0.312 U	0.028 U	0.018 J	0.089 J
	2018	-0.01 U	0.211 J	0.111 J	-1.14 U	0.083 U	-0.008 U	-0.004 U	0.151 J
	2019	-0.006 U	0.025 U	0.018 U	8.6 U	0.061 U	0.017 U	0.014 U	0.028 U
	2020	0.077 U	0.069 U	0.078 U	10.8 U	0.105 U	0.102 U	0.017 J	0.028 U
MW-64	2004	0.61 U		0.22 U	11.1 U			R	
MW-69	2004	R		0.39 U	11.5 U			0.552 J	
MW-81	2013	0.182 J	0.13 U	0.036 J	-4.34 U	0.053 U	-0.043 U	-0.115 U	0.645
MW-81 (Filtered)	2013	0.072 J	0.014 U	0.041 J	-2.73 U	0.554 J	-0.054 U	-0.017 U	0.67
NWS-01A-02	2004	0.362 U		0.123 U	12.7 U			0.215 J	
NWS-01A-03	2004	0.745 U		0.14 U	12.4 U			0.462 J	
NWS-01A-04	2004	0.826 J		0.11 U	11.7 U			0.161 U	
NWS-03-03	2004	0.623 U		0.0745 U	10.8 U			0.313 J	
NWS-05-04	2004	0.763 U		R	12.4 U			0.483 J	
PZ-01	2015	0.046 J	0.181	0.052 J	-0.699 U	0.027 U	-0.053 U	-0.026 U	0.326 J
	2016	0.102 J	0.118 U	-0.043 U	-0.359 U	0.353 J	-0.046 U	0.023 U	0.112 J
	2017	0.054 J	0.226 J	0.046 U	4.39 J	0.334 U	-0.014 U	0.02 J	0.081 J
	2018	0.042 U	0.122 U	0.016 U	6.15 J	-0.033 U	-0.007 U	0 U	0.058 U
	2019	-0.014 U	0 U	0 U	-0.2 U	0.047 U	-0.028 U	0.003 U	0.058 J
	2020	0.079 U	0.03 J	0.04 J	11.1 U	0.12 U	0.102 U	0.025 U	0.18 J
PZ-01 (Filtered)	2015	-0.036 U	0.016 U	0.049 J	3.28 U	-0.052 U	0 U	0.013 J	0.291 J
	2016	0.017 U	0.062 U	-0.083 U	-2.91 U	0.108 U	-0.037 U	0.017 U	0.098 J
	2017	0.012 U	0.046 U	0.042 U	2.88 U	-0.005 U	0.035 U	0.016 J	0.077 J
	2018	-0.014 U	0.147 J	0.038 J	7.75	-0.001 U	-0.008 U	0.017 U	3.25
	2019	-0.002 U	0.029 U	-0.001 U	1.4 U	0.031 U	0.026 U	0.007 U	0.02 U
PZ-08	2017	0.027 U	0.024 U	0.051 U	1.56 U	0.343 J	0.036 U	0.08	0.497
PZ-08 (Filtered)	2017	0.109 J	-0.005 U	0.102 J	5.78 U	0.37 J	0.014 U	0.016 U	0.184 J

