

Parametrix No. 553-1550-067

Ryan Gardiner, Project Manager
Washington State Department of Ecology
Toxics Cleanup Program
15700 Dayton Ave. N.
Shoreline, Washington 98133

Re: South Park Landfill First Quarter 2025 Progress Report

Dear Ryan:

This progress report provides an explanation of actions taken during the referenced period.

General Activities During the 2026 First Quarter

SRDS Property

- The old South Transfer Station seep area (compactor shed) is fenced off and locked and all safeguards are still in place.
- Solid Waste Operations and Household Hazardous Waste Collection continues on the Seattle Public Utilities (SPU) old South Transfer Station property.
- Drums of excavated soil generated from an underground water leak early last summer were transported and disposed of at Chemical Waste Management in Arlington, Oregon.
- Another underground water leak occurred this spring and water was shut off. Ongoing activities to repair the leak similar to the 2024 leak will occur in the second quarter of 2025.
- SPU provided a temporary sublease/permit of a small portion of the SRDS property to Strategic Materials, Inc. (SMI) for clean glass cullet storage. SMI stacked ecology blocks to contain the glass cullet in two areas along the southern border of SRDS property. In December 2024 one of those areas had a failure with the stacked ecology blocks resulting in several blocks falling onto the cap and glass spilling into the swale. A vactor truck was used to remove the spilled glass. The glass and soil that were removed went through characterization and disposal.

SMI removed the glass from all stockpiles on SRDS property in January 2025. Inspections were conducted to verify that no damage was done to the cap. Cleanup of residual cullet, ecology block fragments, and glass labels is ongoing.

- SPU also performed 2 waste audits on a small portion of the SRDS property. KCPH is aware of this proposed activity. An additional 3 waste audits are planned for the remainder of 2025.

CenterPoint South Park LLC Property

- Ongoing remote monitoring of the landfill gas system blowers. The current tenant Amazon vehicle parking is active on CenterPoint property. First Student has vacated the property.
- Quarterly inspection of the methane alarms in the on-site buildings was not conducted as the buildings are vacant.



- Conducted quarterly operation and maintenance of the landfill gas system.
- Two 25' wide barrier gates were installed at each end of private driveway. The holes where the posts were buried were filled with asphalt to maintain a seal on the landfill cap.

Overall Settlement Parcels

- The 2025 first quarter compliance monitoring was completed. SPU staff conducted the gas monitoring and the Parametrix team conducted the groundwater monitoring.
- Parametrix reviewed field measurements and completed data management for the 2025 first quarter compliance monitoring event.
- The 2024 annual report was completed. It was submitted to Ecology on March 31, 2025. The 2024 mid-year cap reinspection report was finalized and included in the annual report.

Deviations from Samples, Required Tasks, CAP, or Schedule

There were no deviations to report this quarter.

Data Summary

The perimeter gas probes were monitored by SPU on January 28, 2025. The recorded monitoring data are included as an attachment. All concentrations were less than the regulatory action limit of 5 percent by volume. Methane was detected at the following gas probes:

Probe	CH4 (% by volume)	Blocked	Comments
GP-15	0.8%	Yes	Below trigger values

The groundwater wells were monitored by the Site Coordinator between February 3 and 5, 2025. The monitoring samples were analyzed by Analytical Resources, LLC. Data validation is complete and a trigger assessment for vinyl chloride was performed. A draft data summary table, updated time-series plots, and the final lab reports for the 2025 first quarter are included as attachments to this progress report.

Data management is complete for the 2025 first quarter compliance monitoring event.

Upcoming Activities

SRDS Property

- SPU has added significant scope changes to the STS Phase II project including combining stormwater treatment from the STS property to the SRDS property, larger trailer canopy, a combined electrical building, and crew quarter changes. The final design is anticipated to be completed in the winter of 2025.
- Repair to underground water leak will occur in the second quarter of 2025.
- Ongoing cleanup of residual cullet, ecology block fragments, and glass labels from SMI glass storage.



CenterPoint Property

- Ongoing remote monitoring of the CenterPoint property landfill gas system blowers.
- Complete the second quarter 2025 operation and maintenance of the landfill gas system.
- Catch basin cleaning and sediment removal and other repairs as noted in the 2024 mid-year cap reinspection.

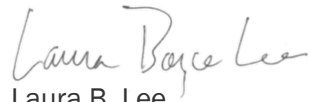
Overall Settlement Parcels

- SPU and the Site Coordinator will complete the 2025 second quarter compliance monitoring. Groundwater monitoring will transition from the Parametrix team to SPU after the second quarter monitoring event.
- The final permit was approved for the supplemental gas probe project. The Site Coordinator will work with SPU to contract with a driller to install the new supplemental gas probes as described in the approved Supplemental Gas Probes Work Plan, repair damaged probe GP-28, and remove the old, buried purge water drums.
- The Site Coordinator will conduct the 2025 annual cap inspection and complete observation of cap repairs or maintenance completed by the property owners.

If you have any questions regarding this progress report, please do not hesitate to contact me.

Sincerely,

Parametrix



Laura B. Lee
Project Manager

cc: Mark Jusayan, SPU Solid Waste Capital Planning and Landfill Closure Program Manager
Min Soon Yim, SPU Landfill Manager
Ashley Piatek, CenterPoint Properties
Jeff Fowler, SPU, Solid Waste Line of Business Deputy Director
Susan Fife-Ferris, SPU, Solid Waste Line of Business/Solid Waste Planning Director
Megan J Joplin, SPU, Law Department, Attorney
Hui Yang, SPU, SRDS Redevelopment Project Manager
Lucie Harpster, SPU Solid Waste Transfer Station Manager



Attachments

- 1 Landfill Gas and Groundwater Compliance Monitoring Field Sheets, First Quarter 2025
- 2 Draft Groundwater Quality Data Summary, First Quarter 2025
- 3 Draft Groundwater Quality Time Series Plots through First Quarter 2025
- 4 First Quarter 2025 Groundwater Laboratory Data

Attachment 1

Landfill Gas and Groundwater
Compliance Monitoring Field
Sheets,
First Quarter 2025

South Park Landfill
First Quarter 2025 Gas Probe Monitoring Data

Gas Probe	Date	Time	Rel. Press. inches H2O	CH4 %	CO2 %	O2 %	Balance %	Blocked (Y/N)	Baro. Press. inches Hg
SP00GP23	1/28/2025	8:36	-0.17	0.0	5.9	16.0	78.1	N	30.23
SP00GP07	1/28/2025	8:42	-0.15	0.0	1.7	20.3	78.0	N	30.24
SP00GP33	1/28/2025	8:59	-0.18	0.0	1.0	20.5	78.5	N	30.22
SP00GP37	1/28/2025	9:16	-0.19	0.0	9.0	5.1	85.9	N	30.22
SP00GP38	1/28/2025	9:26	-0.14	0.0	11.9	4.8	83.3	N	30.24
SP00GP11	1/28/2025	9:39	-0.17	0.0	1.9	19.3	78.8	N	30.24
SP00GP03	1/28/2025	9:44	-0.15	0.0	5.1	12.4	82.5	N	30.22
SP00GP31	1/28/2025	9:55	-0.15	0.0	5.1	11.3	83.6	N	30.22
SP00GP16	1/28/2025	10:11	-0.13	0.0	8.8	9.5	81.7	N	30.21
SP00GP29	1/28/2025	10:18	-0.15	0.0	14.0	0.2	85.8	N	30.21
SP00GP28	1/28/2025	10:25	-0.15	0.0	0.2	20.2	79.6	N	30.22
SP00GP27	1/28/2025	10:32	-0.14	0.0	9.3	0.8	89.9	N	30.23
SP00GP09	1/28/2025	10:40	-0.16	0.0	6.6	13.3	80.1	N	30.21
SP00GP13	1/28/2025	10:58	-8.76	0.0	3.2	12.1	84.7	Y	30.22
SP00GP32	1/28/2025	11:07	-0.02	0.0	0.2	18.0	81.8	Y	30.23
SP00GP15	1/28/2025	11:14	-21.91	0.8	3.9	1.5	93.8	Y	30.11
SP00GP26	1/28/2025	11:27	0.04	0.0	1.8	18.3	79.9	N	30.21

GEM™5000; G5 V1_15_12; LSGAM:6_0_20160627; {15109474416}

Water Level Measurement Field Report

DATE <u>2/3/2025</u>		JOB NO. 553-1550-067	
PROJECT: South Park Landfill		CLIENT: Seattle Public Utilities	
LOCATION: Seattle, WA			
WEATHER	TEMP <u>OVERCAST</u> <u>32</u> ° at <u>8:00</u> AM <u>~38</u> ° at <u>1005</u> PM AM		
PRESENT AT SITE <u>AURIE F., CHRIS B., SPU: Tyler, Dunham, Wilson</u>			

THE FOLLOWING WAS NOTED:

WELL NUMBER	Time	Measured Depth to Water (ft from TOC or SG level)	Total Measured Well Depth (ft from TOC)	Measuring Point	Total Well Depth (ft bgs)	Screen Interval (ft bgs)	SU (ft)
MW-12	803	5.56	—	TOC	15.3	10-15	1.52
MW-14	811	2.42	—	TOC	21.8	11.5-21.5	0.8
MW-29	823	6.81	—	TOC	30	20-30	-0.29
MW-18	833	15.02	—	TOC	40.4	30-40	1.25
MW-25	840 ⁹⁰⁶	10.58 ^{13.58}	—	TOC	27	22-27	2.79
MW-32	849	10.51	—	TOC	24	19-24	-0.44
MW-33	840	10.68	—	TOC	25	20-25	-0.47
MW-26	954	9.36	—	TOC	25	15-25	2.39
MW-27	1004	8.09	—	TOC	20	10-20	2.04
MW-10	904	12.80	—	TOC	45	35-45	1.65
MW-24	955	9.60	—	TOC	45.3	35-45	1.56
MW-08	1002	8.06	—	TOC	45.6	35.5 - 45.5	1.88
MW-30	922	9.85	—	TOC	13	8-13	-0.53
MW-31	918	10.76	—	TOC	23	18-23	-0.46

Comments:

* MW-29 allowed to equilibrate for ~5 minutes
~~22.5 ft and 22.5 ft corrected to 22.5 ft.~~

TOC – top of PVC casing

SG – staff gauge

SIGNED: Chris B.

