

**Rocky Flats Site, Colorado,
Surface Water Configuration
Adaptive Management Plan
Quarterly Report**

Third Quarter Calendar Year 2023

October 2023



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Abbreviations

AMP	Adaptive Management Plan
COU	Central Operable Unit
CY	calendar year
DOE	U.S. Department of Energy
EA	Environmental Assessment
POC	Point of Compliance

1.0 Introduction

The Proposed Action assessed in the *Rocky Flats Site, Colorado, Surface Water Configuration Environmental Assessment* (DOE 2011), hereafter referred to as the Environmental Assessment (EA), is to breach the remaining retention pond dams at the Rocky Flats Site, Colorado, to allow surface water flow to return to the approximate conditions that prevailed before the retention ponds were constructed. As stated in the EA, based on extensive water quality monitoring data and a thorough environmental review, the U.S. Department of Energy (DOE) Office of Legacy Management has determined that the Proposed Action does not present a significant impact on the environment under the National Environmental Policy Act evaluation criteria.

Some members of the public have commented that additional information should be collected before implementing the final steps of the Proposed Action to help reduce uncertainty about whether completion of the Proposed Action will adversely impact the quality of water flowing from the Site into downstream community watersheds. In response to the requests, DOE initiated a cooperative effort with neighboring community representatives and other interested stakeholders to develop and implement an Adaptive Management Plan (AMP) to provide additional information. The AMP group is composed of these representatives and stakeholders. The resulting AMP, the *Surface Water Configuration Adaptive Management Plan for the Rocky Flats Site, Colorado* (DOE 2023), first published in 2011, reflects DOE's long-term commitment to implementing the activities presented in the AMP.

The AMP provides for a monitoring and data evaluation program to assist in deciding when to implement the final steps of the Proposed Action, which include breaching the terminal dams. The terminal dams will be operated in a flow-through condition until the completion of the Proposed Action, which will provide data similar to what can be expected postbreach. In addition to the monitoring program, the AMP identifies certain performance indicators that DOE will consider in deciding whether to adjust the time frame for completing the Proposed Action.

This AMP Quarterly Report for the third quarter of calendar year (CY) 2023 is provided in accordance with Section 5.0, "Reporting," of the AMP. Section 3.0 of this report describes the third quarter data summary tables, which include all validated analytical data for the AMP monitoring objectives that were available as of September 30, 2023. Subsequent AMP reports will include data that were not tabulated in previous AMP reports.

AMP monitoring objectives, locations, and sampling criteria are itemized in Table 2 of the AMP. Additional field implementation for the AMP monitoring objectives can be found in the *Additional Field Implementation Detail for Selected Monitoring Objectives at the Rocky Flats Site, Colorado* (DOE 2022).

This report routinely includes analytical data for the following AMP monitoring objectives:

- Predischarge sampling (Item 1, AMP Table 2)
- Targeted groundwater monitoring (Item 2, AMP Table 2)
- Monitoring to evaluate flow-through operations at terminal Ponds A-4, B-5, and C-2 (Item 4, AMP Table 2)
- Storm-event monitoring (Item 5, AMP Table 2)

- Continuous flow-paced composite sampling to evaluate uranium transport (Item 6, AMP Table 2)
- Grab sampling for uranium in North and South Walnut Creeks (Item 7, AMP Table 2)
- Grab sampling for nitrate + nitrite as nitrogen in North Walnut Creek (Item 8, AMP Table 2)

2.0 AMP Highlights: Third Quarter CY 2023

- Two informal emails were transmitted to AMP participants providing notification that composite samples had been retrieved from the Points of Compliance (POCs): Woman Creek at the Central Operable Unit (COU) boundary and Walnut Creek at the COU boundary.
- Two informal emails were transmitted to AMP participants providing notification that recent analytical data from the POCs had been validated and would soon be available through the Geospatial Environmental Mapping System (GEMS).
- During the quarter, 15 samples were collected in support of AMP monitoring objectives.