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
PZ-09	2013	0.104 U	0.123 U	0.088 J	2.9 U	0.54 J	-0.015 U	-0.006 U	0.126 J
	2014	0.178 J	0.144 U	0.082 U	5.46 U	0.014 U	0.026 U	0.025 J	0.167 J
	2015	0.025 U	0.167 J	0.047 U	1.6 U	0.041 U	0.006 U	0 U	0.099 U
	2016	0.017 U	0.003 U	0.053 J	-10.9 U	0.542 J	-0.074 U	-0.001 U	0.036 U
	2017	-0.015 U	0.041 U	0.019 U	1.68 U	0.246 U	0.02 J	-0.004 U	0.06 U
	2018	0.042 U	0.288 U	0.073 U	2.73 U	0.255 J	-0.006 U	-0.006 U	0.128 J
	2019	-0.023 U	0.032	0.011 U	2.9 U	-0.086 U	0.036 U	0.006 U	0.053 J
	2020	0.089 U	0.027 U	0.027 U	10.6 U	0.113 U	0.104 U	0.038 U	-0.009 U
PZ-09 (Filtered)	2013	0.017 U	0.135 U	0.063 J	0.974 U	0.515 U	0 U	0 U	0.127 J
	2014	0.166	0.053 U	0.004 U	3.03 U	0.034 U	-0.005 U	-0.007 U	0.035 U
	2015	0.014 U	0.07 J	0.056 U	1.16 U	-0.012 U	0.022 U	-0.01 U	0.087 U
	2016	0.039 J	0.175 J	-0.012 U	-3.51 U	0.517 J	-0.024 U	-0.005 U	0.032 U
	2017	-0.005 U	0.069 U	0.062 U	1.74 U	0.331 U	-0.023 U	-0.004 U	0.052 U
	2018	-0.017 U	0.134 U	0.071 U	-0.587 U	0.073 U	-0.008 U	0 U	0.121 J
	2019	-0.019 U	0.031 U	-0.013 U	-2.9 U	0.031 U	0.005 U	0 U	0.029 U
	2020	0.074 U	0.07 U	0.05 J	10.5 U	0.18 U	0.145 U	0.015 U	-0.025 U
SP-CR-01	2004	0.163 U		0.632 U	10.6 U			0.39 J	
SP-CR-02	2004	0.169 U		0.631 U	9.33 U			0.606 J	
SP-DR-01	2004	0.728 U	0.38 U	0.38 U	13.9 U		0.945 J	0.501 J	
	2013	0.128 J	-0.003 U	0.114 J	-4.1 U	0.502 J	-0.06 U	0.091 J	1.63
	2014	0.003 U	0.073 U	0.1 J	14.7 J	0.163 U	-0.049 U	0.039 U	5.3
	2015	0.009 U	0.07 U	0.002 U	-6.35 U	0.105 U	0.011 U	0 U	0.275 J
	2016	0.077	0.04 U	0.018 U	4.56 U	0.301 U	-0.027 U	-0.013 U	0.744
	2017	0.048 U	0.093 J	0.003 U	0.475 U	0.649 J	0.137 J	-0.007 U	0.427 J
	2018	0.032 U	0.078 U	0.09	4.02 J	0.339 J	0.068 J	-0.007 U	11.6
	2019	-0.03 U	-0.008 U	0.038 U	11.1	0.084 U	0.125	0.037 U	0.059 J
	2020	0.079 U	0.061 U	0.061 U	12.3 U	0.104 U	0.108 U	0.042 U	0.188 J
SP-DR-01 (Filtered)	2014	0.09 J	0.073 U	0.049 U	8.03 J	0.181 J	0.002 U	-0.01 U	1.45
	2015	0.026 U	0.09 J	0.027 U	-2.48 U	0.198 J	0.039 J	0.006 U	0.161 J
	2016	-0.039 U	0.122 U	0.099	3.96 U	0.198 U	-0.07 U	0 U	0.134 J
	2017	0.043 U	0.105 J	-0.027 U	-4.16 U	0.608 J	0.03 J	-0.007 U	0.276 J
	2018	0.081 J	0.061 U	0.018 U	16.6	0.185 U	-0.009 U	0 U	3.39
	2019	0.007 U	0.021 U	0.047 U	11.2 U	0.01 U	0.005 U	0.005 U	0.054 J
	2020	0.08 U	0.026 U	0.067 U	11.1 U	0.105 U	0.105 U	0.032 U	0.006 U
SP-DR-03	2004	0.614 U		0.311 U	32.5 DL			0.53 J	
SP-DR-04	2004	0.814 U		0.45 U	18.7 DL			0.323 U	
SP-DR-05	2004	0.414 U	0.958 U	0.547 U	13.9 U		0.974 J	0.556 J	
	2013	0.074 J	0.195 J	0.018 U	-0.298 U	0.682 J	-0.05 U	-0.208 U	0.149 J
SP-DR-05 (Filtered)	2013	-0.054 U	0.187 J	0.028 J	-0.503 U	0.406 U	-0.063 U	-0.021 U	0.13 J
WS/SE-CR-01	2004	0.386 U		0.211 U	9.92 U			0.166	
WS/SE-CR-02	2004	0.39 U		0.523 U	11.1 U			0.348 J	
WS/SE-CR-03	2004	0.395 U		0.214 U	9.74 U			0.166 J	
WS/SE-CR-04	2004	0.573 U		0.221 U	9.65 U			0.383 J	
WS/SE-CR-05	2004	0.491 U		0.415 U	10.5 U			0.306 J	
WS/SE-CR-06	2004	0.54 U		0.41 U	9.39 U			0.28 J	
	2015	0.065 J	0.019 U	-0.007 U	-5.46 U	-0.093 U	-0.013 U	0.051	0.144 J
	2016	0.012 U	0.118 U	0.028 U	-8.5 U	0.526 J	-0.004 U	-0.006 U	0.098 J
	2017	-0.014 U	0.128 U	0.036 U	6.79 J	0.348 J	0.023 J	0 U	0.132 J
	2019	-0.004 U	0.001 U	0.006 U	4.8 U	-0.009 U	0.042 U	0.003 U	0.055 J
	2020	0.073 U	0.052 U	0.064 U	10.9 U	0.116 U	0.103 U	0.039 U	0.041 J
WS/SE-CR-06 (Filtered)	2015	0.002 U	0.023 U	0.046 U	-0.173 U	-0.065 U	0.011 U	0.011 J	0.06 U
	2016	0.058 J	0.149 J	0 U	-2.38 U	0.437 U	-0.011 U	0 U	0.098 J
	2017	0.071 J	0.082 U	0.092 J	6.64 J	0.406 J	-0.027 U	0 U	0.081 J
	2020	0.079 U	0.074 U	0.074 U	15 U	0.17 U	0.126 U	0.053 U	0.055 J
WS/SE-DR-01	2004	0.764 J		0.451 U	13.2 J			0.409 J	
WS/SE-DR-02	2004	0.649 U		R	13.6 U			0.466 J	