* MW-32 manometer test flooded, waited 5 min → WL did not change

South Park Landfill

South Park Landfill

Well ID: MW-10

Samplers: Chris Bourgeois

Well Casing/Diameter: PVC/2 in

Purge Water Disposal Method: O/WS

Pump Intake Depth: 40.0 ft

End Purge Time: 1205

Sampling Data

Sample ID: SPL-GW-MW10-0225 Time Collected: 12:10 Weather: 37°F, Cloudy

Sample Description (Color, Turbidity, Odor, Other): No color, small particulates, no odor

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☐ Yes ☒ No If yes, ID: _____

MS/MSD Collected: ☐ Yes ☒ No

South Park Landfill

Date: 2/4/25

Sampling Organization: Parametrix

Samplers: Chris Bourgeois

Purge Data Screened Interval (ft bgs): 11.5-21.5

Well Casing/Diameter: PVC/2 in

Initial Depth of Water (Ft below TOC): 2.50

Purge Water Disposal Method: O/WS

Purge Device	dedicated bladder pump
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Pump Intake Depth: 16.5 ft

Begin Purge
Time:

1117

End Purge Time:

1215

Sampling Data

Sample ID: SPL-GW-MW14-0225

Time Collected: 1220

Weather: clear/sunny cold

Sample Description (Color, Turbidity, Odor, Other): some turbidity (flaky, orange)

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☐ Yes ☒ No

If yes, ID:

MS/MSD Collected: ☐ Yes ☒ No

Additional Information/Comments

WATER IS BROWN IN BUCKET.

South Park Landfill

Well ID: MW-25

Samplers: Chris Bourgeois

Well Casing/Diameter: PVC/2 in

Purge Water Disposal Method: O/WS

Pump Intake Depth: 24.5 ft

End Purge Time: 12:50

Sampling Data

Weather: 37°F cloudy

Sample Description (Color, Turbidity, Odor, Other): No color, small particulates, no odor

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

If yes, ID:

☒ No

Additional Information/Comments

South Park Landfill

Date: 2/5/25

Samplers: Chris Bourgeois

Well Casing/Diameter: PVC/2 in

6.61

O/WS

Pump Intake Depth: 25.0 ft

13:20

End Purge Time:

14:02

Sampling Data

Time Collected: 14:05

Weather: Shower, 37°F

Sample Description (Color, Turbidity, Odor, Other): No color, small particulate, no odor

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☐ Yes ☒ No

If yes, ID:

MS/MSD Collected: ☐ Yes ☒ No

Additional Information/Comments

GROUNDWATER SAMPLE COLLECTION FORM

South Park Landfill

Project No.: 553-1550-067

Date:

2/4/25

Well ID: MW-30

Sampling Organization: Parametrix

Samplers: Chris Bourgeois

Purge Data Screened Interval (ft bgs): 8.0-13.0

Well Casing/Diameter: PVC/2 in

Initial Depth of Water (Ft below TOC): 9.86

Purge Water Disposal Method: O/WS

Purge Device peristaltic pump

Pump Intake Depth: 10.5 ft

Begin Purge Time: 12:54

End Purge Time: 14:07

Time	Depth to Water (feet below MP)	Pump Setting	Purge Rate ^{ml/min}	Cum. Vol. Purged	Temp (°C)	DO (mg/L)	Specific Conductivity (µS/cm)	pH (units)	ORP (mv)	Turbidity (NTU)	Comments
13:00	10.07	N 60%	250		11.5	1.61	441.2	6.23	20.4	54.1	V. SL. CLOUDY, BROWN
13:05		ON DIA	260		11.4	1.02	410.0	6.17	42.9	50.7	N/O
13:10	10.03	"			11.5	0.95	398.6	6.14	47.4	40.9	
13:15	10.03	"		1.4 GAL	11.5	0.94	393.3	6.14	47.7	34.9	" "
13:20	10.03	"			11.5	0.94	392.6	6.14	48.6	23.3	" "
13:25	10.03	"	270		11.5	0.99	391.5	6.14	49.5	14.5	CLEAR
13:30	10.03	"	"		11.4	1.00	392.0	6.13	50.1	10.2	" "
13:35	10.03	"	"	2.75 GAL	11.4	1.02	391.5	6.12	51.3	7.51	" "
13:40	10.03	"	"		11.3	1.08	387.6	6.12	51.2	6.92	
13:45	10.04	"	"	3.25	11.3	1.08	388.4	6.12	51.5	6.67	
13:50	10.04	"	"	3.75	11.2	1.14	387.2	6.11	51.9	5.94	
13:55	10.04	"	"		11.2	1.15	384.4	6.11	52.8	3.71	
14:00	10.04	"	"		11.3	1.17	384.8	6.13	52.2	2.86	
14:05	10.04	"	"	4.75	11.3	1.22	384.5	6.09	54.8	2.49	

Stabilization Criteria 3% 10% , or 3<0.5 3% ± 0.1 ± 10 mv 10% or 3 <5 NTU

Sampling Data

Sample ID: SPL-GW_MW30-0225

Time Collected: 14:10

Weather: Clear, 33 F°

Sample Description (Color, Turbidity, Odor, Other): CLEAR, N/S

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☐ Yes ☒ No If yes, ID: _____MS/MSD Collected: ☐ Yes ☒ No

Additional Information/Comments SL. BROWN WATER IN BUCKET.

South Park Landfill

Date: 2/4/25

Well ID: MW-31

Samplers: Chris Bourgeois

Well Casing/Diameter: PVC/2 inPurge Water Disposal Method: O/WS

Pump Intake Depth: 20.5ft

End Purge Time: 1507

Sampling Data

Time Collected: 15:10

Weather: Cloudy, 43°F

Sample Description (Color, Turbidity, Odor, Other): V. SL. PARTICULATE, V. SL. SULF. ODOR

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☐ Yes ☒ No If yes, ID:

MS/MSD Collected: ☐ Yes ☒ No

Additional Information/Comments

SL. BROWN WATER IN BUCKET.

South Park Landfill

Date: 2/5/25

Samplers: Chris Bourgeois

Well Casing/Diameter: PVC/2 in

Purge Water Disposal Method: O/WS

Pump Intake Depth: 21.5 ft

End Purge Time: 900

Stabilization Criteria	3%	10% , or 3<0.5	3%	± 0.1	± 10 mv	10% or 3 <5 NTU
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Time Collected: 900

Weather: light snow

Sample Description (Color, Turbidity, Odor, Other): few orange flakes

Sample Analyses: cis-1,2-DCE, vinyl chloride, total iron, total manganese

Duplicate Sample Collected: ☒ Yes ☐ No

If yes, ID: SPL-GW_MW60-0225 2 9.30

MS/MSD Collected: ☒ Yes ☐ No

1 of 1

South Park Landfill

Well ID: MW-33

Samplers: Chris Bourgeois

955

Parametrix

Attachment 2

Draft Groundwater Quality
Data Summary,
First Quarter 2025

Groundwater Quality Data Summary, First Quarter 2025, South Park Landfill																				
			Upgradient Wells			Downgradient Wells												Trip Blanks		
			A-Zone			Perched Zone	A-Zone								B-Zone					
			MW-12	MW-14	MW-29	MW-30 ¹	MW-25	MW-26	MW-61 (MW-26 Dup)	MW-27	MW-31 ¹	MW-32 ²	MW-60 (MW-32 Dup)	MW-33 ²	MW-08	MW-10	MW-18 ²	MW-24	MW-80	MW-81
Parameter	Units	Cleanup Level	2/3/25	2/4/25	2/5/25	2/4/25	2/5/25	2/4/25	2/4/25	2/3/25	2/4/25	2/5/25	2/5/25	2/5/25	2/3/25	2/5/25	2/5/25	2/4/25	2/4/25	2/5/25
Field Parameters																				
Temperature	C		10.9	13.4	10.7	11.3	12.9	12.1	--	11.3	13.5	12.8	--	13.7	11.4	13.0	12.3	11.9	--	--
Dissolved Oxygen	mg/L		0.50	0.20	0.21	1.22	0.22	0.35	--	0.29	0.24	0.25	--	0.24	0.23	0.22	0.31	0.21	--	--
Specific Conductivity	µS/cm		499	531	761	384.5	1209	212.1	--	449.1	513	870	--	1370	1265	1491	541	1044	--	--
pH	units		6.16	6.65	6.73	6.09	6.59	6.03	--	6.37	6.35	6.75	--	6.76	6.68	6.83	6.72	6.64	--	--
Redox	mv		146.1	-43.6	-75.3	54.8	-73.2	29.2	--	-62.7	-54.3	-104.7	--	-105.6	-98.5	-111.8	-64.9	-100.2	--	--
Turbidity	NTU		0.40	3.49	0.99	2.49	0.76	1.88	--	7.64	3.76	3.67	--	1.98	1.02	2.11	1.17	5.93	--	--
Metals																				
Iron, Total	mg/L	27 A-Zone	0.360 U	3.13	20.2	0.948	39.8	4.26	4.73	13.0	19.4	14.3 J	13.1	18.6	--	--	--	--	--	--
		31 B-Zone	--	--	--	--	--	--	--	--	--	--	--	--	14.4	34.4	12.9	26.6	--	--
Manganese, Total	mg/L	2.2	0.0292	0.840	0.626	0.0425	3.24	0.0605	0.0690	0.434	0.847	1.30	1.23	1.92	0.953	2.00	0.734	1.67	--	--
Volatile Organic Compounds																				
Vinyl Chloride	µg/L	0.29	0.0200 U	0.0200 U	0.0537	0.102	0.340	0.0819	0.0942	0.0827	0.790	0.285	0.305	0.148	0.0603	0.199	0.0200 U	0.0313	0.0200 U	0.0200 U
Cis-1,2-Dichloroethene	µg/L	16	0.20 U	0.20 U	0.20 U	0.24	0.20 U	0.32	0.28	0.21	0.33	0.40 J	0.43	0.20 U	0.20 U	0.58	0.20 U	0.20 U	0.20 U	0.20 U