3.0 Analytical Data: Third Quarter CY 2023

Analytical data for the third quarter of CY 2023 are provided in Tables 1 and 2 (at the end of this report). Table 1 provides the analytical results, and Table 2 lists the water sampling events during the quarter.

4.0 References

DOE (U.S. Department of Energy), 2011. *Rocky Flats Site, Colorado, Surface Water Configuration Environmental Assessment*, DOE/EA-1747, LMS/RFS/S06335, Office of Legacy Management, May.

DOE (U.S. Department of Energy), 2022. *Additional Field Implementation Detail for Selected Monitoring Objectives at the Rocky Flats Site, Colorado*, LMS/RFS/S08202, Office of Legacy Management, September.

DOE (U.S. Department of Energy), 2023. *Surface Water Configuration Adaptive Management Plan for the Rocky Flats Site, Colorado*, LMS/RFS/S07698, Office of Legacy Management, September.

Table 1. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	SAMPLE CODE	CAS Registry Number	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCERTAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
00193	WL	4/11/23	RFS01-10.2304056-001	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	87-88-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	7440-61-1	Uranium	Y	79	ug/L	B	F	0.03		FQ	G	STD
00193	WL	4/11/23	RFS01-10.2304056-001	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	87-88-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.26	mg/L	U	F	0.044		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	7440-61-1	Uranium	Y	22	ug/L	U	F	0.03		FQ	G	STD
00997	WL	4/19/23	RFS01-10.2304060-005	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD

Table 1. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	SAMPLE CODE	CAS Registry Number	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCERTAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
4087	WL	5/9/23	RFS01-10.2305062-027	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	87-68-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.044	mg/L	U	F	0.044		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	7440-61-1	Uranium	Y	32	ug/L	U	F	0.03		FJQ	G	STD
4087	WL	5/9/23	RFS01-10.2305062-027	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		FQ	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	87-68-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.044	mg/L	U	F	0.044		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	7440-61-1	Uranium	Y	14	ug/L	U	F	0.03		F	G	STD
10304	WL	4/13/23	RFS01-10.2304056-010	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		F	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD

Table 1. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	SAMPLE CODE	CAS Registry Number	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCERTAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
10594	WL	6/5/23	RFS01-10.2305063-008	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	87-68-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	NO3+NO2 AS N	Nitrate + Nitrite as Nitrogen	N	0.044	mg/L	U	F	0.044		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	7440-61-1	Uranium	Y	73	ug/L	B	F	0.03		FJO	G	STD
10594	WL	6/5/23	RFS01-10.2305063-008	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	156-59-2	cis-1,2-Dichloroethene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	87-68-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	91-20-3	Naphthalene	N	0.63	ug/L	U	F	0.63		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	100-42-5	Styrene	N	0.36	ug/L	U	F	0.36		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	127-18-4	Tetrachloroethene	N	0.4	ug/L	U	F	0.4		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	108-88-3	Toluene	N	0.32	ug/L	U	F	0.32		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	1330-20-7	Total Xylenes	N	0.33	ug/L	U	F	0.33		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	156-60-5	trans-1,2-Dichloroethene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	79-01-6	Trichloroethene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	7440-61-1	Uranium	Y	35	ug/L	W	F	0.03		FQ	G	STD
11104	WL	4/25/23	RFS01-10.2304058-012	75-01-4	Vinyl chloride	N	0.51	ug/L	U	F	0.51		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	71-55-6	1,1,1-Trichloroethane	N	0.39	ug/L	U	F	0.39		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	79-34-5	1,1,2,2-Tetrachloroethane	N	0.21	ug/L	U	F	0.21		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	79-00-5	1,1,2-Trichloroethane	N	0.27	ug/L	U	F	0.27		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	75-35-4	1,1-Dichloroethene	N	0.23	ug/L	U	F	0.23		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	120-82-1	1,2,4-Trichlorobenzene	N	0.58	ug/L	U	F	0.58		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	95-50-1	1,2-Dichlorobenzene	N	0.37	ug/L	U	F	0.37		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	107-06-2	1,2-Dichloroethane	N	0.54	ug/L	U	F	0.54		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	78-87-5	1,2-Dichloropropane	N	0.52	ug/L	U	F	0.52		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	541-73-1	1,3-Dichlorobenzene	N	0.33	ug/L	U	F	0.33		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	106-46-7	1,4-Dichlorobenzene	N	0.39	ug/L	U	F	0.39		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	71-43-2	Benzene	N	0.31	ug/L	U	F	0.31		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	75-25-2	Bromoform	N	1.2	ug/L	U	F	1.2		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	56-23-5	Carbon tetrachloride	N	0.57	ug/L	U	F	0.57		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	108-90-7	Chlorobenzene	N	0.42	ug/L	U	F	0.42		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	67-66-3	Chloroform	N	0.36	ug/L	U	F	0.36		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	74-87-3	Chloromethane	N	0.75	ug/L	U	F	0.75		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	156-59-2	cis-1,2-Dichloroethene	N	0.95	ug/L	J	F	0.32		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	100-41-4	Ethylbenzene	N	0.3	ug/L	U	F	0.3		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	87-68-3	Hexachlorobutadiene	N	1.2	ug/L	U	F	1.2		FQ	G	STD
42505	WL	5/30/23	RFS01-10.2305063-003	75-09-2	Methylene chloride	N	0.94	ug/L	U	F	0.94		FQ	G	STD

