



GROUNDWATER AND SURFACE WATER MONITORING DATA RELEASE 2021 SAMPLING EVENT SHALLOW LAND DISPOSAL AREA FUSRAP SITE

U S Army Corps of Engineers
Building Strong®
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 2021 at the SLDA was conducted between November 1 and November 22, 2021. 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). Nine (9) wells planned for sampling were either dry or did not yield adequate sampling volumes, which were then substituted with four (4) 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 2021; 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 (2003-2021) and surface water (2004-2021) sampling results, comparative drinking water standards, and up-gradient groundwater values for radionuclides derived during the USACE RI. The 2021 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 2021 data generally fall within the historical site ranges. The following metals in groundwater and/or surface water exceeded their respective water quality standards in 2021 (Tables 5):

- Aluminum
- Antimony
- Arsenic
- Iron
- Manganese
- Thallium¹

The site-wide average values for aluminum, iron, and manganese in groundwater, along with aluminum, iron, manganese, and thallium in 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 2021, arsenic in MW-22 (deep zone) exceeded the MCL; this reflects previous values seen in this well (Table 5). The reducing conditions in these groundwater zones commonly solubilize such metals from natural minerals, which are persistent in the historic data ranges. The site-wide average for arsenic falls below the respective MCL (Table 7). There were no detections of antimony in 2021. However, the detection limit was above the MCL for antimony, so it is not certain that all wells are below that level. The historic site wide average for antimony falls well below the MCL. 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 2021, the MCLs for antimony, iron, manganese, and thallium were exceeded in on-site and/or off-site surface water (Table 5). Other than exceedances of antimony and thallium due to high detection limits, this is consistent with historical data ranges.

Radionuclides:

The ranges of radionuclide results for 2021 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 2021 data generally reflect natural background ranges or are well below the drinking water standards.

¹ The average concentration of thallium in site groundwater has not exceeded the drinking water standard (Table 5). However, thallium was conservatively listed as exceeding the drinking water standard since the analytical method detection limits achieved in 2021 were higher than the drinking water standard.

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 or 2021 as it was dry but will be sampled in 2022 for both unfiltered and filtered radionuclides to verify whether the observed result is a turbidity artifact or reflects changes in groundwater conditions.

Conclusions

The 2021 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 6010, Inductively Coupled Plasma Atomic Emission Spectrometry
Total Uranium	Filtered and Unfiltered	ASTM D5174, Trace Uranium by Pulsed-Laser Phosphorimetry
Thorium-228 Thorium-230 Thorium-232 Uranium-234 Uranium-235 Uranium-238 Plutonium-238 Plutonium-239/240 Americium-241	Filtered and Unfiltered	Alpha Spectrometry
Plutonium-241	Filtered and Unfiltered	Liquid Scintillation

Table 2: SLDA Groundwater and Surface Water Monitoring Summary

Well/Location	Northing and Easting (NAD 1983 State Plane PA South Coordinates [US Survey Feet])	Zone	Up (U) or Down (D) Gradient from or Within (W) Disposal Areas	Monitoring Activity				Notes	Analysis				
				Water Level	Vapor Monitoring	Unfiltered and Filtered GW Samples	Unfiltered and Filtered Field Duplicate Samples		TAL Metals and Mercury [Filtered and Unfiltered]	Rad (Total U, Iso-Th, Iso-Pu, Am-241, Pu-241) [Filtered and Unfiltered]	Rad (Iso-U, Iso-Th, Iso-Pu, Am-241, Pu-241, Tc-99, Np-237, Co-60, Cs-137, Gross Alpha/Beta) [Filtered and Unfiltered]	VOCs [Unfiltered]	sVOCs [Unfiltered]
01U17	474920.75	1460132.9	OB	D	X			Static Water Levels					
03U05	474911.3	1460475.84	OB	D	X			Static Water Levels					
06U05	474752.61	1460622.86	OB	D	X			Static Water Levels					
08U04	474752.61	1460622.86	OB	D	X			Static Water Levels					
10L31	475611.15	1459495.75	UF	U	X	X		Trench Containment Verification (Note 1)	X	X			
10L32	475637.54	1459665.53	UF	U	X			Static Water Levels					
MW-01	475701.63	1459639.30	UF	U	X	Ø		Backup Well (Note 4)	Ø	Ø			
MW-02	475514.39	1459671.58	DB	U	X			Static Water Levels					
MW-02A	475500.91	1459653.22	UF	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-03	475394.45	1459519.68	UF	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-05	475426.21	1459213.58	UF	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-07	474862.82	1460008.03	1S	U/cross gradient	X	X	X	Trench Containment Verification (Note 1)	X	X			
MW-08	474646.43	1460245.79	1S	U	X	X	X	Trench Containment Verification (Note 1)	X	X			
MW-09A	474502.63	1460478.56	1S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-11D	474996.87	1460158.33	2S	D	X			Static Water Levels					
MW-11S	475006.61	1460164.38	OB	D	X			Static Water Levels					
MW-13	474513.42	1460608.55	1S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-14	474365.98	1460405.15	1S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-15	474519.64	1460320.18	1S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-17	474967.5	1460237.46	2S	D	X			Static Water Levels					
MW-19	475677.35	1459470.99	DB	U	X			Static Water Levels					
MW-20	475435.23	1459560.73	UF	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-21	475350.60	1459428.07	UF	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-22	475257.29	1459401.92	DB	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-25	474997.03	1460085.62	1S	D	X			Static Water Levels					
MW-26	474874.01	1460250.94	1S	D	X			Static Water Levels					
MW-27	474839.93	1460615.22	1S	D	X			Static Water Levels					
MW-29	474997.15	1460195.22	1S	D	X			Static Water Levels					
MW-32	474745.92	1460072.69	1S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-33	474515.36	1460328.97	2S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-34A	474743.01	1460055.63	DB	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-35	474981.1	1460241.46	DB	U	X			Static Water Levels					
MW-37	474864.49	1460596.71	2S	D	X			Static Water Levels					
MW-38	474628.85	1460617.36	1S	U	X			Static Water Levels					
MW-39	475248.58	1459391.74	UF	D	X	X	X	Trench Containment Verification (Note 1)	X	X			
MW-40	474510.49	1460314.48	DB	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-41	474948.6	1460120.09	1S	D	X			Static Water Levels					
MW-42	474874.08	1460180.2	1S	D	X			Static Water Levels					
MW-43	474929.41	1460278.27	2S	D	X			Static Water Levels					
MW-44	474794.04	1460541.96	1S	D	X	Ø	Ø	Backup Well/Field Duplicate (Note 4)	Ø	Ø			
MW-45	474707.54	1460371.90	2S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-46	474757.33	1460209.91	UF	D	X	X		Trench Containment Verification (Note 1)	X	X			
MW-47	474769.62	1460063.55	OB	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-50	475062.59	1460107.73	1S	D	X	Ø		Backup Well (Note 4)	Ø	Ø			
MW-51	474892.83	1460685.09	1S	D	X	Ø		Backup Well (Note 4)	Ø	Ø			
MW-52	474767.91	1460081.72	2S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-53	474883.38	1460681.58	2S	D	X	Ø		Backup Well (Note 4)	Ø	Ø			
MW-58	475686.53	1459760	DB	U	X			Static Water Levels					
MW-59	474494.87	1460031.85	OB	U	X	Ø		Backup Well (Note 4)	Ø	Ø			
MW-61	474501.10	1460020.48	2S	U	X	X		Trench Containment Verification (Note 1)	X	X			
MW-62	474975.92	1460626.67	UF	D	X			Static Water Levels					
MW-64	473972.91	1461139.17	OB	U	X			Static Water Levels					
MW-69	474413.33	1461122.42	OB	U	X			Static Water Levels					
MW-74	475034.11	1460563.7	OB	U	X			Static Water Levels					
MW-80	474965.82	1460356.34	1S	D	X			Static Water Levels					
MW-81	475064.61	1460046.84	1S	D	X			Static Water Levels					
MW-82	474951.18	1460546.39	1S	D	X			Static Water Levels					
MW-83	474990.32	1460446.17	OB	D	X			Static Water Levels					
MW-84	474932.04	1460608.34	1S	D	X			Static Water Levels					
MW-86	474872.88	1460766.95	1S	D	X			Static Water Levels					
PZ-01	475012.32	1460057.73	OB	D	X	Ø		Backup Well (Note 4)	Ø	Ø			Note 4
PZ-02	474931.25	1460146.14	OB	D	X			Static Water Levels					
PZ-03A	474874.5	1460282.09	OB	D	X			Static Water Levels					
PZ-05	474834.66	1460595.88	OB	D	X			Static Water Levels					
PZ-06A	474678.01	1460656.96	OB	D	X			Static Water Levels					
PZ-07	474602.29	1460545.24	OB	U	X			Static Water Levels					
PZ-08	474666.96	1460375.71	OB	U	X			Static Water Levels					
PZ-09	474527.33	1460302.34	OB	U	X	X		Trench Containment Verification (Note 1)	X	X			
TPZ-01	475102.5	1460052.79	1S	U	X			Static Water Levels					
TPZ-02	475102.5	1460052.79	1S	U	X			Static Water Levels					
TPZ-03	475102.5	1460052.79	1S	D	X			Static Water Levels					
TPZ-04	474971.08	1460247.79	1S	D	X			Static Water Levels					
TPZ-05	474869.71	1460188.39	1S	D	X			Static Water Levels					
TPZ-06	475054.27	1460186.93	OB	D	X			Static Water Levels					
TPZ-07	475054.27	1460186.93	OB	D	X			Static Water Levels					
SE-CR-06	471158.49	1459647.99	WS	-	-	X		Off-Site Surface Water (Notes 1 and 2)	X	X			
SP-DR-01	475721.74	1459728.73	WS	-	-	X		On-Site Surface Water (Notes 1 and 3)	X	X			

Notes:
ft AMSL feet above mean sea level
OB Overburden
1S First Shallow Bedrock Zone
2S Second Shallow Bedrock Zone
UF Upper Freeport Coal
DB Deep Bedrock Zone
WS Surface Water
Ø Replacement for Dry or Non-producing Trench Containment Verification Well

Note 1: The Contractor is required to collect static groundwater levels, in addition to unfiltered and filtered groundwater and surface water samples for the following analysis. If there is insufficient groundwater yield for the collection of all analytes, the collection (in order of priority) is unfiltered rad, unfiltered metals, filtered rad, and filtered metals.			
Analyte		Sample Collection	
Target Analyte List (TAL) Metals		Note 1	
Total Uranium		Note 1	
Plutonium-238, 239/240 (isotopic)		Note 1	
Thorium-228, 229, 230, 232 (isotopic)		Note 1	
Americium-241		Note 1	
Uranium-232, 233, 234, 235, 236, 238		Note 1	
Plutonium-241		Note 1	

Note 2: SE-CR-06 is an off-site surface water sample collected near the intersection of Carnahan Run and River Road (State Route 66). Carnahan Run outlet to Kiski River.
Note 3: SP-DR-01-20 is an on-site groundwater seep near Trenches 4 and 5. This location is approximate. The sample shall be collected from the nearest groundwater seep in this vicinity (see Figure 1).
Note 4: Sampling of Backup Wells will only be required if monitoring well network (MWN) wells are dry or non-producing. MW-44 is the primary backup well/field duplicate sample location.