Well	Year	AMERICIUM-241	PLUTONIUM-238	PLUTONIUM-239/240	PLUTONIUM-241	THORIUM-228	THORIUM-230	THORIUM-232	TOTAL URANIUM (UG/L)
Units		pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	ug/L
WS/SE-DR-03	2004	0.35 U		0.401 U	13.7 U			0.516 J	
WS/SE-DR-04	2004	0.51 U		0.487 U	15.3 DL			0.419 J	
WS/SE-DR-05	2004	0.494 U		0.359 U	21.8 DL			0.183 U	
WS/SE-DR-06	2004	0.21 U		R	11 U			0.332 J	

Table 7. Groundwater Sampling Summary of Detections (2003-2020)

Metal	Number of Samples	Number of Detections	Minimum	Maximum	Average	USEPA or PADEP Primary or Secondary Drinking Water Standard (1)	SLDA-specific Upgradient Average
	n	n	UG/L	UG/L	UG/L	UG/L	UG/L
ALUMINUM	375	276	1.4	55000	1785.49	200.0	NC
ANTIMONY	374	65	0.2	6.4	1.14	6.0	NC
ARSENIC	375	82	0.62	120	9.38	10.0	NC
BARIUM	375	374	3.5	1600	216.62	2000.0	NC
BERYLLIUM	355	74	0.1	33	3.86	4.0	NC
CADMIUM	375	53	0.059	8.2	1.01	5.0	NC
CALCIUM	375	374	3100	430000	46785.83	NA	NC
CHROMIUM, TOTAL	375	279	0.31	4400	22.36	100.0	NC
COBALT	375	252	0.12	180	7.84	NA	NC
COPPER	375	232	0.23	150	8.69	1000.0	NC
IRON	375	331	20	310000	8475.36	300.0	NC
LEAD	375	104	0.26	39	2.72	15.0	NC
MAGNESIUM	375	374	590	100000	13571.66	NA	NC
MANGANESE	375	367	0.28	4500	262.92	50.0	NC
MERCURY	375	38	0.047	0.15	0.09	2.0	NC
NICKEL	375	328	0.22	680	22.68	100.0	NC
POTASSIUM	375	371	500	80000	3122.21	NA	NC
SELENIUM	375	73	1.5	14	2.98	50.0	NC
SILVER	374	30	0.18	1.2	0.48	100.0	NC
SODIUM	375	373	1100	240000	17554.96	NA	NC
THALLIUM	375	38	0.16	1.7	0.38	2.0	NC
VANADIUM	375	65	0.49	27	2.92	NA	NC
ZINC	375	316	1.8	2400	55.49	5000.0	NC
TOTAL URANIUM	383	310	0.036	17.7	0.62	30	0.9
Radionuclide	n	n	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
AMERICIUM-241	501	75	0.026	0.197	0.09	15	ND
PLUTONIUM-238	403	143	0.027	0.585	0.16	15	ND
PLUTONIUM-239/240	487	94	0.011	0.224	0.07	15	ND
PLUTONIUM-241	489	32	2.84	14.9	7.00	300	ND
THORIUM-228	383	144	0.078	4.23	0.52	15	ND
THORIUM-230	397	53	0.016	1.32	0.21	15	0.74
THORIUM-232	487	81	0.01	10.7	0.42	15	0.39

NOTES:

(1) - USEPA Maximum Contaminant Levels (MCLs), Secondary MCLs, or Pennsylvania DEP MCLs

(2) - USEPA, Directive #9283.1-14, Use of Uranium Drinking Water Standards under 40 CFR 141 and 40 CFR 192.

NA - No Standard Available

Average exceeds water quality standard.