Notes:

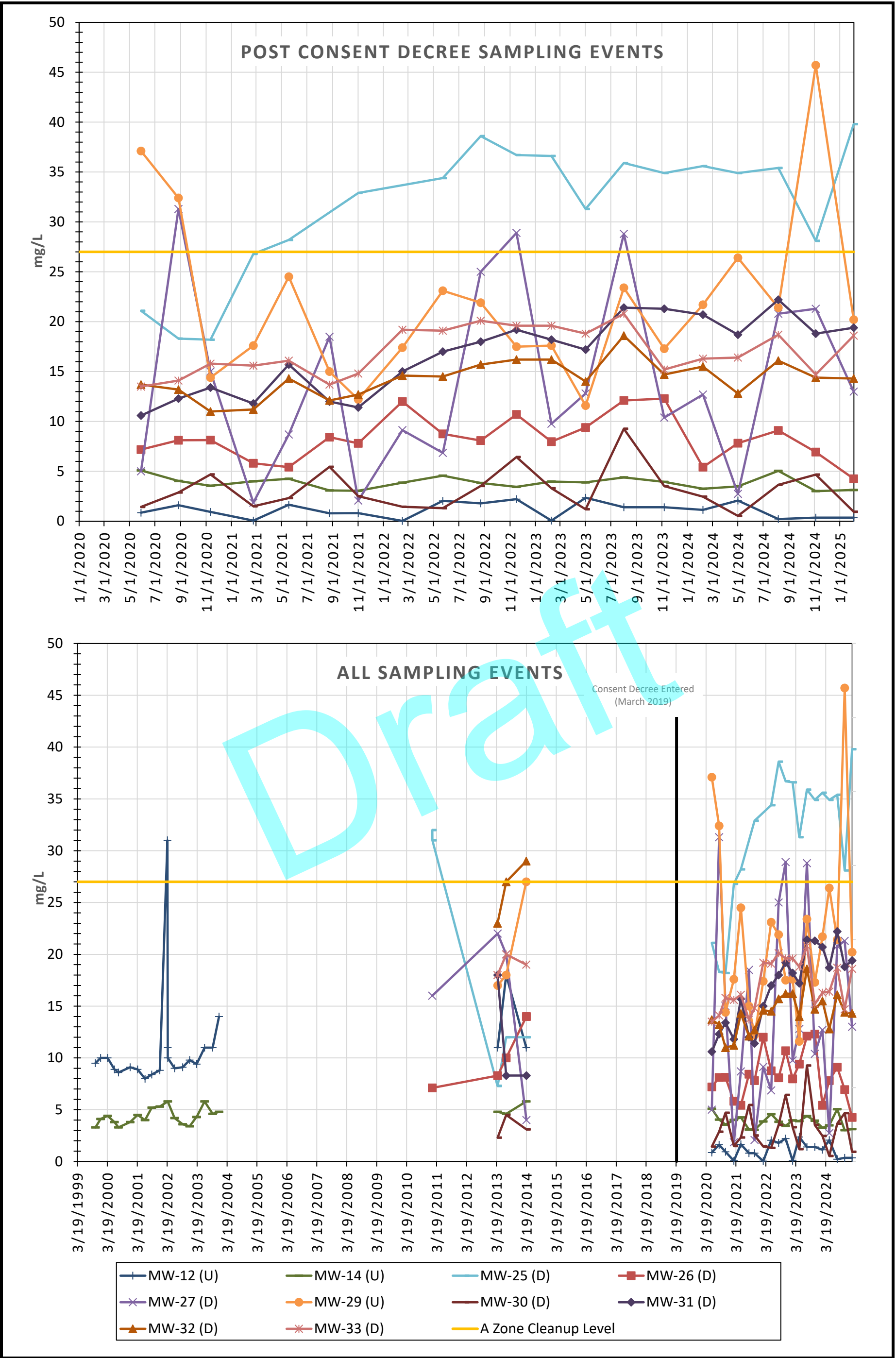
- ¹ MW 30 and MW-31 monitor the former Glitsa property and are not CPOC wells.
- ² MW 18 is completed in refuse along the downgradient edge of the Landfill; MW 32 and MW 33 are completed beneath refuse along the downgradient edge.
- = Exceeds cleanup level for CPOC wells
- = Not analyzed
- U = The analyte was analyzed for but was not detected above the reported sample quantitation limit.
- J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

Abbreviations:

- µg/L Micrograms per liter
- mg/L Milligrams per liter
- µS/cm Microsiemens per centimeter
- NTU Nephelometric Turbidity unit
- CPOC Conditional point of compliance

Attachment 3

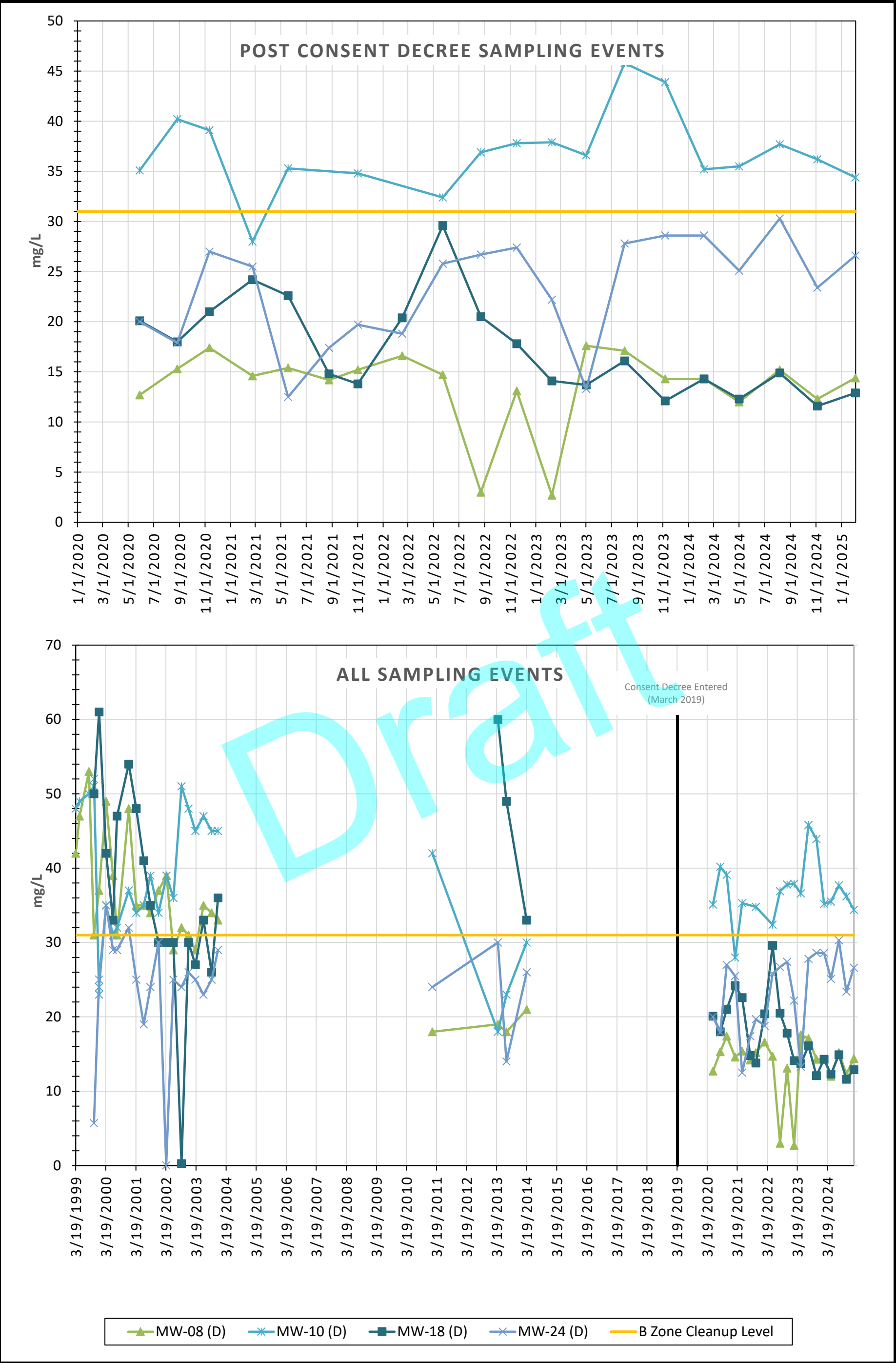
Draft Groundwater Quality
Time Series Plots through First
Quarter 2025