Table 3. 2021 SLDA Groundwater Levels

Well ID	Date	Depth to Water	Depth to Bottom from TOC	New Remarks
01U17	4-Nov-21	10.55	12.7	GOOD
03U05	4-Nov-21	DRY	10.5	GOOD NO CAP
06U05	4-Nov-21	DRY	14	GOOD
08U04	4-Nov-21	BLOCKED @ 4.0	14	GOOD NO CAP
10L31	4-Nov-21	DRY	10	NO CAP
10L32	4-Nov-21	DRY	10	GOOD
MW-01	4-Nov-21	8.14	21	NO CAP
MW-02	4-Nov-21	79.89	89	NO CAP
MW-02A	4-Nov-21	47.67	50	GOOD
MW-03	4-Nov-21	DRY	52.5	GOOD
MW-05	4-Nov-21	DRY	26	NO CAP
MW-07	4-Nov-21	32.01	33	GOOD
MW-08	4-Nov-21	12.51	34	GOOD
MW-09A	4-Nov-21	20.08	41	GOOD
MW-11D	4-Nov-21	DRY	42	NO CAP
MW-11S	4-Nov-21	DRY	13	GOOD
MW-13	4-Nov-21	23.4	41	GOOD
MW-14	4-Nov-21	14.85	32	NO CAP
MW-15	4-Nov-21	12.95	30	GOOD
MW-17	4-Nov-21	42.7	79	NO CAP
MW-19	4-Nov-21	59.1	125.5	GOOD
MW-20	4-Nov-21	DRY	52.5	NO CAP
MW-21	4-Nov-21	DRY	47.5	GOOD
MW-22	4-Nov-21	91.15	111	NO CAP
MW-25	4-Nov-21	18.05	35	GOOD
MW-26	4-Nov-21	29.1	36	NO CAP
MW-27	4-Nov-21	34.3	35	GOOD
MW-29	4-Nov-21	18.45	36	GOOD
MW-32	4-Nov-21	DRY	63	NO CAP
MW-33	4-Nov-21	56.62	82	GOOD
MW-34A	4-Nov-21	DRY	190	NO CAP
MW-35	4-Nov-21	113.8	170	NEEDS LABEL AND PAINT
MW-37	4-Nov-21	DRY	75	NEEDS CAP
MW-38	4-Nov-21	40.33	77.5	GOOD
MW-39	4-Nov-21	55.8	60.5	GOOD
MW-40	4-Nov-21	124.52	191.5	NO CAP
MW-41	4-Nov-21	21.2	40	NO CAP
MW-42	4-Nov-21	26.05	50	NEEDS LABEL AND PAINT
MW-43	4-Nov-21	41.78	55	NO CAP
MW-44	4-Nov-21	40.54	60	GOOD
MW-45	4-Nov-21	66.51	80	NO LOCK
MW-46	4-Nov-21	DRY	93	GOOD
MW-47	4-Nov-21	15.76	17.8	GOOD
MW-50	4-Nov-21	DRY	35.1	NEEDS CAP
MW-51	4-Nov-21	31.83	36	NO CAP
MW-52	4-Nov-21	35.28	44.5	NO CAP
MW-53	4-Nov-21	54.52	71	GOOD

Well ID	Date	Depth to Water	Depth to Bottom from TOC	New Remarks
MW-58	4-Nov-21	7.15	81.2	GOD
MW-59	4-Nov-21	6.25	14	NO CAP
MW-61	4-Nov-21	DRY	65.5	NO CAP
MW-62	4-Nov-21	86	88	NEEDS CAP
MW-64	4-Nov-21	15.34	20	NO LOCK
MW-69	4-Nov-21	15.5	20	NEEDS LOCK AND PAINT
MW-74	4-Nov-21	12.31	14	NEEDS LABEL AND PAINT
MW-80	4-Nov-21	26.58	36.5	NEEDS LABEL AND PAINT
MW-81	4-Nov-21	8.78	13	NEEDS LABEL AND PAINT
MW-82	4-Nov-21	27.25	35.5	GOOD
MW-83	4-Nov-21	48.61	69	NEEDS PAINT AND LOCK
MW-84	4-Nov-21	33.74	36.5	GOOD
MW-86	4-Nov-21	DRY	36	GOOD
PZ-01	4-Nov-21	14.05	18	NEEDS PAINT AND LOCK
PZ-02	4-Nov-21	DRY	18	NO CAP
PZ-03A	4-Nov-21	MISSING	18	MISSING
PZ-05	4-Nov-21	DRY	19	NO CAP
PZ-06A	4-Nov-21	8.14	20	NO CAP
PZ-07	4-Nov-21	8.28	20	GOOD
PZ-08	4-Nov-21	8.6	18	NO CAP
PZ-09	4-Nov-21	8.79	18	GOOD
TPZ-01	4-Nov-21	NM	11.5	Not Measured - Off-site Location
TPZ-02	4-Nov-21	NM	11.5	Not Measured - Off-site Location
TPZ-03	4-Nov-21	9.48	11.5	GOOD
TPZ-04	4-Nov-21	19.69	26	GOOD
TPZ-05	4-Nov-21	21.25	31	NO CAP
TPZ-06	4-Nov-21	BLOCKED @ 3.05	5.5	Bent - potentially unusable 1" PVC
TPZ-07	4-Nov-21	BLOCKED @ 3.60	5.5	Bent - potentially unusable 1" PVC

Table 4. Groundwater Sampling Field Data (2021)

Well ID	Collect Date	Temperature (°C)	pH (standard unit)	ORP (mV)	Specific Conductance (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Purge Rate (mL/min)	Comments
10L31	08-Nov-21	--	--	--	--	--	--	--	Sample Time: 1120
MW-01	11-Nov-21	--	--	--	--	--	--	--	Sample Time: 1200
MW-02A	17-Nov-21	13.2	6.51	17.3	0.286	1.2	6.35	125	Sample Time: 1230
MW-03	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-05	10-Nov-21	--	--	--	--	--	--	--	Sample Time: 1135
MW-07	11-Nov-21	13.9	6.07	156.2	0.392	3.3	4.55	125	Sample Time: 1550. Duplicate Sample Time: 1605
MW-08	10-Nov-21	--	--	--	--	--	--	--	Sample Time: 0740
MW-09A	09-Nov-21	--	--	--	--	--	--	--	Sample Time: not provided
MW-13	Not Provided	--	--	--	--	--	--	--	Sample Time: not provided
MW-14	09-Nov-21	--	--	--	--	--	--	--	Sample Time: not provided
MW-15	09-Nov-21	--	--	--	--	--	--	--	Sample Time: not provided
MW-20	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-21	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-22	17-Nov-21	13.3	6.89	-72.3	1.133	2.1	0.47	125	Sample Time: 1645
MW-32	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-33	15-Nov-21	11.8	6.77	-130.8	0.418	1.8	0.51	125	Sample Time: 1350
MW-34A	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-39	11-Nov-21	11.7	3.26	63	0.253	295.0	3.01	Bailer	Sample Time: 0845. Duplicate Sample Time: 0915. 3 gallons purged
MW-40	16-Nov-21	19.6	8.84	-88.4	0.727	14.2	2.02	Bailer	2" well, no plug. Attempted bladder for 1.5 hours on 15 Nov - pumping thick organics - bees - decomposing organics unable to pump - used bailer due to organics, purged 37.5 gallons on 16 Nov.
MW-44	18-Nov-21	10.5	7.52	-123	0.600	5.5	0.42	125	Sample Time: 1430. Duplicate Sample Time: 1530. No gripper, 2" well.
MW-45	18-Nov-21	--	--	--	--	--	--	--	Attempted sample collection with pump and bailer - removed approx 2 cups of water - well went dry.
MW-46	04-Nov-21	--	--	--	--	--	--	--	Dry
MW-47	09-Nov-21	--	--	--	--	--	--	--	Sample Time: 0750 for unfiltered on 9 Nov, 1035 for filtered on 10 Nov. Only enough water to collect unfiltered samples on 9 Nov. Returned on 10 Nov for filtered samples.
MW-50	19-Nov-21	--	--	--	--	--	--	--	Checked with bailer. Insufficient water to purge. Approx 6-8 inches in bailer. Unable to collect samples.
MW-51	11-Nov-21	18.5	7.35	64.4	0.389	71.4	3.50	Bailer	Sample Time: 1255
MW-52	11-Nov-21	13.7	6.51	61.7	0.535	33.78	2.95	Bailer	Sample Time: 1130
MW-53	18-Nov-21	--	--	--	--	--	--	--	Attempts were made using bladder pump and bailer. Attempted to pump 1 bladder. Well is likely compromised by sand intrusion. Revisited on 19 Nov and confirmed to be unsamplable.
MW-59	11-Nov-21	--	--	--	--	--	--	--	Sample Time: 0800
MW-61	18-Nov-21	--	--	--	--	--	--	--	Less than 6" water. No sample.
PZ-01	11-Nov-21	--	--	--	--	--	--	--	Sample Time: 1000
PZ-09	10-Nov-21	--	--	--	--	--	--	--	Sample Time: 1135
SP-DR-01	08-Nov-21	--	--	--	--	--	--	--	Sample Time: 0925
SE-CR-06	08-Nov-21	--	--	--	--	--	--	--	Sample Time: 0800