NC - Not Calculated for non-FUSRAP constituents of concern

ND - Not Detected

Table 8. Surface Water Sampling Summary of Detections (2004-2020)

Metal	Number of Samples	Number of Detections	Minimum	Maximum	Average	USEPA or PADEP Primary or Secondary Drinking Water Standard (1)
	n	n	UG/L	UG/L	UG/L	UG/L
ALUMINUM	27	24	3.3	11000	827.35	200.0
ANTIMONY	27	11	0.38	2.8	1.24	6.0
ARSENIC	27	14	0.88	7.1	3.28	10.0
BARIUM	27	27	28	320	92.00	2000.0
BERYLLIUM	24	8	0.38	2.7	1.12	4.0
CADMIUM	27	6	0.36	3.3	1.43	5.0
CALCIUM	27	27	3600	52000	23685.19	NA
CHROMIUM, TOTAL	27	19	0.35	20	2.45	100.0
COBALT	27	21	0.14	17	5.18	NA
COPPER	27	19	0.68	12	4.21	1000.0
IRON	27	26	67	20000	4310.27	300.0
LEAD	27	14	0.26	20	4.82	15.0
MAGNESIUM	27	27	710	24000	8041.11	NA
MANGANESE	27	27	8	5500	1636.81	50.0
MERCURY	27	4	0.073	0.11	0.09	2.0
NICKEL	27	24	0.66	21	6.02	100.0
POTASSIUM	27	27	920	6200	2159.63	NA
SELENIUM	27	2	1.5	2.9	2.20	50.0
SILVER	27	4	0.24	1	0.50	100.0
SODIUM	27	27	1100	219000	17629.63	NA
THALLIUM	27	6	0.22	1.3	0.47	2.0
VANADIUM	27	11	0.8	17	3.82	NA
ZINC	27	27	2.7	140	19.80	5000.0
TOTAL URANIUM	27	25	0.041	11.6	1.12	30
Radionuclide	n	n	pCi/L	pCi/L	pCi/L	pCi/L
AMERICIUM-241	71	9	0.058	0.262	0.10	15
PLUTONIUM-238	31	8	0.09	0.195	0.13	15
PLUTONIUM-239/240	67	7	0.028	0.114	0.08	15
PLUTONIUM-241	67	7	4.02	16.6	9.70	300
THORIUM-228	27	13	0.181	0.682	0.41	15
THORIUM-229	7	7	1.7	3.88	2.90	15
THORIUM-230	31	10	0.023	0.993	0.36	15
THORIUM-232	67	3	0.011	0.091	0.05	15

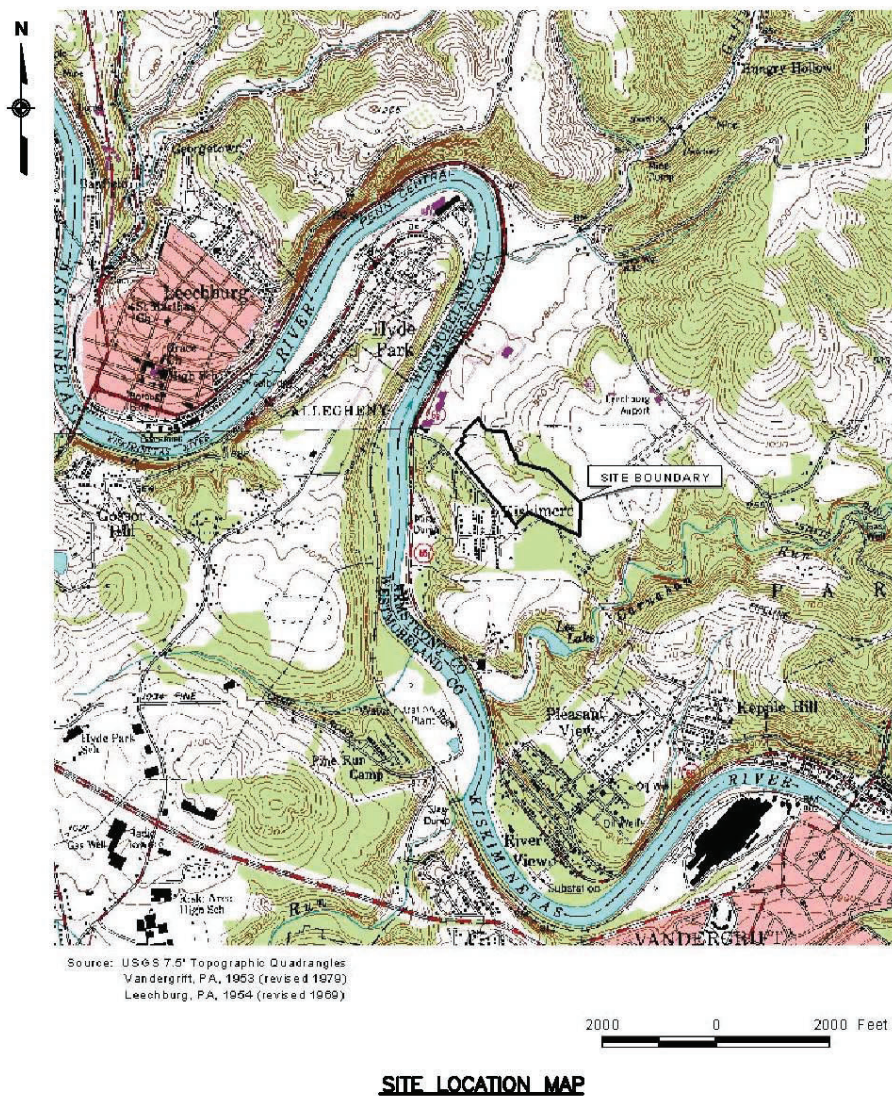
NOTES:

(1) - USEPA Maximum Contaminant Levels (MCLs), Secondary MCLs, or Pennsylvania DEP MCLs

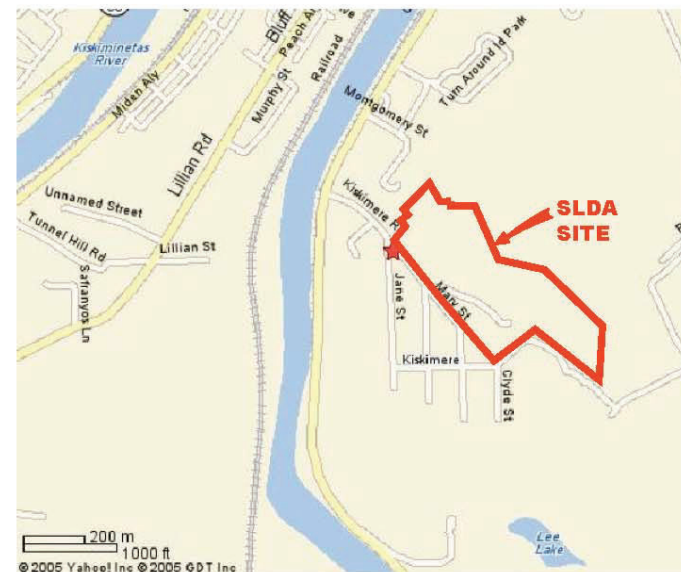
NA - No Standard Available

Average exceeds water quality standard.