Parametrix

D = Downgradient
U = Upgradient

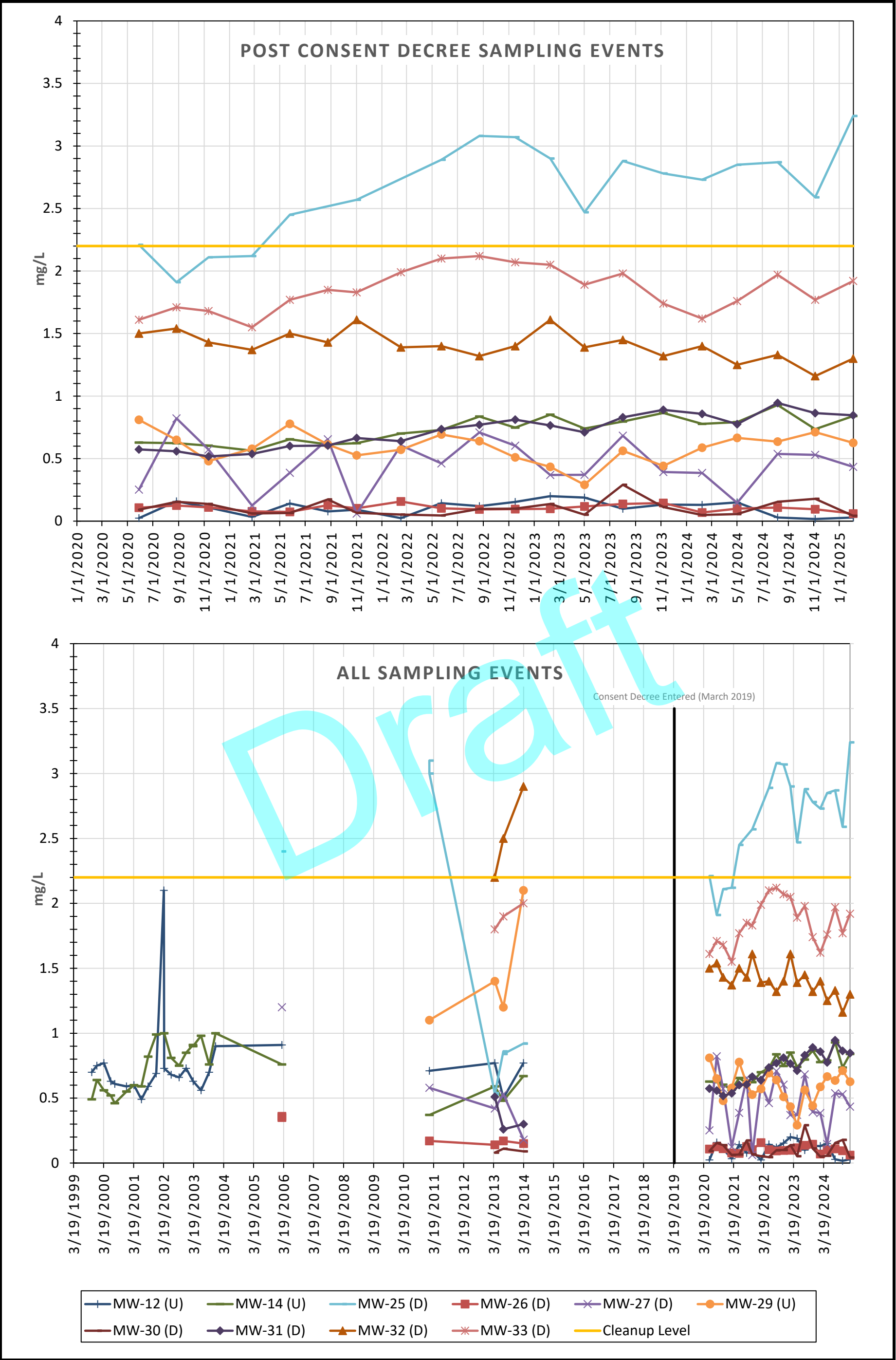
**Total Iron Concentrations
A-Zone CPOC Wells
South Park Landfill**



Parametrix

D = Downgradient
U = Upgradient

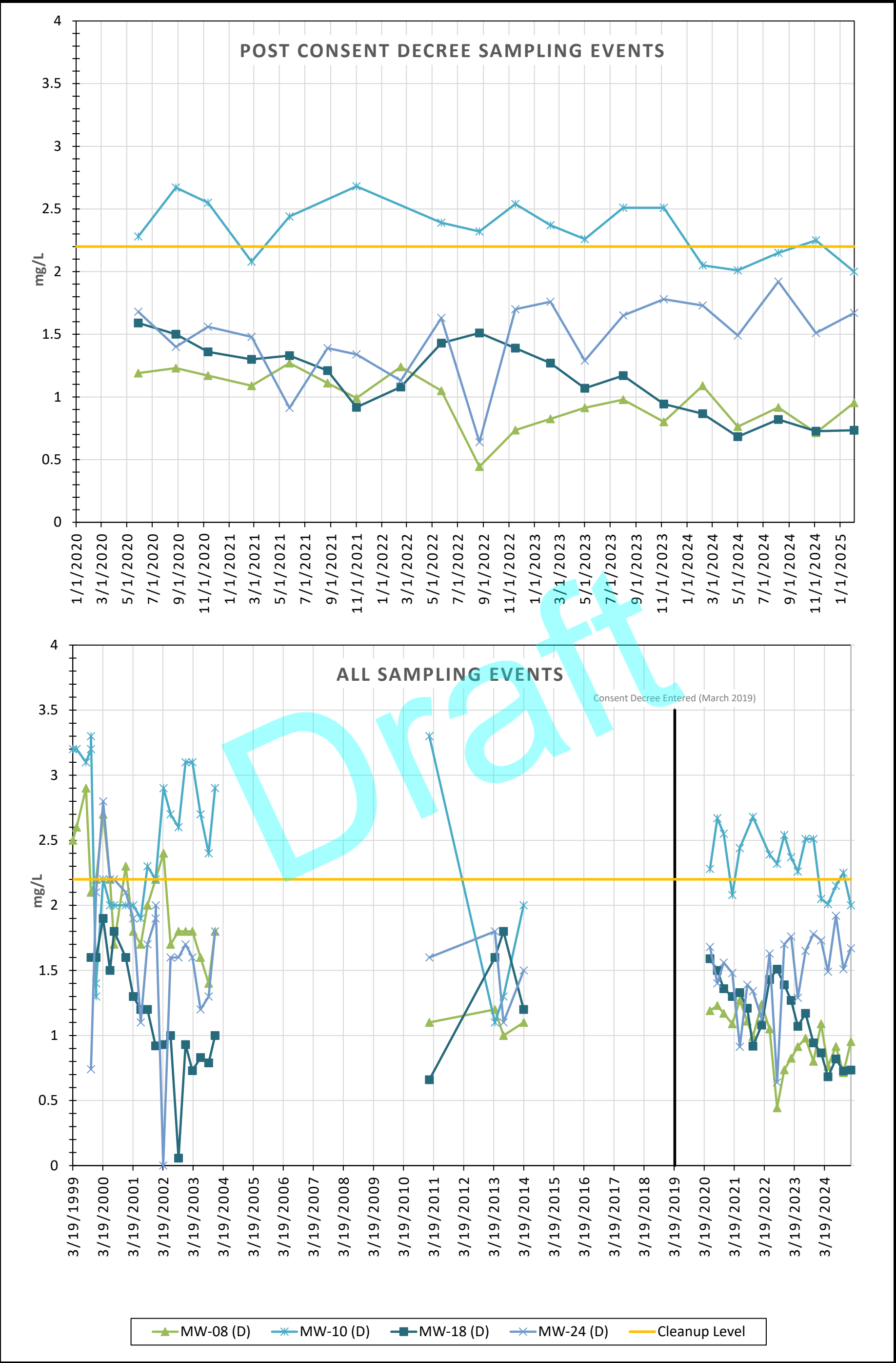
**Total Iron Concentrations
B-Zone CPOC Wells
South Park Landfill**