Maximum	19.6	8.8	156	1.133	295.0	6.4	125.0
Minimum	10.5	3.3	-131	0.253	1.2	0.4	125.0
Average	14.0	6.6	-6	0.526	47.6	2.6	125.0
Geometric Mean	13.8	6.4	--	0.474	--	1.8	125.0

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/Lg/L
10L31	2013	0.01 J	0.00052 U	0.00061 U	0.039		0.00027 U	79	0.0013 J	0.00036 J	0.0008 J	0.29	0.00024 U	42	0.0015 U	0.00086 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	0.0028 J	0.0005 U	0.0005 J	0.26		36	0.0013 J	0.0001 U	0.0037 J	2.7	0.0005 U	0.0005 U	6.8	0.0005 U	0.0005 U	0.0031 J
	2015	0.0084 J	0.001 U	0.001 U	0.05	0.0005 U	0.0005 U	54	0.0061 J	0.0005 U	0.0005 J	0.15	0.00013 J	27	0.0013 J	0.0001 U	0.0051 J	2.8	0.0005 U	0.0005 U	5.1	0.0005 U	0.00018 U	0.005 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	0.0001 U	0.0039 J	2.3	0.0016 J	0.0005 U	2	0.0005 U	0.0005 U	0.0054 J
	2017	0.13	0.0011 J	0.001 U	0.082	0.0005 U	0.0005 U	53	0.00044 J	0.00034 J	0.00089 J	0.66	0.00036 J	30	0.0013	0.0001 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	0.00028 J	0.46	0.0005 U	25	0.0025 U	0.0001 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	0.00037 U	54.8	0.0011 J	0.00019 U	0.0019 U	0.33	0.00074 U	12.1	0.0019	0.00016 U	0.0019 U	2.1	0.0019 U	0.00074 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	0.0019 U	0.0019 U	0.15	0.00074 U	26.6	0.0026	0.00016 U	0.0019 U	2.4	0.0021 J	0.00074 U	5.5	0.0003 U	0.00074 U	0.0019 U
	2021	0.041 U	0.001 U	0.0093 U	0.12	0.0014 U	0.00073 U	47.3	0.002 U	0.0036 U	0.0022 U	0.18	0.0022 U	26.2	0.004 J	0.00017 J	0.0073 U	2.4	0.0073 U	0.0014 U	7	0.00073 U	0.002 U	0.0073 U
	2013	0.0099 J	0.00052 U	0.00061 U	0.03	0.00025 U	0.00027 U	65	0.0016 J	0.00018 J	0.00088 J	0.098 J	0.00024 U	32	0.0012 J	0.0009 J	0.0037 J	2.5	0.0017 J	0.00028 J	1.2	0.00016 U	0.00049 U	0.013 J
10L31 (Filtered)	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	0.0017 J	0.0001 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	0.002 J	0.00026 J	0.0005 U	0.16 J	0.0005 U	29	0.00093 J	0.0001 U	0.0014 J	2.8	0.0016 J	0.0005 U	5.5	0.0005 U	0.00054 U	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	0.0002 U	0.0023 J	2.3	0.0022 J	0.0005 U	1.9	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	0.0001 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	0.0022 J	0.0001 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	0.0019 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	0.0019 U	0.0019 U	0.12	0.00074 U	27.5	0.0048 J	0.00003 U	0.0019 U	2.4	0.0028 J	0.00074 U	5.4	0.00037 U	0.00074 U	0.0022 J
	2021	0.033 U	0.0066 U	0.0026 U	0.12	0.0013 U	0.00066 U	53.4	0.0016 U	0.0033 U	0.0016 U	0.25	0.002 U	27.2	0.0092	0.00003 U	0.0013 U	2.7	0.0066 U	0.0013 U	1.2	0.0066 U	0.0016 U	0.0093 U
	2013	0.012 J	0.00052 U	0.00061 U	0.048		0.00092 J	46	0.00092 J	0.00022 J	0.0008 J	0.19 J	0.0003 J	23	0.014	0.00099 J	0.0034 J	1.8	0.0022 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	0.0001 U	0.0014 J	1.5	0.0019 J	0.0005 U	3.2	0.0005 U	0.0005 U	0.0061 J
MW-01	2015	0.027 J	0.001 U	0.0032	0.07	0.0005 U	0.0005 U	26	0.0005 U	0.00013 J	0.00074 U	4.2	0.0005 U	13	0.011	0.0001 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	0.00054 J	0.62 U	0.0005 U	18	0.00042 J	0.0001 U	0.0016 J	1.5	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	0.0001 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	0.0005 U	0.0006 J	0.28	0.0005 U	17	0.0012 J	0.0001 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	0.0019 U	0.0019 U	0.26	0.00074 U	3.1	0.55	0.00016 U	0.0019 U	1	0.0019 U	0.00074 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	0.0019 U	0.0019 U	0.067	0.00074 U	20.6	0.0042	0.00016 U	0.0019 U	1.9	0.0019 U	0.00074 U	4.8	0.0003 U	0.00074 U	0.0028 J
	2021	0.036 U	0.01 U	0.0093 U	0.075	0.0014 U	0.00073 U	39.5	0.002 U	0.002 U	0.006 U	0.022 U	0.0022 U	20.8	0.031	0.00016 U	0.0073 U	2.2	0.0073 U	0.0014 U	4.6	0.0073 U	0.002 U</	

Well	Units	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
			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-09A (Filtered)		2013	0.059	0.00052 U	0.00061 U	0.41	0.00025 U	0.00027 U	27	0.0036 J	0.00029 J	0.001 J	0.18 J	0.00024 U	5.4	0.0039 J	0.00011 J	0.0025 J	6	0.0015 U	0.00079 J	7.7	0.00016 U	0.00049 U	0.016 J
		2014	0.0025 U	0.0001 U	0.0005 U	0.4	0.0005 U	0.0005 U	25	0.0005 U	0.00024 J	0.0005 U	0.12 U	0.0004 U	5.3	0.0019 U	0.0005 U	11	0.0005 U	0.0005 U	10	0.0005 U	0.0004 U	0.004 J	
		2015	0.0045 J	0.001 U	0.0001 U	0.47	0.0005 U	0.0005 U	29	0.0055 J	0.00023 J	0.0005 U	0.092 J	0.0005 U	5.6	0.0005 J	0.0001 U	0.0018 J	10	0.0025 U	0.0005 U	11	0.0005 U	0.0005 U	0.0023 J
		2016	0.001 J	0.00075 U	0.0001 U	0.43	0.0005 U	0.00075 U	24	0.0005 U	0.00016 J	0.0005 U	0.062 U	0.0005 U	5.7	0.00028 J	0.0001 U	0.0039 J	11	0.0025 U	0.0005 U	12	0.0005 U	0.0003 J	
		2017	0.005 U	0.0017 J	0.0001 U	0.46	0.0005 U	0.0005 U	25	0.0018 U	0.00015 U	0.0005 U	0.23	0.0005 U	5.6	0.00017 U	0.00015 U	0.0011 U	10	0.0025 U	0.0005 U	13	0.0005 U	0.0005 U	0.0029 J
		2018	0.005 U	0.00074 J	0.0001 U	0.5	0.0005 U	0.00057 J	28	0.0012 J	0.00023 J	0.0034 J	0.22	0.0005 U	6.6	0.0011	0.0001 U	0.0023 J	9.6	0.0025 U	0.0005 U	8.8	0.0005 U	0.0025 U	0.0033 J
		2019	0.03 U	0.00074 U	0.0001 U	0.47	0.00037 U	0.00037 U	31.6	0.0014 J	0.0019 U	0.0019 U	0.4	0.00074 U	7.3	0.0019 U	0.00033 U	0.0019 U	1.1	0.0019 U	0.00074 U	2.4	0.00037 U	0.00074 U	0.0028 J
		2020	0.03 U	0.00074 U	0.0011 U	0.69	0.00037 U	0.00037 U	30.2	0.00074 U	0.0019 U	0.0019 U	0.63	0.00074 U	7.7	0.041	0.00003 U	0.0074	6.1	0.0019 U	0.00074 U	7.4	0.00037 U	0.00074 U	0.0022 J
		2021	0.033 U	0.0006 U	0.0006 U	0.65	0.0006 U	0.0006 U	32.9	0.0016 U	0.0016 U	0.0033 U	0.035 J	0.0005 U	6.9	0.055	0.0009 J	0.0066 U	3.3	0.0066 U	0.0013 U	6.8	0.0006 U	0.0016 U	0.0066 U
	MW-13		2013	0.01 J	0.00052 U	0.00062 J	0.49	0.00027 U	0.00027 U	40	0.0024 J	0.00032 J	0.0012 J	1.1	0.00051 J	8	0.0066	0.000076 J	0.0019 J	1.5	0.0015 U	0.00018 U	3.3	0.00024 J	0.00049 U
		2014	0.0017 J	0.0001 U	0.00038 J	0.47	0.0005 U	0.0005 U	33	0.00038 J	0.0005 U	0.0005 U	0.64	0.00051 U	6.8	0.0066	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
		2015	0.05	0.001 U	0.0001 U	0.44	0.0005 U	0.0005 U	29	0.00062 J	0.00023 J	0.0005 U	0.79	0.0005 U	5.6	0.039	0.0001 U	0.0011 J	0.93	0.0025 U	0.0005 U	2.2	0.0005 U	0.0005 U	0.0018 U
		2016	0.017 J	0.00075 U	0.0001 U	0.43	0.0005 U	0.00075 U	24	0.0005 U	0.00012 J	0.00064 J	0.56 J	0.0005 U	5.7	0.00028 J	0.0001 U	0.0039 J	11	0.0025 U	0.0005 U	12	0.0005 U	0.0003 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	0.0005 U	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	0.00032 J	0.43	0.0005 U	0.00032 J	29	0.0005 U	0.0012 U	0.0012 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	0.0001 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	0.0044	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	0.0001 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
		2021	0.044 U	0.01 U	0.0099 U	0.45	0.0014 U	0.00073 U	27.1	0.002 U	0.002 U	0.0036 U	0.47	0.0022 U	6.3	0.077	0.00017 J	0.0073 U	1	0.0073 U	0.0014 U	2.3	0.0073 U	0.002 U	0.0073 U
MW-13 (Filtered)			2013	0.0092 J	0.00015 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	0.0052	0.000085 J	0.0016 J	1.2	0.0015 U	0.00012 J	2.5	0.00016 U	0.00049 U
		2014	0.0039 J	0.0001 U	0.0005 U	0.45	0.0005 U	0.0005 U	33	0.00034 J	0.0005 U	0.0005 U	0.59	0.00048 U	1.2	0.00095 J	0.0005 U	0.00095 J	1.2	0.0025 U	0.0005 U	3.7	0.00054 J	0.00025 U	0.0025 U
		2015	0.026 J	0.001 U	0.0001 U	0.44	0.0005 U	0.0005 U	29	0.00084 J	0.00036 J	0.0005 U	0.7	0.0005 U	6.2	0.045	0.0001 U	0.0011 J	0.78	0.0025 U	0.0005 U	2.1	0.0005 U	0.0005 U	0.0047 J
		2016	0.0075 U	0.00075 U	0.0001 U	0.43	0.0005 U	0.00075 U	24	0.0005 U	0.00012 J	0.00064 J	0.53 J	0.0005 U	5.7	0.00028 J	0.0001 U	0.0039 J	11	0.0025 U	0.0005 U	12	0.0005 U	0.0003 J	
		2017	0.005 U	0.00075 U	0.0001 U	0.46	0.0005 U	0.0005 U	30	0.0005 U	0.00024 J	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	0.0001 U	0.43	0.0005 U	0.00075 U	29	0.0005 U	0.0017	0.00015 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	0.00011 U	0.33	0.00037 U	0.00037 U	3.5	0.0092	0.0019 U	0.0019 U	0.21	0.036	0.71	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	0.00011 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			