FIGURES



STATE KEY MAP



VICINITY MAP

**SHALLOW LAND DISPOSAL AREA
SITE LOCATION MAP**

Figure 1

Figure 1. Shallow Land Disposal Area (SLDA) Site Location

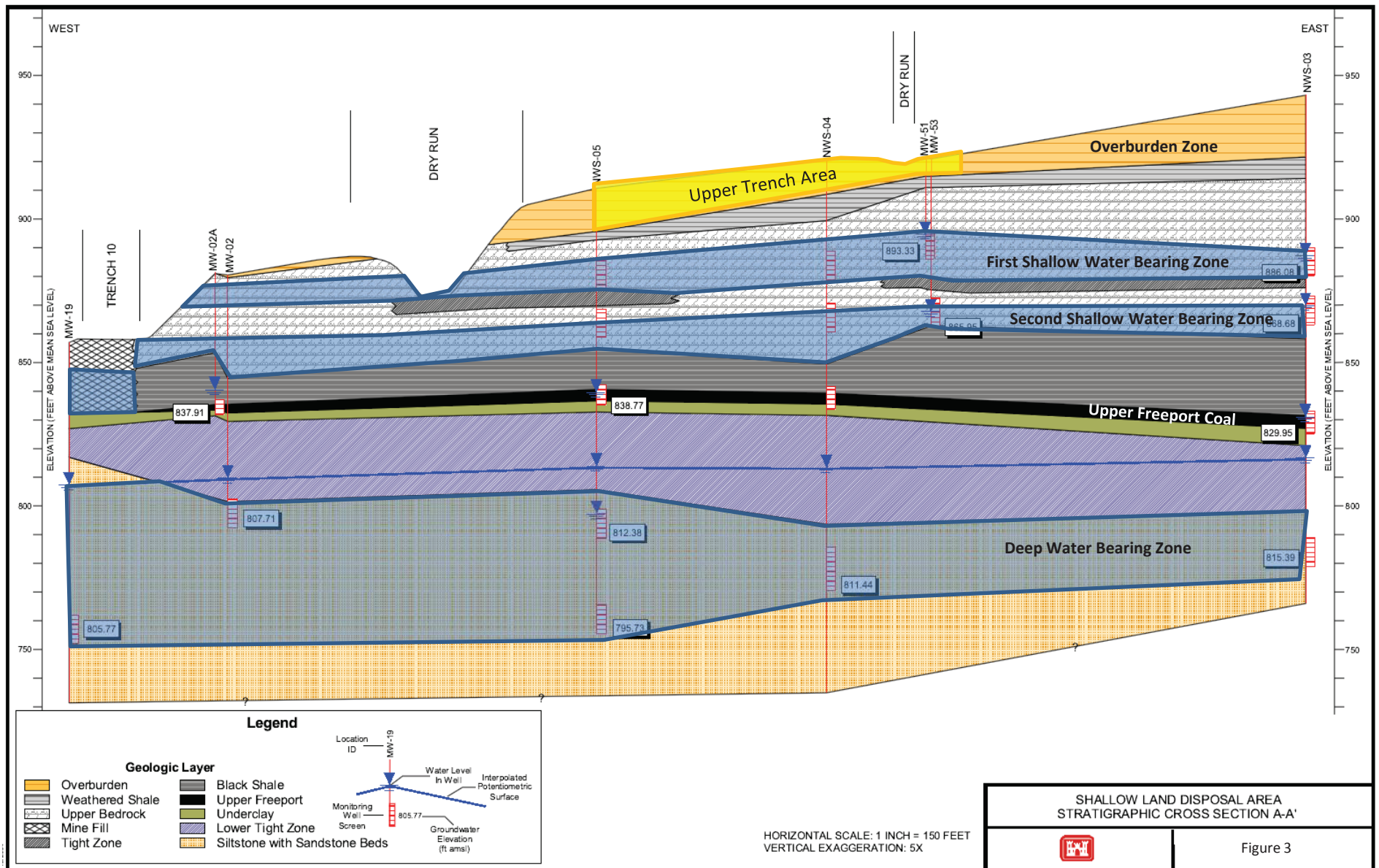


Figure 3. Northwest to Southeast Geologic Cross Section Through SLDA



Legend

- | | | | |
|--|---|--|----------------------------|
| | Monitoring Well | | Groundwater Flow Direction |
| | Piezometer | | Trench |
| | Temporary Piezometer | | Fenceline |
| | Groundwater Elevation Contour (ft amsl) | | Site Boundary |

0 110 220 440
Feet



U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
US Army Corps of Engineers
Buffalo District
BUFFALO, NY

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**GROUNDWATER ELEVATION CONTOUR MAP
OVERBURDEN - OCTOBER 2020**

**SHALLOW LAND DISPOSAL AREA
PARKS TOWNSHIP, PENNSYLVANIA**

FIGURE 4



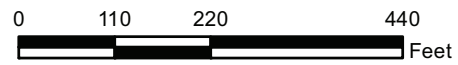
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Legend - Monitoring Well - Piezometer - Temporary Piezometer - Groundwater Elevation Contour (ft amsl) - Groundwater Flow Direction - Trench - Fenceline - Site Boundary	Note: MW-46 and TPZ-05 were not used to generate the potentiometric surface due to possible anomalous readings. 0 110 220 440 Feet	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Document Name: 210222_Oct20WgCon_1S.mxd Drawn By: H5TDESPM Date Saved: 22 Feb 2021 Time Saved: 10:40:38 AM	GROUNDWATER ELEVATION CONTOUR MAP FIRST SHALLOW BEDROCK ZONE - OCTOBER 2020 SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 5
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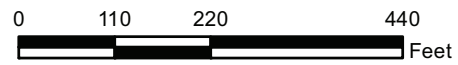
Legend - Monitoring Well - Piezometer - Temporary Piezometer - Groundwater Elevation Contour (ft amsl) - Groundwater Flow Direction - Trench - Fenceline - Site Boundary	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Buffalo District Document Name: 210222_Oct20WgCon_2S.mxd Drawn By: H5TDESPM Date Saved: 22 Feb 2021 Time Saved: 10:38:43 AM	GROUNDWATER ELEVATION CONTOUR MAP SECOND SHALLOW BEDROCK ZONE - OCTOBER 2020 <table border="1"><tr><td data-bbox="2128 1830 2719 1951">SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA</td><td data-bbox="2719 1830 3061 1951">FIGURE 6</td></tr></table>		SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 6
SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 6				