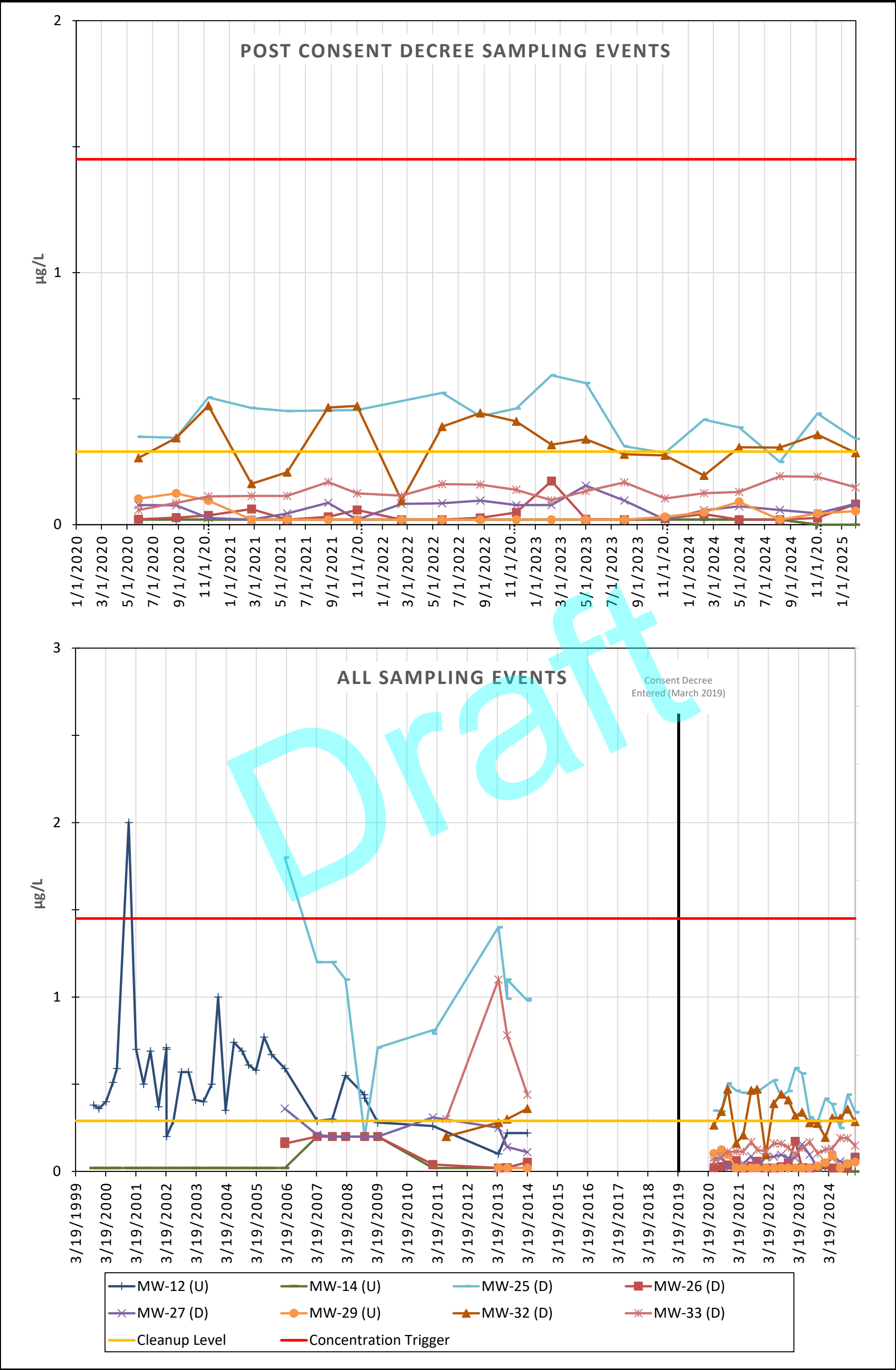


Parametrix

D = Downgradient
U = Upgradient

**Total Manganese Concentrations
A-Zone CPOC Wells
South Park Landfill**

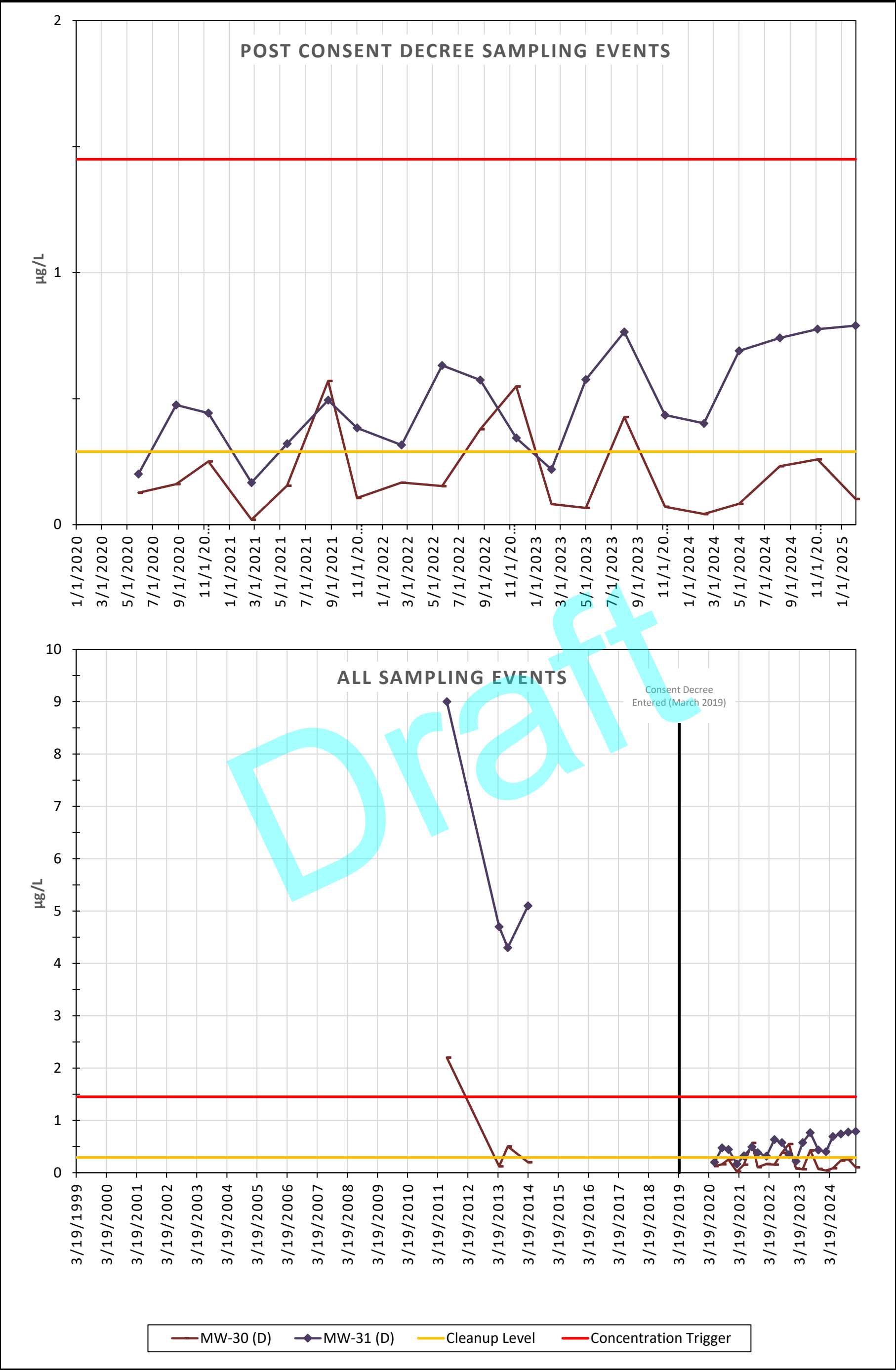


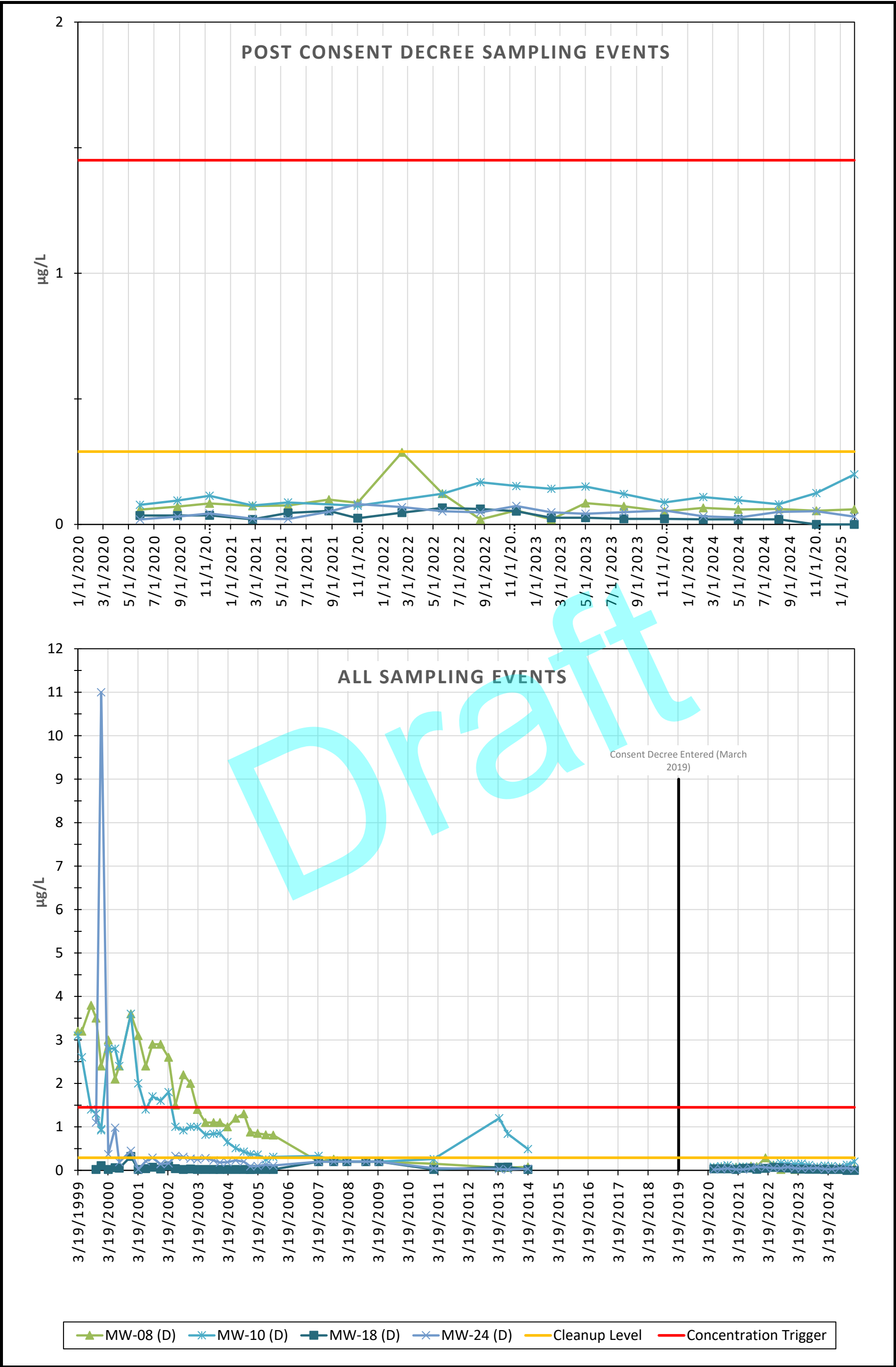


Parametrix

D = Downgradient
U = Upgradient

**Vinyl Chloride Concentrations
A-Zone CPOC Wells
South Park Landfill**

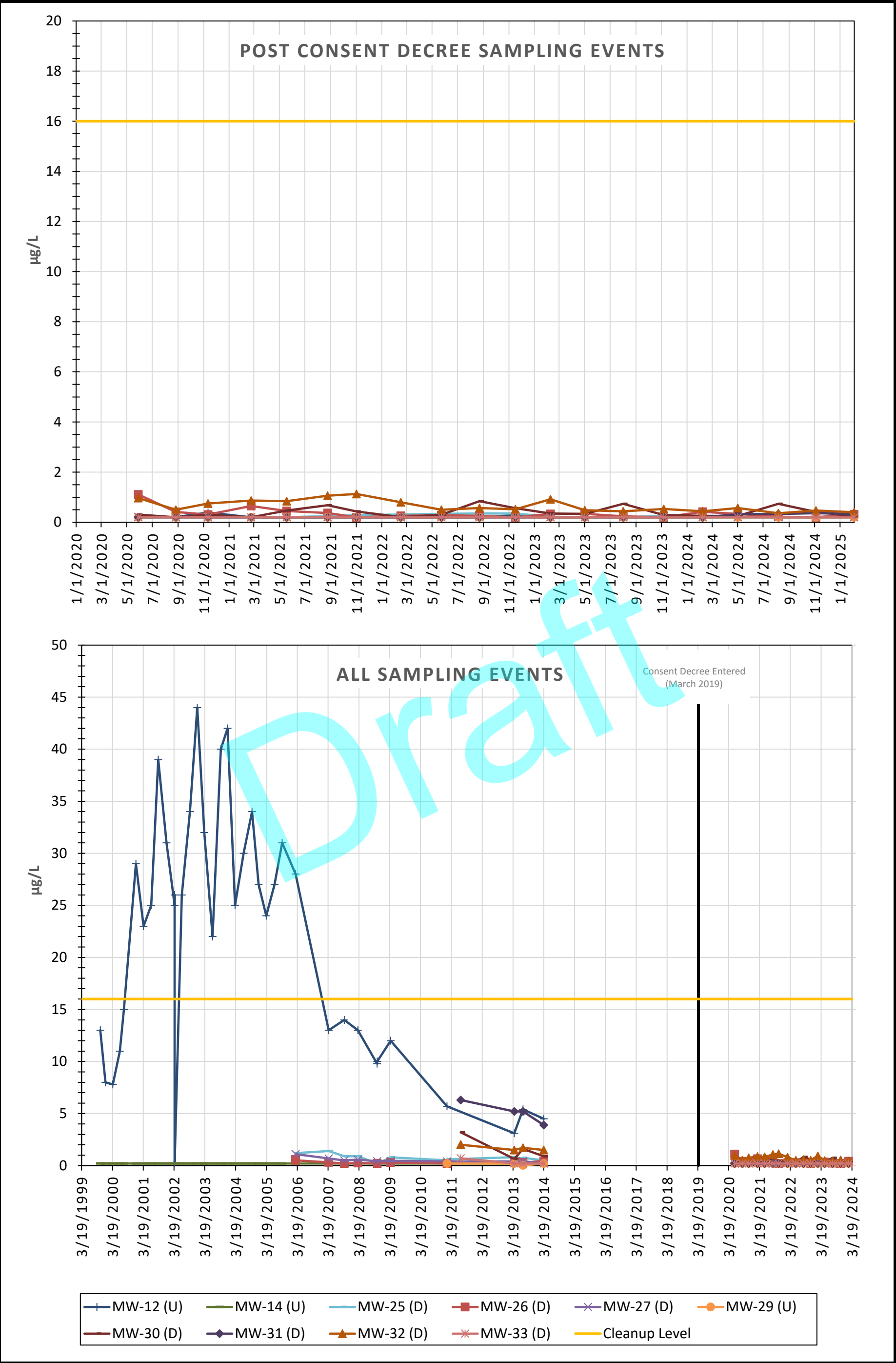




Parametrix

D = Downgradient
U = Upgradient

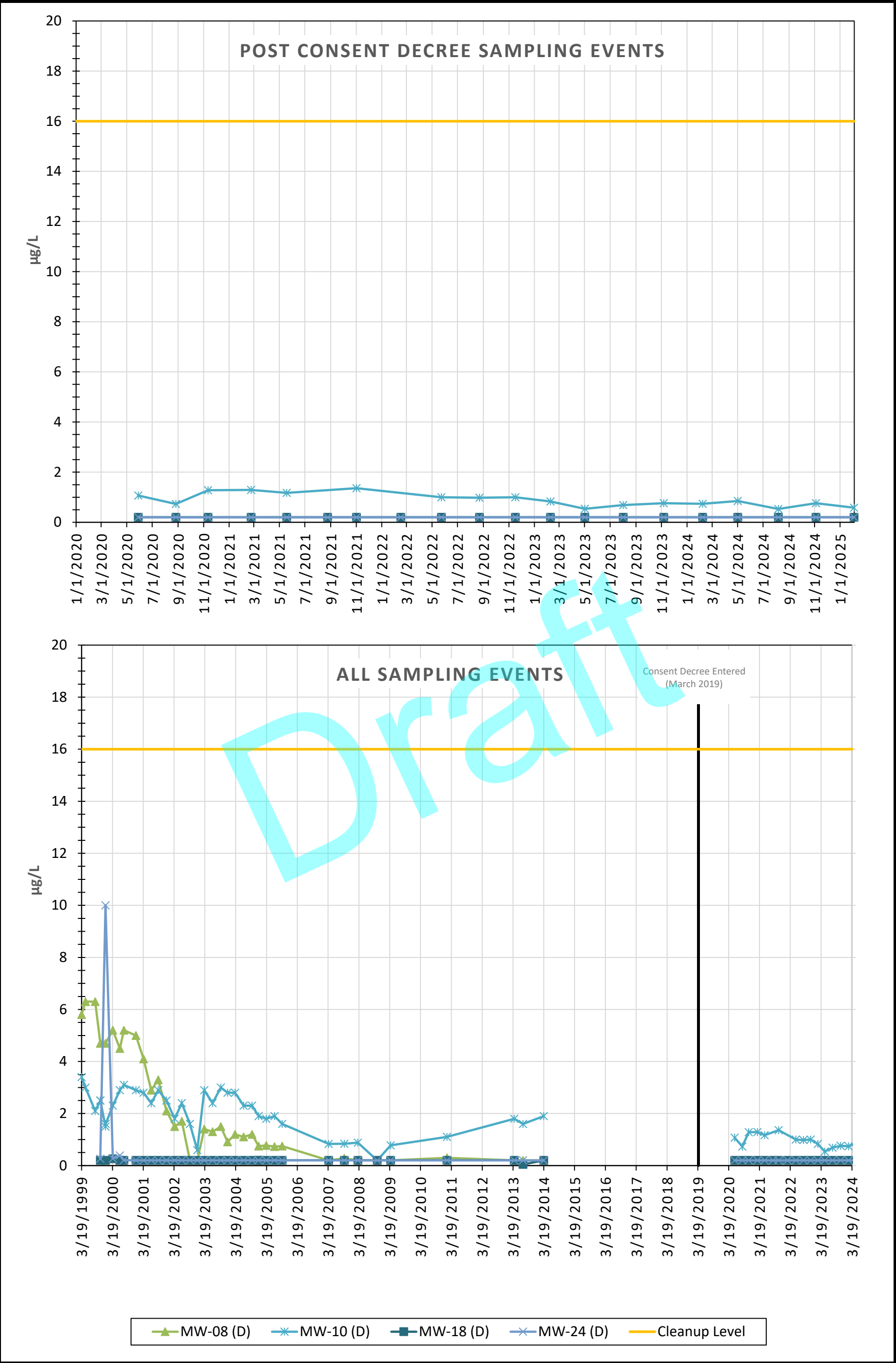
**Vinyl Chloride Concentrations
B-Zone CPOC Wells
South Park Landfill**



Parametrix

D = Downgradient
U = Upgradient

**Cis-1,2-Dichloroethene Concentrations
A-Zone CPOC Wells
South Park Landfill**



Parametrix

D = Downgradient
U = Upgradient

Cis-1,2-Dichloroethene Concentrations
B-Zone CPOC Wells
South Park Landfill

Attachment 4

First Quarter 2025

Groundwater Laboratory Data



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

08 April 2025

Min-Soon Yim
Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle, WA 98124-4018

RE: South Park Landfill -Parametrix Water (553-155-067)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
25B0077

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25B0077		Turn-around Requested: 2 weeks		Date: 2/4/2025		Analytical Resources, Incorporated Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)										