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-40	2013	0.017 J	0.00052 U	0.00061 U	0.4	0.00027 U	0.4	5.6	0.0011 J	0.00012 U	0.0034 J	0.35	0.00024 U	1.1	0.0098	0.00069 J	0.00022 J	1.8	0.0015 U	0.00018 U	240	0.00016 U	0.00049 U	0.0018 U
	2014	0.0083 J	0.0001 U	0.00042 J	0.32	0.00042 J	0.0001 U	4.5	0.00052 J	0.0005 U	0.0087 J	0.0005 U	0.0005 U	0.8	0.0093	0.00065 J	0.0001 J	1.3	0.0005 U	0.0005 U	210	0.0005 U	0.0005 U	0.0018 J
	2015	0.063	0.001 U	0.0001 U	0.32	0.0005 U	0.0005 U	4.7	0.0008 J	0.00038 J	0.00086 J	0.19 J	0.0005 U	0.64	0.016	0.0001 U	0.00082 J	1.2	0.0025 U	0.00042 J	190	0.0005 U	0.0005 U	0.0025 U
	2016	0.018 J	0.00075 U	0.0001 U	0.3	0.0005 U	0.0005 U	3.7 J	0.0005 U	0.0006 J	0.0005 U	0.62 U	0.0005 U	0.77 J	0.0048 J	0.00001 U	0.0005 U	1.2 J	0.0005 U	0.0005 U	190	0.0005 U	0.0005 U	0.0049 J
	2017	0.032 J	0.00075 U	0.0001 U	0.29	0.0005 U	0.0005 U	3.4	0.00075 U	0.0008 J	0.00085 J	0.16 J	0.0005 U	0.63	0.0059	0.00001 U	0.0008 J	1.2	0.0025 U	0.0005 U	200	0.0005 U	0.0005 U	0.013 J
	2019	0.03 U	0.00074 U	0.0001 U	0.48	0.0003 U	0.00037 U	36.7	0.0003 U	0.00037 U	0.0019 U	0.48	0.00074 U	7.9	0.047	0.00016 U	0.0019 U	1.2	0.0019 U	0.00074 U	2.6	0.0003 U	0.00074 U	0.0065 J
	2020	0.03 U	0.00074 U	0.0001 U	0.28	0.0003 U	0.00037 U	3.2	0.0003 U	0.0019 U	0.0019 U	0.1	0.00074 U	0.64	0.0072	0.00016 U	0.0019 U	1.2	0.0019 U	0.00074 U	204	0.0003 U	0.00074 U	0.017
	2021	0.13	0.01 U	0.0093 U	0.28	0.0014 U	0.0088 J	4.3	0.002 U	0.003 U	0.0036 U	0.12	0.0022 U	0.63	0.0088 J	0.00016 U	0.0073 U	1.4	0.0073 U	0.0014 U	192	0.0073 U	0.002 U	0.017 J
	2013	0.014 J	0.00052 U	0.00061 U	0.34	0.00025 U	0.00027 U	4.8	0.0004 J	0.00012 U	0.0029 J	0.052 J	0.00024 U	0.88	0.0082	0.000084 J	0.00058 J	1.5	0.0015 U	0.00037 J	230	0.00016 U	0.00049 U	0.0021 J
	2014	0.0047 J	0.0001 U	0.0001 U	0.31	0.00026 J	0.0005 U	4.4	0.0007 J	0.0005 U	0.0019 J	0.12 U	0.0005 U	0.75	0.0084	0.00001 U	0.00032 J	1.3	0.0025 U	0.0005 U	160	0.0005 U	0.0013 J	0.0025 U
MW-40 (Filtered)	2015	0.048 J	0.001 U	0.0001 U	0.32	0.0005 U	0.0005 U	4.8	0.0031 J	0.0007 J	0.0007 J	0.14 J	0.0005 U	0.59	0.017	0.0001 U	0.00072 J	1.3	0.0025 U	0.0005 U	190	0.0005 U	0.0008 J	0.0027 J
	2016	0.18 J	0.00075 U	0.0001 U	0.29	0.0005 U	0.0005 U	3.6 J	0.0005 U	0.0005 U	0.00062 J	0.62 U	0.0005 U	0.77 J	0.0047 J	0.00001 U	0.0005 U	1.2 J	0.0025 U	0.0005 U	190	0.0005 U	0.0005 U	0.0025 U
	2017	0.0071 J	0.00075 U	0.0001 U	0.27	0.0005 U	0.0005 U	3.5	0.0005 U	0.00017 J	0.0005 U	0.065 J	0.0005 U	0.65	0.0046 J	0.00001 U	0.0005 U	1.2	0.0025 U	0.0005 U	0.25 U	0.0005 U	0.0025 U	0.005 U
	2019	0.096	0.00074 U	0.00011 U	0.039	0.00037 U	0.00037 U	23.8	0.0013 J	0.0019 U	0.0019 U	0.31	0.0014 J	6.5	0.0021	0.00003 U	0.0025 J	2.1	0.002 J	0.00074 U	14.2	0.00038 J	0.00074 U	0.0055 J
	2020	0.03 U	0.00074 U	0.0001 U	0.26	0.00037 U	0.00037 U	3.1	0.00074 U	0.0019 U	0.0019 U	0.019 U	0.00074 U	0.64	0.0043 J	0.00003 U	0.0019 U	1.2	0.00037 U	0.00074 U	192	0.00037 U	0.00074 U	0.0019 U
	2021	0.033 U	0.0066 U	0.0026 U	0.27	0.0013 U	0.00066 U	3.6	0.0016 U	0.0016 U	0.0033 U	0.034 J	0.0022 J	0.62	0.007	0.00003 U	0.0066 U	1.3	0.0066 U	0.0013 U	197	0.0066 U	0.0016 U	0.0066 U
	2015	0.21	0.001 U	0.0013 J	0.036	0.0005 U	0.0005 U	37	0.00052 J	0.0012 J	0.0013 J	0.39	0.00032 J	3.4	0.0032 J	0.00001 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	0.00075 U	0.001 U	52	0.00075 U	0.00043 J	0.0033 J	0.49 J	0.0009 J	9.6	0.0099 J	0.00001 U	0.0034 J	2.2	0.005 U	0.0005 U	10	0.001 U	0.001 U	0.013 J
	2017	0.032 J	0.00072 J	0.0001 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	0.00001 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	0.0006 J	0.00045 J	58	0.0021 J	0.00076 J	0.0045	0.0045	0.0045	12	0.0049 J	0.00001 U	0.0049 J	2	0.0025 U	0.0005 U	4.4	0.0025 U	0.0025 U	0.023 J
MW-44	2019	0.2	0.00074 U	0.0001 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	0.0001 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	0.0021
	2021	0.036 U	0.01 U	0.0093 U	0.4 J	0.0014 U	0.00073 U	84.5	0.002 U	0.002 U	0.0036 U	0.039 J	0.0022 U	17.3 J	0.034	0.00016 U	0.0073 U	3.9 J	0.0073 U	0.0014 U	17.4 J	0.0073 U	0.002 U	0.0073 U
	2015	0.0025 U	0.00056 J	0.0001 U	0.1	0.0005 U	0.0005 U	32	0.0005 U	0.0017 J	0.0005 U	0.12 J	0.0005 U	7.1	0.018	0.00001 U	0.00069 J	1.6	0.0025 U	0.0005 U	4.7	0.0005 U	0.0005 U	0.0029 J
	2016	0.23 J	0.0005 J	0.0001 U	0.25	0.0005 U	0.0005 U	56	0.0005 U	0.00048 J	0.00051 J	0.62 U	0.0005 U	12	0.2	0.00001 U	0.0031 J	2.5 J	0.0025 U	0.0005 U	13	0.0005 U	0.0005 U	0.013 J
	2017	0.0027 U	0.00075 U	0.0001 U	0.17	0.0005 U	0.0005 U	38	0.0005 U	0.00015 J	0.00052 J	0.32	0.0005 U	8.8	0.011	0.00001 U	0.0022 J	1.7	0.0025 U	0.0005 U	5.6	0.0005 U	0.0025 U	0.0096 J
	2018	0.0078 J	0.00075 U	0.0001 U	0.12	0.0005 U	0.0005 U	48	0.00044 J	0.00029 J	0.0015 U	0.5	0.0005 U	10	0.039	0.								