Table 1. Analytical Results for Water Samples

LOCATION CODE	LOCATION TYPE	DATE SAMPLED	SAMPLE CODE	CAS Registry Number	ANALYTE	FILTRATION STATUS	RESULT	UNITS	LAB QUALIFIERS	SAMPLE TYPE	DETECTION LIMIT	UNCERTAINTY	DATA VALIDATION QUALIFIERS	COLLECTION METHOD	LAB CODE
WOMPOC	SL	5/16/23	RFS01-13.2306095-002	7440-61-1	Uranium	N	1.09	ug/L		F	0.067			C	GEN
WOMPOC	SL	5/30/23	RFS01-13.2306098-016	14596-10-2	Americium-241	N	0.00508	pCi/L	U	F		0.00598		C	GEN
WOMPOC	SL	5/30/23	RFS01-13.2306098-016	PU-239,240	Plutonium-239, 240	N	0.00648	pCi/L	U	F		0.00735		C	GEN
WOMPOC	SL	5/30/23	RFS01-13.2306098-016	7440-61-1	Uranium	N	1.15	ug/L		F	0.067		J	C	GEN
WOMPOC	SL	6/15/23	RFS01-13.2306098-015	14596-10-2	Americium-241	N	0.00626	pCi/L	U	F		0.00649		C	GEN
WOMPOC	SL	6/15/23	RFS01-13.2306098-015	PU-239,240	Plutonium-239, 240	N	-0.0034	pCi/L	U	F		0.00737		C	GEN
WOMPOC	SL	6/15/23	RFS01-13.2306098-015	7440-61-1	Uranium	N	1	ug/L		F	0.067		J	C	GEN
WOMPOC	SL	6/21/23	RFS01-13.2307100-016	14596-10-2	Americium-241	N	-0.000922	pCi/L	U	F		0.006		C	GEN
WOMPOC	SL	6/21/23	RFS01-13.2307100-016	PU-239,240	Plutonium-239, 240	N	0.00519	pCi/L	U	F		0.00612		C	GEN
WOMPOC	SL	6/21/23	RFS01-13.2307100-016	7440-61-1	Uranium	N	1.79	ug/L		F	0.067			C	GEN

EXPLANATION

FILTRATION STATUS

N = Sample was not filtered.
Y = Sample was filtered.