ARI Client Company: Min Soon Yim, Seattle Public Utility		Phone: 206 684-7693		Page: 2 of 2												
Client Contact: Laura Lee, Parametrix		Phone: 206 394-3665		No. of Coolers: 1 Cooler Temps: 52												
Client Project Name: SPU South Park Landfill																
Client Project #: 553-1550-067		Samplers: Chris Bourgeois (Parametrix)		Analysis Requested				Notes/Comments								
Sample ID	Date	Time	Matrix	Number of Containers	cis-1,2-DCE	Vinyl Chloride	Total Fe, Mn									
SPL-GW-MW25-0225			water	7	X	X	X									
SPL-GW-MW30-0225	2/4/25	1410	water	7	X	X	X									
SPL-GW-MW31-0225			water	7	X	X	X									
SPL-GW-MW24-0225	2/4/25	930	water	7	X	X	X									
SPL-GW-MW26-0225	2/4/25	1030	water	13	X	X	X									MS/MSD
SPL-GW-MW08-0225	2/3/25	1210	water	7	X	X	X									
SPL-GW-MW27-0225	2/3/25	1135	water	7	X	X	X									
SPL-GW-MW61-0225	2/4/25	1100	water	7	X	X	X									
SPL-GW-MW81-0225	2/4/25		water	2	X	X										
Comments/Special Instructions	Relinquished by: Chris Bourgeois		Received by: Tyler Steimel		Relinquished by: Tyler Steimel				Received by: Savannah Wright							
	(Signature)		(Signature)		(Signature)				(Signature)							
	Printed Name:		Printed Name:		Printed Name:				Printed Name:							
	Company:		Company:		Company:				Company:							
Date & Time:		Date & Time:		Date & Time:				Date & Time:								