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
PZ-09	2013	0.038 J	0.00052 U	0.00061 U	0.19		0.00027 U	13	0.0013 J	0.0005 J	0.00097 J	0.1 J	0.0004 J	7.2	0.017	0.00008 J	0.021	1.3	0.0015 U	0.00018 U	4.5	0.00032 J	0.00049 U	0.01 J
	2014	0.53	0.001 U	0.001 U	0.25	0.00083 J	0.0005 U	15	0.0012 J	0.0015 J	0.0033 J	1.5	0.0017	9	0.0026	0.0001 U	0.026	1.2	0.00074 J	0.0005 U	6	0.0005 U	0.00074 J	0.017 J
	2015	0.027 J	0.001 U	0.001 U	0.16	0.0005 U	0.0005 U	9.5	0.0012 J	0.00028 J	0.0005 U	0.12 U	0.0005 U	5.7	0.0013	0.0001 U	0.015	0.79	0.0025 U	0.0005 U	6.3	0.0005 U	0.0005 U	0.0018 U
	2016	0.035 J	0.00075 U	0.001 U	0.13	0.0005 U	0.0005 U	8.1	0.0005 J	0.00024 J	0.0005 U	0.62 U	0.0005 U	5.7	0.0012	0.0006 J	0.015	1.1	0.0025 U	0.0005 U	7.2	0.0005 U	0.0005 U	0.012 J
	2017	0.82	0.00075 U	0.001 U	0.14	0.0005 U	0.0005 U	7.5	0.005 J	0.00064 J	0.0012 J	1.3	0.00068 J	5.3	0.0018	0.00068 J	0.001 U	0.015	1.2	0.0025 U	0.0005 U	7.3	0.0016 J	0.0098
	2018	0.031 J	0.00075 U	0.001 U	0.12	0.0005 U	0.0011 J	6.8	0.00016 J	0.00016 J	0.003 U	0.084 J	0.00034 J	4.4	0.001	0.0001 U	0.012	1.1	0.0025 U	0.0005 U	6.4	0.0005 U	0.0025 U	0.039 J
	2019	0.03 U	0.00074 U	0.001 U	0.056	0.0003 U	0.00037 U	14.1	0.00074 U	0.0033 J	0.0019 U	0.074	0.00074 U	4.6	0.0019	0.00016 U	0.017	2.3	0.0019 U	0.00074 U	8.8	0.0003 U	0.00074 U	0.012
	2020	0.17	0.00074 U	0.001 U	0.1	0.0003 U	0.00037 U	6.2	0.0012 J	0.0019 U	0.0019 U	0.56	0.00074 U	4.5	0.0012	0.00016 U	0.012	1	0.0019 U	0.00074 U	5.1	0.0003 U	0.00074 U	0.0078
	2021	0.05 U	0.001 U	0.00093 U	0.12	0.0004 U	0.00073 U	6.1	0.002 U	0.002 U	0.0036 U	0.022 U	0.0022 U	4.2	0.0096	0.00016 U	0.011	0.99	0.0073 U	0.0004 U	4.6	0.00073 U	0.0002 U	0.0084 J
	2021	0.028 J	0.00052 U	0.00061 U	0.17	0.00025 U	0.00027 U	12	0.00088 J	0.00028 J	0.00054 J	0.048 U	0.00024 U	6.4	0.004	0.00006 U	0.019	1.2	0.0015 U	0.00018 U	3.9	0.00016 U	0.00049 U	0.009 J
PZ-09 (Filtered)	2014	0.035 J	0.001 U	0.001 U	0.21	0.00036 J	0.0005 U	14	0.00036 J	0.0017 J	0.0005 U	0.12 U	0.00033 J	8.3	0.0018	0.00006 U	0.025	1.1	0.00076 J	0.0005 U	5.7	0.0005 U	0.00076 J	0.011 J
	2015	0.026 J	0.00062 J	0.0001 U	0.17	0.00033 J	0.0005 U	12	0.0021 J	0.00035 J	0.00034 J	0.059 J	0.0005 U	6.3	0.0021	0.0001 U	0.017	0.81	0.0016 J	0.0005 U	7	0.0005 U	0.0005 U	0.0084 J
	2016	0.15 J	0.00075 U	0.001 U	0.13	0.0005 U	0.00075 U	8.4	0.00097 J	0.0002 J	0.0015 U	0.62 U	0.0005 U	5.5	0.0011	0.0001 U	0.014	1.1	0.0025 U	0.0005 U	7	0.0005 U	0.0005 U	0.0082 J
	2017	0.002 J	0.00075 U	0.001 U	0.13	0.0005 U	0.0005 U	7.5	0.0014 J	0.00021 J	0.0015 U	0.06 J	0.0005 U	4.9	0.0011	0.0001 U	0.014	1	0.0025 U	0.0005 U	6.6	0.0005 U	0.0025 U	0.0047 J
	2018	0.018 J	0.0011 J	0.001 U	0.12	0.0005 U	0.0005 U	6.2	0.0018 J	0.00025 J	0.0015 U	0.067 J	0.00028 J	3.9	0.0093	0.0001 UJ	0.011	0.89	0.0025 U	0.0005 U	5.9	0.0005 U	0.0025 U	0.054
	2019	0.03 U	0.00074 U	0.0011 U	0.025	0.00037 U	0.00037 U	44.7	0.00037 U	0.0019 U	0.0019 U	0.26	0.00074 U	29.1	0.0023 J	0.00003 U	0.0034 J	2.3	0.0019 U	0.00074 U	10.3	0.00037 U	0.00074 U	0.0066
	2020	0.03 U	0.00074 U	0.0011 U	0.096	0.00037 U	0.00037 U	6.2	0.00074 U	0.0019 U	0.0019 U	0.019 U	0.00074 U	4.4	0.0011	0.00003 U	0.011	0.96	0.0019 U	0.00074 U	5.3	0.00037 U	0.00074 U	0.0096
	2021	0.033 U	0.0066 U	0.0026 U	0.11	0.0013 U	0.00066 U	6.9	0.0016 U	0.0016 U	0.0033 U	0.02 U	0.002 U	4.3	0.01	0.00003 U	0.016 J	1.2	0.0066 U	0.0013 U	4.8	0.0066 U	0.0016 U	0.017 J
	2021	1	0.001 J	0.0044	0.13	0.00064 J	0.00064 J	17	0.0028 J	0.0028 J	0.0028 J	5.3	0.01	5.4	0.01	0.00011 J	0.011	6.2	0.0015 U	0.00018 U	3.2	0.0003 J	0.004	0.029 J
	2014	1.6	0.0011 J	0.0026	0.18	0.0027	0.003	21	0.002 J	0.0017	0.0082	14	0.012	9.7	0.002	0.0001 U	0.016	1.7	0.0029 J	0.0005 U	4.8	0.0005 U	0.00058	0.031 J
SP-DR-01	2015	0.022 J	0.001 U	0.001 U	0.12	0.0005 U	0.0005 U	34	0.00038 J	0.00014 J	0.0005 U	0.24	0.0005 U	7.1	0.0034	0.0001 U	0.00066 J	1.6	0.0025 U	0.00043 J	4.7	0.0005 U	0.0005 U	0.024 J
	2016	0.77	0.00075 U	0.00033	0.094	0.0005 U	0.0005 U	26	0.00078 J	0.0037 J	0.0016 J	3.1	0.0019	7	4.8	0.0001 U	0.0051 J	12.1	0.0025 U	0.0005 U	3.7	0.0005 U	0.0017 J	0.016 J
	2017	0.84	0.00082 J	0.0029	0.096	0.00038 J	0.00036 J	30	0.0021 J	0.0062	0.0023 J	5.9	0.0024	8.4	5.1	0.0001 U	0.0067 J	1.9	0.0025 U	0.00024 J	3.6	0.00022 J	0.0018 J	0.14
	2018	11	0.0017 J	0.0056	0.2	0.0023	0.0033	6.4	0.02	0.012	0.012	20	0.02	4.6	1.2	0.0001 U	0.021	3.2	0.0025 U	0.00031 J	1.3	0.0013 J	0.017	0.071
	2019	0.11	0.00074 U	0.001 J	0.034	0.0003 U	0.00037 U	20.2	0.00074 U	0.0019 U	0.0058	1.8	0.00074 U	3	0.64	0.00016 U	0.002 J	0.99	0.0019 U	0.00074 U	1.2	0.0003 U	0.00074 U	0.0062 J
	2020	0.53	0.00074 U	0.0026 J	0.091	0.0003 U	0.00037 U	28.4	0.0035	0.004 J	0.0019 U	7.9	0.0017 J	5.7	2.3	0.0001 U	0.0034 J	1	0.0019 U	0.00074 U	2.1	0.0003 U	0.0014 J	0.0075
	2021	0.12 J	0.001 U	0.00093 U	0.037	0.0004 U	0.00073 U	19.5	0.002 U	0.002 U	0.0036 U	0.072	0.0022 U	3.5	0.26	0.00017 J	0.0073 U	1.7	0.0073 U	0.0014 U	1.6	0.0073 U	0.002 U	0.0073 U
	2014	0.13	0.001 U	0.001 J	0.1	0.00072 J	0.0005 U	20	0.001 J	0.0014	0.00028 J	3.4	0.00028 J	9.3	0.001	0.0001 U	0.0099 J	1.6	0.0025 U	0.00085 J	4.5	0.0005 U	0.00085 J	0.0097 J
	2015	0.055	0.001 U	0.0059	0.13	0.00062 J	0.0005 U	15	0.00097	0.00011 J	0.0005 U	19	0.00043 J	6.1	5.5	0.0001 U	0.0023 J	2.3	0.0025 U	0.0005 U	2.2	0.0005 U	0.001 J	0.0043 J
	2016	0.031 J	0.0004 J	0.0002	0.074	0.0005 U	0.0005 U	26	0.0023	0.0005 J	0.0052	0.64 J	0.0005 U	6.7	4.1	0.0001 U	0.0044 J	1.1	0.0025 U	0.0005 U	3.7	0.0005 U	0.0005 U	0.012 J
SP-DR-01 (Filtered)	2017	0.011 J	0.00075 U	0.0015 J	0.076	0.0005 U	0.0005 U	31	0.00035 J	0.0005	0.00068 J	2.2	0.0005 U	8.4	4.7	0.0001 U	0.0046 J	1.7	0.0025 U	0.0005 U	3.2	0.0005 U	0.0025 U	0.039 J
	2018	0.3	0.0019 J	0.00088 J	0.068	0.0005 J	0.0005 J	5.4	0.00089 J	0.0036	0.0017 J	0.97	0.00052 J	3	0.55	0.0001 UJ	0.0041 J	1.5	0.0025 U	0.0005 U	1.1	0.0005 U	0.0025 U	0.014 J
	2019	0.03 U	0.00074 U	0.0011 U	0.065	0.00037 U	0.00037 U	33.4	0.00074 U	0.0019 U	0.0019 U	0.11	0.00074 U	19.3	0.0019	0.00003 U	0.0019 U	1.9	0.0019 U	0.00074 U	3.5	0.00037 U	0.00074 U	0.0042 J
	2020	0.03 U	0.00074 U	0.0011 U	0.055	0.00037 U	0.00037 U	28.7	0.00074 U	0.0019 U	0.0019 U	0.17	0.00074 U	6	0.92	0.00003 U	0.0019 U	0.92	0.0019 U	0.00074 U	2.3	0.00037 U	0.00074 U	0.0028 J
	2021	0.041 J	0.0066 U	0.0026 U	0.037	0.0013 U	0.00066 U	22	0.0016 U	0.0016 U	0.0033 U	0.29	0.002 U	3.6	0.24	0.00003 U	0.0066 U	1.9	0.0066 U	0.0013 U	1.7	0.0066 U	0.0016 U	0.0066 U
SP-DR-05	2013	0.14	0.00072 J	0.00061 U	0.055	0.00027 U	0.00027 U	52	0.0014 J	0.0018 J	0.0035 J	2.6	0.0012	24	0.57	0.000076 J	0.0041 J	2.6	0.0015 U	0.00018 U	5.5	0.00027 J	0.0008 J	0.021 J
SP-DR-05 (Filtered)	2013	0.0033 J	0.00052 U	0.00061 U	0.041	0.00025 U	0.00027 U	45	0.00076 J	0.0011 J	0.00057 J	0.11 J	0.00024 U	19 J	0.27	0.000073 J	0.0028 J	2.1	0.0015 U	0.00018 U	4.3	0.00016 U	0.00049 U	0.0066 J
WS/SE-CR-06	2015	1.2	0.001 U	0.0071	0.15	0.0012	0.0005 U	1																