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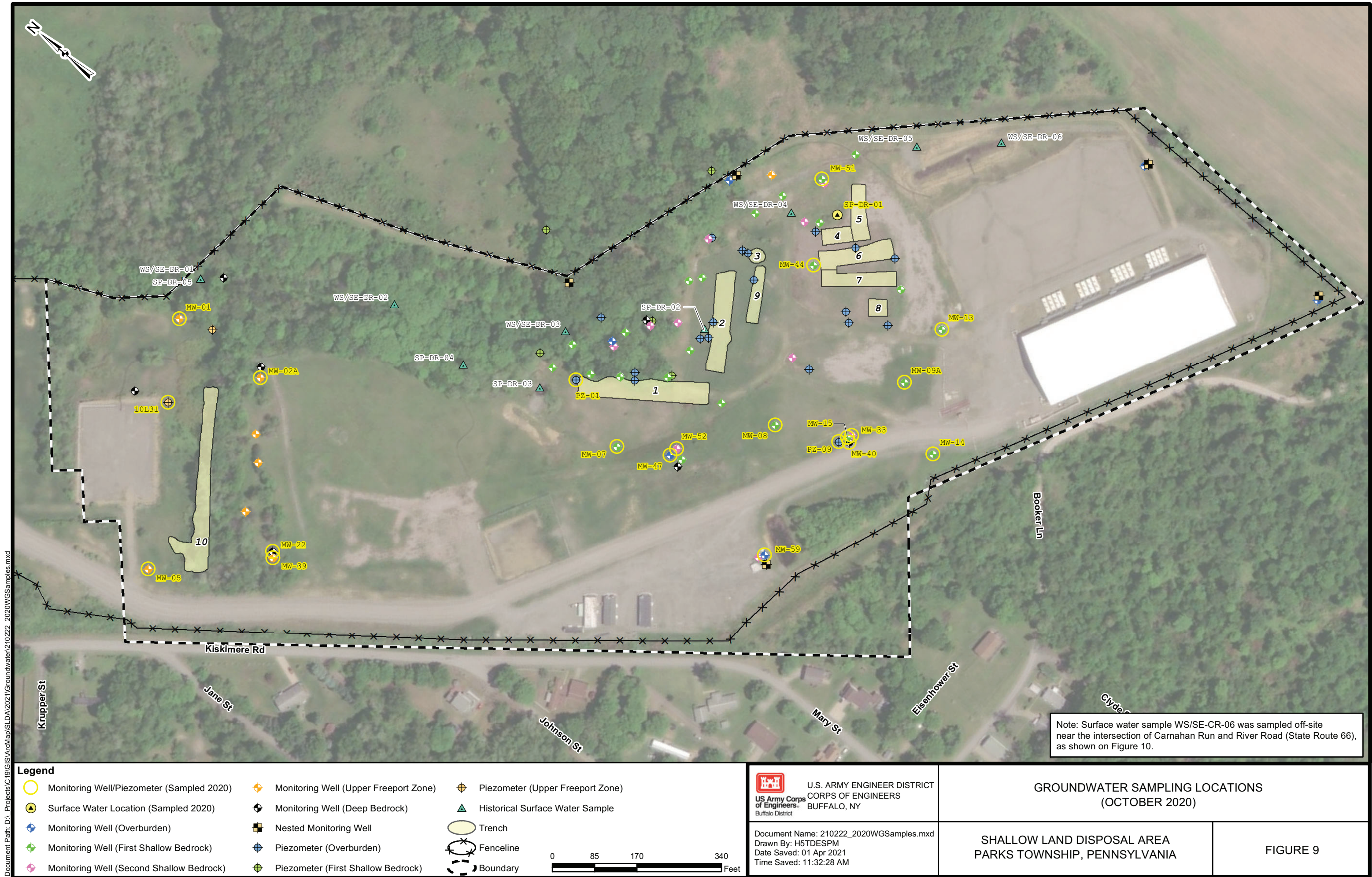
Legend <table border="0"><tr><td></td><td>Monitoring Well</td><td></td><td>Groundwater Flow Direction</td></tr><tr><td></td><td>Piezometer</td><td></td><td>Trench</td></tr><tr><td></td><td>Temporary Piezometer</td><td></td><td>Fenceline</td></tr><tr><td></td><td>Groundwater Elevation Contour (ft amsl)</td><td></td><td>Site Boundary</td></tr></table>		Monitoring Well		Groundwater Flow Direction		Piezometer		Trench		Temporary Piezometer		Fenceline		Groundwater Elevation Contour (ft amsl)		Site Boundary	 U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Buffalo District Document Name: 210222_Oct20WgCon_UF.mxd Drawn By: H5TDESPM Date Saved: 22 Feb 2021 Time Saved: 11:26:42 AM	GROUNDWATER ELEVATION CONTOUR MAP UPPER FREEPORT COAL ZONE - OCTOBER 2020 <table border="1"><tr><td data-bbox="2128 1830 2719 1951">SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA</td><td data-bbox="2719 1830 3061 1951">FIGURE 7</td></tr></table>		SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 7
	Monitoring Well		Groundwater Flow Direction																		
	Piezometer		Trench																		
	Temporary Piezometer		Fenceline																		
	Groundwater Elevation Contour (ft amsl)		Site Boundary																		
SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 7																				