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by work order or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25B0076		Turn-around Requested: 2 weeks		Date: 2/4/2025		Analytical Resources, Incorporated Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)								
ARI Client Company: Min Soon Yim, Seattle Public Utility		Phone: 206 684-7693		Page: 1 of 2										
Client Contact: Laura Lee		Phone: 206 394-3665		No. of Coolers: 1 Cooler Temps: 5.2										
Client Project Name: SPU South Park Landfill														
Samplers: Chris Bourgeois (Parametrix)														
Sample ID	Date	Time	Matrix	Number of Containers	cis-1,2-DCE	Vinyl Chloride	Total Fe, Mn	Analysis Requested						Notes/Comments
SPL-GW-MW12-0225	2/3/25	1345	water	7	X	X	X							
SPL-GW-MW14-0225	2/4/25	1220	water	7	X	X	X							
SPL-GW-MW29-0225			water	7	X	X	X							
SPL-GW-MW18-0225			water	7	X	X	X							
SPL-GW-MW32-0225			water	13	X	X	X							MS/MSD
SPL-GW-MW33-0225			water	7	X	X	X							
SPL-GW-MW10-0225			water	7	X	X	X							
SPL-GW-MW60-0225			water	7	X	X	X							
SPL-GW-MW80-0225	2/4/25		water	2	X	X								
Comments/Special Instructions		Relinquished by: <i>Chris Bourgeois</i>		Received by: <i>TL Steinel</i>		Relinquished by: <i>TL Steinel</i>		Received by: <i>SA Wright</i>						
		(Signature)		(Signature)		(Signature)		(Signature)						
		Printed Name:		Printed Name:		Printed Name:		Printed Name:						
		Company:		Company:		Company:		Company:						
Date & Time:		Date & Time:		Date & Time:		Date & Time:		Date & Time:						
		2/4/25 14:25		2/4/25 14:41		2-4-25 14:41								

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by work order or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



Seattle Public Utilities

700-5th Ave, Ste 4900, Box 34018

Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Project Manager: Min-Soon Yim

Reported:

08-Apr-2025 09:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW12-0225	25B0077-01	Water	03-Feb-2025 13:45	04-Feb-2025 14:41
SPL-GW-MW14-0225	25B0077-02	Water	04-Feb-2025 12:20	04-Feb-2025 14:41
SPL-GW-MW80-0225	25B0077-03	Water	04-Feb-2025 00:00	04-Feb-2025 14:41
SPL-GW-MW30-0225	25B0077-04	Water	04-Feb-2025 14:10	04-Feb-2025 14:41
SPL-GW-MW24-0225	25B0077-05	Water	04-Feb-2025 09:30	04-Feb-2025 14:41
SPL-GW-MW26-0225	25B0077-06	Water	04-Feb-2025 10:30	04-Feb-2025 14:41
SPL-GW-MW08-0225	25B0077-07	Water	03-Feb-2025 12:10	04-Feb-2025 14:41
SPL-GW-MW27-0225	25B0077-08	Water	03-Feb-2025 11:35	04-Feb-2025 14:41
SPL-GW-MW61-0225	25B0077-09	Water	04-Feb-2025 11:00	04-Feb-2025 14:41



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

Work Order Case Narrative

Client: Seattle Public Utilities
Project: South Park Landfill
Work Order: 25B0077

Sample receipt

Samples as listed on the preceding page were received February 4, 2025 under ARI work order 25B0077. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.



Seattle Public Utilities

700-5th Ave, Ste 4900, Box 34018

Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Project Manager: Min-Soon Yim

Reported:

08-Apr-2025 09:44

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



WORK ORDER

25B0077

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Seattle Public Utilities

Project Manager: Kelly Bottem

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Report To:

Seattle Public Utilities

Min-Soon Yim

700-5th Ave, Ste 4900, Box 34018

Seattle, WA 98124-4018

Phone: (206) 233-2629

Fax: -

Invoice To:

Seattle Public Utilities

Min-Soon Yim

700-5th Ave, Ste 4900, Box 34018

Seattle, WA 98124-4018

Phone : (206) 233-2629

Fax: -

Date Due: 18-Feb-2025 18:00 (10 day TAT)

Received By: Savannah Wright

Date Received: 04-Feb-2025 14:41

Logged In By: Robert Leesemann

Date Logged In: 05-Feb-2025 09:25

Samples Received at: 5.2°C

Intact, properly signed and dated custody seals attached to outside of cooler(s).....	No	Custody papers included with the cooler.....	Yes
Custody papers properly filled out (in, signed, analyses requested, etc).....	Yes	Was a temperature blank included in the cooler.....	No
Was sufficient ice used (if appropriate).....	Yes	All bottles sealed in individual plastic bags.....	No
All bottles arrived in good condition (unbroken).....	Yes	All bottle labels complete and legible.....	Yes
Number of containers listed on COC match number received.....	Yes	Bottle labels and tags agree with COC.....	Yes
Correct bottles used for the requested analyses.....	Yes	All VOC vials free of air bubbles.....	Yes
Analyses/bottles require preservation (attach preservation sheet excluding VOC).....	Yes	Sufficient amount of sample sent in each bottle.....	Yes
Sample split at ARI.....	No		



WORK ORDER

25B0077

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Seattle Public Utilities

Project Manager: Kelly Bottem

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25B0077-01 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass	
25B0077-01 B	VOA Vial, Clear, 40 mL, HCL		
25B0077-01 C	VOA Vial, Clear, 40 mL, HCL		
25B0077-01 D	VOA Vial, Clear, 40 mL, HCL		
25B0077-01 E	VOA Vial, Clear, 40 mL		
25B0077-01 F	VOA Vial, Clear, 40 mL		
25B0077-01 G	VOA Vial, Clear, 40 mL		
25B0077-02 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass	
25B0077-02 B	VOA Vial, Clear, 40 mL, HCL		
25B0077-02 C	VOA Vial, Clear, 40 mL, HCL		
25B0077-02 D	VOA Vial, Clear, 40 mL, HCL		
25B0077-02 E	VOA Vial, Clear, 40 mL		
25B0077-02 F	VOA Vial, Clear, 40 mL		
25B0077-02 G	VOA Vial, Clear, 40 mL		
25B0077-03 A	VOA Vial, Clear, 40 mL, HCL		
25B0077-03 B	VOA Vial, Clear, 40 mL		
25B0077-04 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass	
25B0077-04 B	VOA Vial, Clear, 40 mL, HCL		
25B0077-04 C	VOA Vial, Clear, 40 mL, HCL		
25B0077-04 D	VOA Vial, Clear, 40 mL, HCL		
25B0077-04 E	VOA Vial, Clear, 40 mL		
25B0077-04 F	VOA Vial, Clear, 40 mL		
25B0077-04 G	VOA Vial, Clear, 40 mL		
25B0077-05 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass	
25B0077-05 B	VOA Vial, Clear, 40 mL, HCL		
25B0077-05 C	VOA Vial, Clear, 40 mL, HCL		
25B0077-05 D	VOA Vial, Clear, 40 mL, HCL		
25B0077-05 E	VOA Vial, Clear, 40 mL		
25B0077-05 F	VOA Vial, Clear, 40 mL		
25B0077-05 G	VOA Vial, Clear, 40 mL		
25B0077-06 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass	
25B0077-06 B	VOA Vial, Clear, 40 mL, HCL		
25B0077-06 C	VOA Vial, Clear, 40 mL, HCL		
25B0077-06 D	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

25B0077

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Seattle Public Utilities

Project Manager: Kelly Bottem

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

25B0077-06 E	VOA Vial, Clear, 40 mL	
25B0077-06 F	VOA Vial, Clear, 40 mL	
25B0077-06 G	VOA Vial, Clear, 40 mL	
25B0077-06 H	VOA Vial, Clear, 40 mL, HCL	
25B0077-06 I	VOA Vial, Clear, 40 mL, HCL	
25B0077-06 J	VOA Vial, Clear, 40 mL, HCL	
25B0077-06 K	VOA Vial, Clear, 40 mL	
25B0077-06 L	VOA Vial, Clear, 40 mL	
25B0077-06 M	VOA Vial, Clear, 40 mL	
25B0077-07 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass
25B0077-07 B	VOA Vial, Clear, 40 mL, HCL	
25B0077-07 C	VOA Vial, Clear, 40 mL, HCL	
25B0077-07 D	VOA Vial, Clear, 40 mL, HCL	
25B0077-07 E	VOA Vial, Clear, 40 mL	
25B0077-07 F	VOA Vial, Clear, 40 mL	
25B0077-07 G	VOA Vial, Clear, 40 mL	
25B0077-08 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass
25B0077-08 B	VOA Vial, Clear, 40 mL, HCL	
25B0077-08 C	VOA Vial, Clear, 40 mL, HCL	
25B0077-08 D	VOA Vial, Clear, 40 mL, HCL	
25B0077-08 E	VOA Vial, Clear, 40 mL	
25B0077-08 F	VOA Vial, Clear, 40 mL	
25B0077-08 G	VOA Vial, Clear, 40 mL	
25B0077-09 A	HDPE NM, 500 mL, 1:1 HNO3	< 2 Pass
25B0077-09 B	VOA Vial, Clear, 40 mL, HCL	
25B0077-09 C	VOA Vial, Clear, 40 mL, HCL	
25B0077-09 D	VOA Vial, Clear, 40 mL, HCL	
25B0077-09 E	VOA Vial, Clear, 40 mL	
25B0077-09 F	VOA Vial, Clear, 40 mL	
25B0077-09 G	VOA Vial, Clear, 40 mL	