Table 6. Comprehensive Radionuclide Sampling Results at SLDA

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
	2021	0.0229 U	0.012 U	0.029 U	5.5 U	0.156 U	0.11 U	0.065 U	0.471 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
	2021	0.025 U	0.029 U	0.037 U	4.5 U	0.163 U	0.115 U	0.047 U	0.437 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
	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
MW-01 (Filtered)	2013	0.0293 U	0.026 U	0.036 U	6.6 U	0.159 U	0.111 U	0.066 U	0.042 J
	2014	0.066 U	0.186 J	0.022 U	8.18 J	0.422 U	-0.005 U	-0.022 U	0.163 J
	2015	-0.053 U	0.051 U	-0.032 U	1.8 U	0.014 U	-0.006 U	-0.026 U	0.067 J
	2016	-0.008 U	0.099 J	0.034 U	-3.62 U	-0.048 U	-0.004 U	0 U	0.076 U
	2017	0.01 U	0.095 U	0.002 U	-3.39 U	0.429 U	-0.071 U	0.021 J	0.068 J
	2018	0.072 J	0.112 U	0.023 U	2.83 U	0.344 J	-0.03 U	0 U	0.06 U
	2019	-0.008 U	0.332 J	0.109 J	-0.824 U	0.039 U	0.012 U	0.012 U	0.18 J
	2020	-0.015 U	-0.021 U	0.001 U	-0.3 U	-0.033 U	0.004 U	0.01 U	0.023 U
	2021	0.076 U	0.035 J	0.026 J	9.6 U	0.146 U	0.119 U	0.032 U	0.032 U
MW-02	2004	0.503 U		0.529 U	15.7 U			0.429 U	
	2004	R		0.326 U	11.9 U			0.298 J	
MW-02A	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
	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
	2021	0.055 U	0.049 U	0.022	12.1 U	0.152 U	0.119 U	0.059 U	Note 1

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-02A (Filtered)	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
	2021	0.037 U	0.032 U	0.048 U	7.2 U	0.109 U	0.107 U	0.021	Note 1
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
	2021	0.024 U	0.013 U	0.013 U	8.5 U	0.107 U	0.108 U	0.027 U	0.15 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
	2021	0.027 U	0.01 U	0.024 U	6.4 U	0.134 U	0.108 U	0.034 U	0.109 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
	2021	0.031 U	0.009	0.02 U	5.6 U	0.144 U	0.113 J	0.042 U	0.15 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
	2021	0.03 U	0.026 U	0.033 U	5.9 U	0.129 U	0.11 U	0.041 U	0.152 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-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)	2021	0.023 U	0.029 U	0.042 U	5.7 U	0.127 U	0.105 U	0.01 U	0.036 U
	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
MW-09A	2021	0.028 U	0.026 U	0.026 U	4.9 U	0.126 U	0.107 U	0.028 U	0.041 J
	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
MW-09A (Filtered)	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
	2021	0.022 U	0.032 U	0.032 U	6.2 U	0.103 U	0.103 U	0.026 U	0.195 J
	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
MW-12D	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
	2021	0.0224 U	0.045 U	0.039 U	6 U	0.111 U	0.108 U	0.035 U	0.235 J
MW-13	2004	0.593 U		0.595 U	10.2 U			0.774 J	
	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
MW-13 (Filtered)	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
	2021	0.0217 U	0.03 U	0.038 U	6.4 U	0.135 U	0.108 U	0.034 U	0.214 J
	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
	2021	0.024 U	0.027 U	0.021	5.7 U	0.131 U	0.104 U	0.034 U	0.252 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-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
	2021	0.024 U	0.059 U	0.037 U	7.4 U	0.121	0.105 U	0.026 U	0.175 J
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
	2021	0.0219 U	0.03 U	0.026 U	5.4 U	0.128 U	0.111 U	0.046 U	0.208 J
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
	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
	2021	0.0238 U	0.037 U	0.043 U	5.9 U	0.113 U	0.11 U	0.028 U	0.197 J
MW-15 (Filtered)	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
	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
	2021	0.026 U	0.037 U	0.055 U	5.8 U	0.131 U	0.112 U	0.047 U	0.158 UJ
MW-16BC	2004	0.564 U		0.035 J	12 U			0.468 J	
MW-19	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
	2021	0.03 U	0.026 U	0.026 U	7.2 U	0.126 U	0.107 U	0.028 U	Note 1

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-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	
	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
	2021	0.031 U	0.027 U	0.038 U	8.1 U	0.123 U	0.109 U	0.041 U	Note 1
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	
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
	2020	0.073 U	0.027 J	0.063 U	10.4 U	0.124 U	0.11 U	0.039 U	0.286
	2021	0.031 U	0.02 U	0.031 U	6.2 U	0.128 U	0.11 U	0.048 U	0.118 J
MW-33 (Filtered)	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
	2020	0.077 U	0.067 U	0.076 U	10.3 U	0.11 U	0.101 U	0.039 U	0.339
	2021	0.029 U	0.025 U	0.008 U	5.9 U	0.156 U	0.11 U	0.066 U	0.089 J
MW-35	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
	2021	0.029 U	0.017 UJ	0.052 UJ	13.6 UJ	0.173	0.108 U	0.115	0.775
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
	2021	0.028 U	0.011 U	0.04 U	8.9 U	0.119 U	0.105 U	0.035 U	0.201 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-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
	2021	0.03 U	0.022 U	0.029	8.3 U	0.121 U	0.114 U	0.038 U	0.054 J
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
	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
	2021	0.0272 U	0.006 U	0.017	5.5 U	0.129 U	0.124 U	0.035 U	0.042 J
MW-41	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	
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
	2021	0.0282 U	0.018 U	0.024 U	5.1 U	0.167	0.114 U	0.029 U	2.3
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
	2021	0.028 U	0.0054	0.0107	4.8 U	0.177 U	0.129 U	0.067 U	1.52
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
	2021	0.028 U	0.033 U	0.01 U	6.5 U	0.109 U	0.122	0.039	0.840 J
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
	2021	0.03 U	0.02 U	0.02 U	5 U	0.16	0.12 U	0.093	0.498
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
	2021	0.029 U	0.012	0.024 U	5.9 U	0.191	0.114 U	0.058	0.403

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-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
	2021	0.037 U	0.024 U	0.019 U	6.1 U	0.13 U	0.109 U	0.028 U	0.232 J
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
	2021	0.029 U	0.007	0.016 U	5.1 U	0.141 U	0.118 U	0.047 U	0.325
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
	2021								0.152 J
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
	2021	0.027 U	0.007 U	0.007 U	5.2 U	0.149 U	0.123 U	0.046 U	0.026 U
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
	2021	0.027 U	0.008	0.018 U	5.6 U	0.134 U	0.11 U	0.052 U	0.032 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	

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
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
	2021	0.028 U	0.007 U	0.026 U	5.7 U	0.124 U	0.107 U	0.04 U	0.125 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
	2020	0.077 U	0.026 U	0.026 U	10.4 U	0.104 U	0.102 U	0.01 J	0.222 J
	2021	0.029 U	0.018 U	0.025	5.9 U	0.138 U	0.109 U	0.043 U	0.222 J
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
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
	2021	0.029 U	0.008 U	0.014	5.3 U	0.137 U	0.118 U	0.047 U	0.094 J
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
	2021	0.028 U	0.024 U	0.035 U	6 U	0.122 U	0.1 U	0.032 U	0.084 J
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
	2021	0.021 U	0.026 U	0.042 U	5.6 U	0.132 U	0.112 U	0.049 U	0.258 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
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
	2021	0.023 U	0.034 U	0.025	5.4 U	0.128 U	0.109 U	0.019	0.222 J
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
	2021	0.023 U	0.013 U	0.013 U	6.3 U	0.128 U	0.109 U	0.041 U	0.243 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
	2021	0.023 U	0.044 UJ	0.062 UJ	9.3 UJ	0.131 U	0.106 U	0.041 U	0.249 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	
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	

Notes

Note 1: Samples MW-02A, MW-02A (Filtered), MW-22, and MW-22 (Filtered) were inadvertently discarded by the analytical laboratory prior to total uranium analysis.