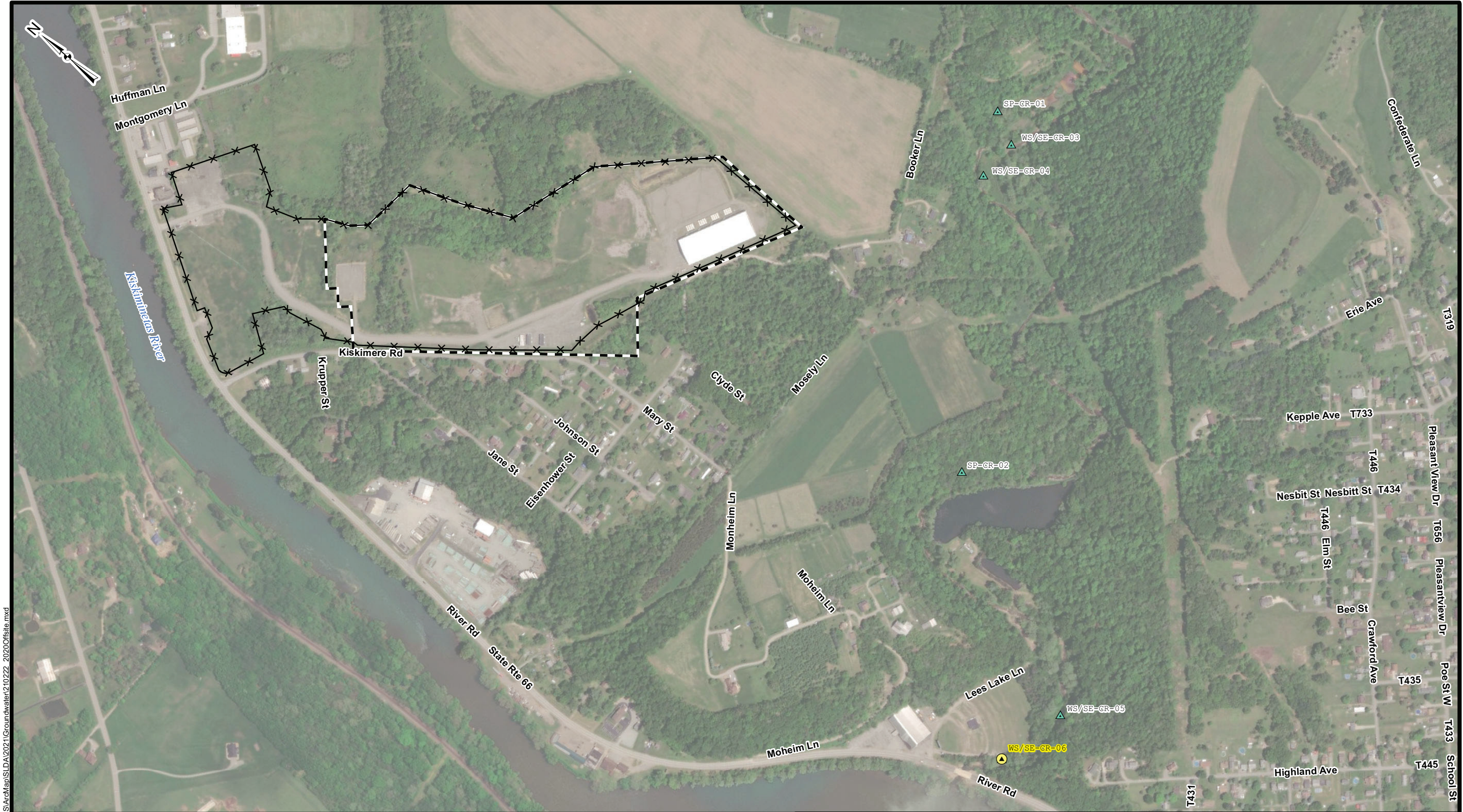




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	Monitoring Well		Groundwater Flow Direction																		
	Piezometer		Trench																		
	Temporary Piezometer		Fenceline																		
	Groundwater Elevation Contour (ft amsl)		Site Boundary																		
SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 8																				





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Legend - Surface Water Location (Sampled 2020) - Historical Surface Water Sample - Fenceline - Boundary 0 250 500 1,000 Feet	U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Buffalo District Document Name: 210222_2020Offsite.mxd Drawn By: H5TDESPM Date Saved: 01 Apr 2021 Time Saved: 11:07:53 AM	OFF-SITE SURFACE WATER SAMPLING LOCATIONS (OCTOBER 2020) SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA FIGURE 10	
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