UNITS

mg/L; ppm = milligrams per liter
pCi/L = picocuries per liter
ug/L = micrograms per liter
C = degrees celsius
mS/cm = milliSiemens per centimeter
NTU = normal turbidity units
s.u. = standard pH units
uS/cm = microSiemens per centimeter
umhos/cm = microSiemens per centimeter

SAMPLE_TYPE

F = Field Sample
D = Duplicate

DATA_VALIDATION_QUALIFIERS

<blank> No qualifiers needed for result.
F Low flow sampling method used.
G Possible grout contamination, pH > 9.
J Estimated value.
L Less than 3 bore volumes purged prior to sampling.
Q Qualitative result due to sampling technique.
R Unusable result.
U Parameter analyzed for but was not detected.
X Location is undefined.
999 Validation not complete.

LAB_QUALIFIERS

<blank> No qualifiers needed for result.
* Replicate analysis not within control limits.
+ Correlation coefficient for MSA < 0.995.
> Result above upper detection limit.
A TIC is a suspected aldol-condensation product.
B Inorganic: Result is between the IDL and CRDL. Organic & Radiochemistry: Analyte also found in method blank.
C Pesticide result confirmed by GC-MS.
D Analyte determined in diluted sample.
E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
H Holding time expired, value suspect.
I Increased detection limit due to required dilution.
J Estimated.
M GFAA duplicate injection precision not met.
N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
S Result determined by method of standard addition (MSA).
U Analytical result below detection limit.
W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

LOCATION_TYPE

SL SURFACE LOCATION
TS TREATMENT SYSTEM
WL WELL

LAB_CODE

GEN Gel Laboratories
STD Test America

COLLECTION_METHOD

G Grab
C Composite

Table 2. Water Sampling Events: Third Quarter CY 2023

Location Code	Sampling Dates		Sample Info			Analytes					Sample Tracking Info
	Start	End	Collection Method	Type	Filtered	VOC	U	Nitrate	Pu/Am	TSS	Sample ID
WALPOC	7/5/2023 11:45	7/5/2023 11:45	grab	F	No			X			RFS01-13.2306099-015
WOMPOC	6/21/2023 11:12	7/17/2023 11:22	composite	F	No		X		X		RFS01-13.2307100-016
GS12	6/21/2023 11:57	7/17/2023 12:11	composite	F	No		X				RFS01-13.2307100-007
B5INFLOW	6/21/2023 12:12	7/26/2023 10:05	composite	F	No		X				RFS01-02.2307051-002
WALPOC	6/29/2023 9:42	7/17/2023 11:56	composite	F	No		X		X		RFS01-13.2307100-014
SPOUT	7/18/2023 11:40	7/18/2023 11:40	grab	F	No			X			RFS01-04.2307116-014
GS13	7/18/2023 11:42	7/18/2023 11:42	grab	F	No			X			RFS01-04.2307116-012
GS10	7/31/2023 10:40	7/31/2023 10:40	grab	F	No		X				RFS01-04.2308117-010
SPOUT	7/31/2023 11:40	7/31/2023 11:40	grab	F	No		X	X			RFS01-04.2308117-014
SPOUT	8/14/2023 12:25	8/14/2023 12:25	grab	F	No			X			RFS01-04.2308118-015
SW093	8/30/2023 11:50	8/30/2023 11:50	grab	F	No		X	X			RFS01-04.2308119-016
SPOUT	8/30/2023 12:05	8/30/2023 12:05	grab	F	No		X	X			RFS01-04.2308119-015
GS10	8/30/2023 12:45	8/30/2023 12:45	grab	F	No		X				RFS01-04.2308119-011
SPOUT	9/18/2023 11:57	9/18/2023 11:57	grab	F	No			X			RFS01-04.2309120-015
SPOUT	9/28/2023 11:55	9/28/2023 11:55	grab	F	No		X	X			RFS01-04.2309121-015

FILTRATION STATUS

No = Sample was not filtered.
 Yes = Sample was filtered.

SAMPLE_TYPE

F = Field Sample
 D = Duplicate

ANALYTES

Pu/Am = plutonium and americium
 TSS = total suspended solids
 U = uranium
 VOC = volatile organic compound