Table 7. Groundwater Sampling Summary of Detections (2003-2021)

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	425	291	1.4	55000	1807.75	200.0	NC
ANTIMONY	424	65	0.2	6.4	1.14	6.0	NC
ARSENIC	425	91	0.62	120	9.18	10.0	NC
BARIUM	425	424	3.5	1600	215.28	2000.0	NC
BERYLLIUM	405	78	0.1	33	3.89	4.0	NC
CADMIUM	425	56	0.059	8.2	1.00	5.0	NC
CALCIUM	425	424	3100	430000	46254.25	NA	NC
CHROMIUM, TOTAL	425	287	0.31	4400	21.91	100.0	NC
COBALT	425	263	0.12	180	7.99	NA	NC
COPPER	425	246	0.23	150	8.76	1000.0	NC
IRON	425	367	20	310000	8121.65	300.0	NC
LEAD	425	109	0.26	39	2.77	15.0	NC
MAGNESIUM	425	424	590	100000	13388.80	NA	NC
MANGANESE	425	411	0.28	4500	253.77	50.0	NC
MERCURY	425	43	0.047	0.37	0.11	2.0	NC
NICKEL	425	342	0.22	680	22.92	100.0	NC
POTASSIUM	425	421	500	80000	3023.21	NA	NC
SELENIUM	425	73	1.5	14	2.98	50.0	NC
SILVER	424	30	0.18	1.2	0.48	100.0	NC
SODIUM	425	423	1100	240000	17249.88	NA	NC
THALLIUM	425	40	0.16	7	0.71	2.0	NC
VANADIUM	425	69	0.49	27	3.13	NA	NC
ZINC	425	330	1.8	2400	55.28	5000.0	NC
TOTAL URANIUM	427	350	0.036	17.7	0.58	30	0.9
Radionuclide	n	n	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
AMERICIUM-241	551	75	0.026	0.197	0.09	15	ND
PLUTONIUM-238	453	149	0.0054	0.585	0.15	15	ND
PLUTONIUM-239/240	537	103	0.0107	0.224	0.06	300 (2)	ND
PLUTONIUM-241	539	32	2.84	14.9	7.00	15	ND
THORIUM-228	433	150	0.078	4.23	0.51	15	ND
THORIUM-230	447	56	0.016	1.32	0.21	15	0.74
THORIUM-232	537	88	0.01	10.7	0.40	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 (2004-2021)

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	31	28	3.3	11000	721.94	200.0	NC
ANTIMONY	31	11	0.38	2.8	1.24	6.0	NC
ARSENIC	31	14	0.88	7.1	3.28	10.0	NC
BARIUM	31	31	28	320	84.81	2000.0	NC
BERYLLIUM	28	8	0.38	2.7	1.12	4.0	NC
CADMIUM	31	6	0.36	3.3	1.43	5.0	NC
CALCIUM	31	31	3600	52000	23345.16	NA	NC
CHROMIUM, TOTAL	31	19	0.35	20	2.45	100.0	NC
COBALT	31	21	0.14	17	5.18	NA	NC
COPPER	31	19	0.68	12	4.21	1000.0	NC
IRON	31	30	67	20000	3776.37	300.0	NC
LEAD	31	14	0.26	20	4.82	15.0	NC
MAGNESIUM	31	31	710	24000	7648.71	NA	NC
MANGANESE	31	31	8	5500	1443.84	50.0	NC
MERCURY	31	6	0.073	0.17	0.12	2.0	NC
NICKEL	31	24	0.66	21	6.02	100.0	NC
POTASSIUM	31	31	920	6200	2113.23	NA	NC
SELENIUM	31	2	1.5	2.9	2.20	50.0	NC
SILVER	31	4	0.24	1	0.50	100.0	NC
SODIUM	31	31	1100	219000	16503.23	NA	NC
THALLIUM	31	8	0.22	7.2	2.07	2.0	NC
VANADIUM	31	11	0.8	17	3.82	NA	NC
ZINC	31	27	2.7	140	19.80	5000.0	NC
TOTAL URANIUM	31	29	0.041	11.6	1.00	30	0.9
Radionuclide	n	n	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
AMERICIUM-241	75	9	0.058	0.262	0.10	15	ND
PLUTONIUM-238	35	8	0.09	0.195	0.13	15	ND
PLUTONIUM-239/240	71	8	0.025	0.114	0.07	300 (2)	ND
PLUTONIUM-241	71	7	4.02	16.6	9.70	15	ND
THORIUM-228	31	13	0.181	0.682	0.41	15	ND
THORIUM-230	35	10	0.023	0.993	0.36	15	0.74
THORIUM-232	71	4	0.011	0.091	0.04	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.

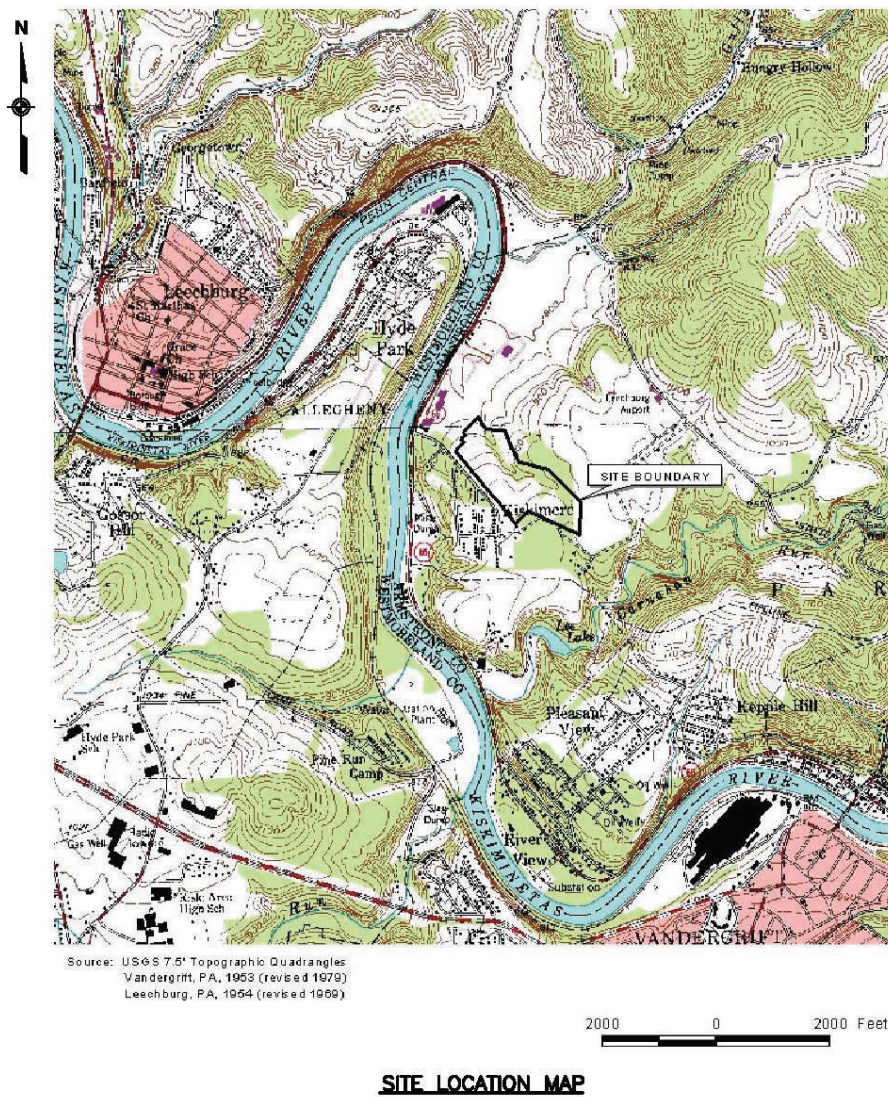
NA - No Standard Available

Average exceeds water quality standard.

NC - Not Calculated for non-FUSRAP constituents of concern

ND - Not Detected

FIGURES



STATE KEY MAP



SITE ADDRESS:
1105 MARY STREET
VANDERGRIFT, PA 15690

VICINITY MAP

**SHALLOW LAND DISPOSAL AREA
SITE LOCATION MAP**

URS

FIGURE 1-1

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

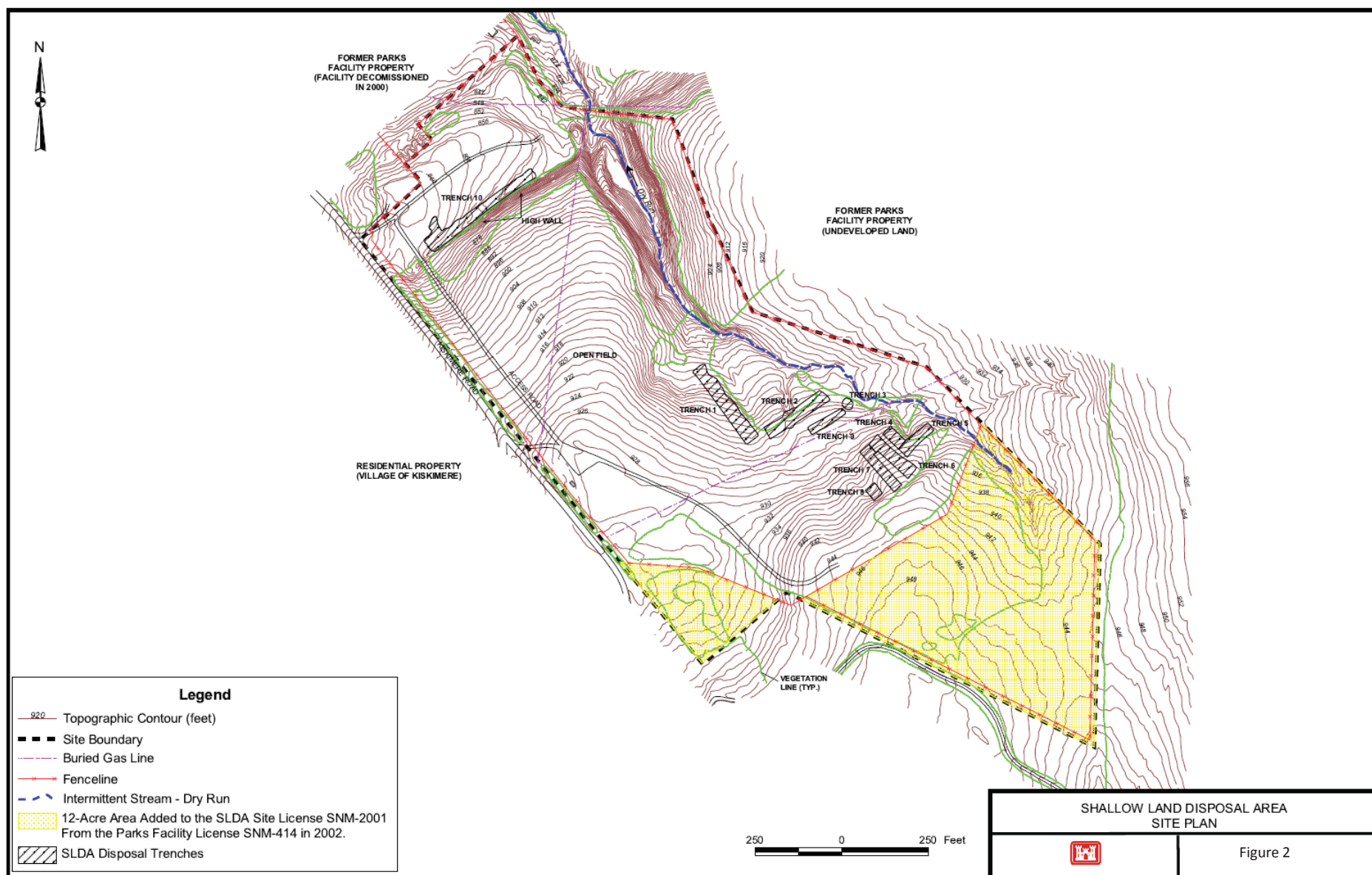


Figure 2. Shallow Land Disposal Area Site Plan

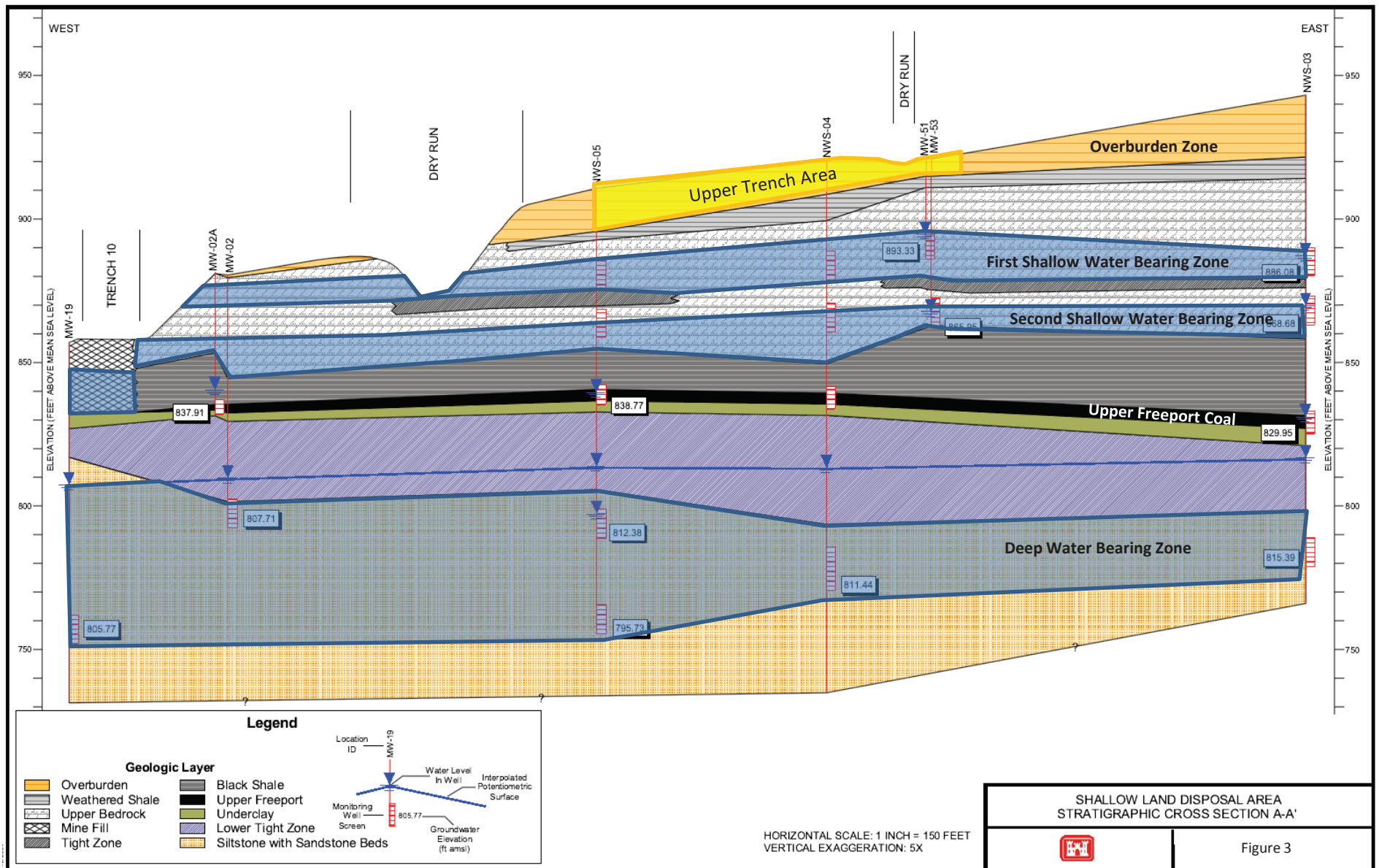
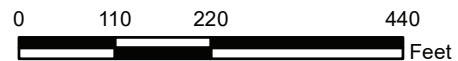


Figure 3. Northwest to Southeast Geologic Cross Section Through SLDA



Document Path: D:\Projects\GIS\ArdMap\SLDA\2022\Groundwater\220524_Nov21WgCon_SS.mxd

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	J.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Buffalo District Document Name: 220524_Nov21WgCon_SS.mxd Drawn By: H5TDESPM Date Saved: 09 Jun 2022 Time Saved: 1:58:18 PM	GROUNDWATER ELEVATION CONTOUR MAP OVERBURDEN - NOVEMBER 2021 <table border="1"><tr><td data-bbox="2128 1830 2719 1951">SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA</td><td data-bbox="2719 1830 3067 1951">FIGURE 4</td></tr></table>		SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA	FIGURE 4
	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 4																				





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Monitoring Well

Piezometer

Temporary Piezometer

Groundwater Elevation Contour (ft amsl)

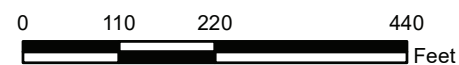
Groundwater Flow Direction

Trench

Fenceline

Site Boundary

Note: TPZ-05 was not used to generate the potentiometric surface due to possible anomalous readings.



J.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
BUFFALO, NY

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GROUNDWATER ELEVATION CONTOUR MAP
FIRST SHALLOW BEDROCK ZONE - NOVEMBER 2021

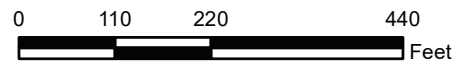
SHALLOW LAND DISPOSAL AREA
PARKS TOWNSHIP, PENNSYLVANIA

FIGURE 5

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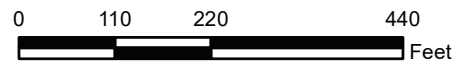
Legend <table border="0"><tr><td></td><td>Monitoring Well</td><td></td><td>Groundwater Flow Direction</td></tr><tr><td></td><td>Piezometer</td><td></td><td>Trench</td></tr><tr><td></td><td>Temporary Piezometer</td><td></td><td>Fenceline</td></tr><tr><td></td><td>Groundwater Elevation Contour (ft amsl)</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	J.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Buffalo District Document Name: 220524_Nov21WgCon_2S.mxd Drawn By: H5TDESPM Date Saved: 09 Jun 2022 Time Saved: 1:53:15 PM	GROUNDWATER ELEVATION CONTOUR MAP SECOND SHALLOW BEDROCK ZONE - NOVEMBER 2021 <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
	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 6																				





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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 7																				





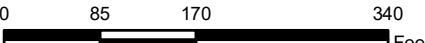
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	Monitoring Well		Groundwater Flow Direction																		
	Piezometer		Trench																		
	Temporary Piezometer		Fenceline																		
	Groundwater Elevation Contour (ft amsl)		Site Boundary																		
SHALLOW LAND DISPOSAL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



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Legend			 U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY	GROUNDWATER SAMPLING LOCATIONS (NOVEMBER 2021)	
 Monitoring Well/Piezometer (Sampled 2021)	 Monitoring Well (Upper Freeport Zone)	 Piezometer (Upper Freeport Zone)			
 Surface Water Location (Sampled 2021)	 Monitoring Well (Deep Bedrock)	 Historical Surface Water Sample			
 Monitoring Well (Overburden)	 Nested Monitoring Well	 Trench			
 Monitoring Well (First Shallow Bedrock)	 Piezometer (Overburden)	 Fenceline			
 Monitoring Well (Second Shallow Bedrock)	 Piezometer (First Shallow Bedrock)	 Boundary			



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SHALLOW LAND DISPOSAL AREA
PARKS TOWNSHIP, PENNSYLVANIA

FIGURE 9

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Legend  Surface Water Location (Sampled 2021)  Historical Surface Water Sample  Fenceline  Boundary		 J.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS BUFFALO, NY Document Name: 220524_2021Offsite.mxd Drawn By: H5TDESPM Date Saved: 24 May 2022 Time Saved: 12:22:23 PM	OFF-SITE SURFACE WATER SAMPLING LOCATIONS (NOVEMBER 2021)	
		SHALLOW LAND DISPOSAL AREA PARKS TOWNSHIP, PENNSYLVANIA		FIGURE 10