RL

Preservation Confirmed By

2/5/25

Date



Cooler Receipt Form

ARI Client: Seattle Public Utility

Project Name: SPU South Park Landfill

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 25B0076

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? _____

YES (NO)

Were custody papers included with the cooler? _____

(YES) NO

Were custody papers properly filled out (ink, signed, etc.) _____

(YES) NO

Temperature of Cooler(s) (°C) Time 14:41 5.2

Temp Gun ID#: 04

Was a temperature blank included in the cooler? _____

YES (NO)

Were coolers received between 0° - 6° (°C) _____

(YES) NO

Was sufficient ice used (if appropriate)? _____

NA (YES) NO

Cooler Accepted by: MW Date: 2-4-25 Time: 14:41

Complete custody forms and attach all shipping documents

Log-In Phase:

What kind of packing material was used? _____

Bubble Wrap Wet Ice Gel Packs Baggies Foam Block N/A Other: _____

Are any samples that were out of temperature compliance documented in LIMS? _____

YES (NO)

How were bottles sealed in plastic bags? _____

Individually Grouped Not

Did all bottles arrive in good condition (unbroken)? _____

(YES) NO

Were all bottle labels complete and legible? _____

(YES) NO

Did the number of containers listed on COC match with the number of containers received? _____

(YES) NO

Did all bottle labels and tags agree with custody papers? _____

(YES) NO

Were all bottles used correct for the requested analyses? _____

(YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...

NA (YES) NO

Were all VOC vials free of air bubbles? _____

NA (YES) NO

Was sufficient amount of sample sent in each bottle? _____

(YES) NO

Date VOC Trip Blank was made at ARI _____

(NA)

Were the sample(s) split by ARI? _____

(NA)

YES

Date/Time: _____

Equipment: _____

Split by: _____

Samples Logged by: RL Date: 2/5/25 Time: 0925 Labels checked by: RL

**** Notify Project Manager of discrepancies or concerns ****

Additional Notes, Discrepancies, & Resolutions:

By: _____

Date: _____



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW12-0225
25B0077-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/03/2025 13:45
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 12:11
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-01 C

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
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Reported:
08-Apr-2025 09:44

SPL-GW-MW12-0225
25B0077-01 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/03/2025 13:45

Instrument: ICPMS1 Analyst: HAL

Analyzed: 02/14/2025 20:21

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0077-01 A

Preparation Batch: BNB0159

Sample Size: 25 mL

Prepared: 02/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	ND	mg/L	U
Manganese	7439-96-5	10	0.0100	0.0292	mg/L	D



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW12-0225
25B0077-01RE1 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/03/2025 13:45
Instrument: NT16 Analyst: LN	Analyzed: 02/07/2025 16:05
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0133
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-01RE1 F

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	106	%	



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW14-0225
25B0077-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 12:20
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 12:33
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-02 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	109	%	



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW14-0225
25B0077-02 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 12:20
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 11:19
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-02 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW14-0225
25B0077-02 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/04/2025 12:20
Instrument: ICPMS2 Analyst: MCB	Analyzed: 02/12/2025 20:23
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0159
	Prepared: 02/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0077-02 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	3.13	mg/L	D
Manganese	7439-96-5	10	0.0100	0.840	mg/L	D



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW80-0225
25B0077-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 00:00
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 12:55
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-03 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	101	%	



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW80-0225
25B0077-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 00:00
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 11:39
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-03 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	



Seattle Public Utilities
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Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW30-0225
25B0077-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 14:10
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 13:17
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-04 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.24	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW30-0225
25B0077-04 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 14:10
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 12:00
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-04 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.102	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	104	%	



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Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW30-0225
25B0077-04 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/04/2025 14:10
Instrument: ICPMS2 Analyst: MCB	Analyzed: 02/12/2025 21:11
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0159
	Prepared: 02/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0077-04 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	0.948	mg/L	D
Manganese	7439-96-5	5	0.00500	0.0425	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW24-0225
25B0077-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 09:30
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 13:39
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-05 C

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	112	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW24-0225
25B0077-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 09:30
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 12:21
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-05 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0313	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	104	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW24-0225
25B0077-05 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/04/2025 09:30
Instrument: ICPMS2 Analyst: MCB	Analyzed: 02/12/2025 20:57
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0159
	Prepared: 02/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0077-05 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	26.6	mg/L	D
Manganese	7439-96-5	50	0.0500	1.67	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW26-0225
25B0077-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 10:30
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 14:01
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-06 H

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.32	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	102	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW26-0225
25B0077-06 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 10:30
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 12:41
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-06 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0819	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	106	%	



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Reported:
08-Apr-2025 09:44

SPL-GW-MW26-0225
25B0077-06 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/04/2025 10:30
Instrument: ICPMS2 Analyst: MCB	Analyzed: 02/12/2025 20:30
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0159
	Prepared: 02/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0077-06 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	4.26	mg/L	D
Manganese	7439-96-5	10	0.0100	0.0605	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
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Reported:
08-Apr-2025 09:44

SPL-GW-MW08-0225
25B0077-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/03/2025 12:10
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 14:23
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-07 D

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	112	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW08-0225
25B0077-07 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/03/2025 12:10
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 13:02
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-07 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0603	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	105	%	



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Reported:
08-Apr-2025 09:44

SPL-GW-MW08-0225
25B0077-07 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/03/2025 12:10
Instrument: ICPMS2 Analyst: MCB	Analyzed: 02/12/2025 21:04
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0159
	Prepared: 02/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0077-07 A 01

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	14.4	mg/L	D
Manganese	7439-96-5	20	0.0200	0.953	mg/L	D



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Reported:
08-Apr-2025 09:44

SPL-GW-MW27-0225
25B0077-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 02/03/2025 11:35

Instrument: NT3 Analyst: PKC

Analyzed: 02/07/2025 14:46

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0077-08 C

Preparation Batch: BNB0131

Sample Size: 10 mL

Prepared: 02/07/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.21	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	112	%	



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Reported:
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SPL-GW-MW27-0225
25B0077-08 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 02/03/2025 11:35

Instrument: NT16 Analyst: LN

Analyzed: 02/06/2025 13:22

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0077-08 E

Preparation Batch: BNB0094

Sample Size: 10 mL

Prepared: 02/06/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0827	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	105	%	



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Reported:
08-Apr-2025 09:44

SPL-GW-MW27-0225
25B0077-08 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/03/2025 11:35

Instrument: ICPMS2 Analyst: MCB

Analyzed: 02/12/2025 20:26

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0077-08 A 01

Preparation Batch: BNB0159

Sample Size: 25 mL

Prepared: 02/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	13.0	mg/L	D
Manganese	7439-96-5	10	0.0100	0.434	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

SPL-GW-MW61-0225
25B0077-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 11:00
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 15:08
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0077-09 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.28	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	110	%	



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Reported:
08-Apr-2025 09:44

SPL-GW-MW61-0225
25B0077-09 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 02/04/2025 11:00

Instrument: NT16 Analyst: LN

Analyzed: 02/06/2025 13:43

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0077-09 E

Preparation Batch: BNB0094

Sample Size: 10 mL

Prepared: 02/06/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0942	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	105	%	



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Reported:
08-Apr-2025 09:44

SPL-GW-MW61-0225
25B0077-09 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/04/2025 11:00

Instrument: ICPMS2 Analyst: MCB

Analyzed: 02/12/2025 21:01

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0077-09 A 01

Preparation Batch: BNB0159

Sample Size: 25 mL

Prepared: 02/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	4.73	mg/L	D
Manganese	7439-96-5	50	0.0500	0.0690	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BNB0131 - EPA 8260D in Water

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0131-BLK1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 11:48								
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.97		ug/L	5.00		99.5	80-129			
LCS (BNB0131-BS1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 10:42								
cis-1,2-Dichloroethene	11.6	0.20	ug/L	10.0		116	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.84		ug/L	5.00		96.9	80-129			
LCS Dup (BNB0131-BSD1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 11:04								
cis-1,2-Dichloroethene	12.1	0.20	ug/L	10.0		121	80-121	3.92	30	
Surrogate: 1,2-Dichloroethane-d4	5.14		ug/L	5.00		103	80-129			
Matrix Spike (BNB0131-MS1)		Source: 25B0077-06		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 18:49						
cis-1,2-Dichloroethene	10.5	0.20	ug/L	10.0	0.32	102	80-121			
Surrogate: 1,2-Dichloroethane-d4	5.35		ug/L	5.00	5.10	107	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BNB0131-MSD1)		Source: 25B0077-06		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 19:11						
cis-1,2-Dichloroethene	10.2	0.20	ug/L	10.0	0.32	99.2	80-121	2.84	30	
Surrogate: 1,2-Dichloroethane-d4	5.50		ug/L	5.00	5.10	110	80-129			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BNB0094 - EPA 8260D-SIM in Water

Instrument: NT16 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0094-BLK1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 10:35										
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5120		ug/L	5000		102	80-129			
LCS (BNB0094-BS1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 09:33										
Vinyl chloride	2.12	0.0200	ug/L	2.00		106	62-141			
Surrogate: 1,2-Dichloroethane-d4	5310		ug/L	5000		106	80-129			
LCS Dup (BNB0094-BSD1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 09:53										
Vinyl chloride	2.18	0.0200	ug/L	2.00		109	62-141	2.88	30	
Surrogate: 1,2-Dichloroethane-d4	5270		ug/L	5000		105	80-129			
Matrix Spike (BNB0094-MS1) Source: 25B0077-06 Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 17:10										
Vinyl chloride	2.09	0.0200	ug/L	2.00	0.0819	101	62-141			
Surrogate: 1,2-Dichloroethane-d4	5550		ug/L	5000	5290	111	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BNB0094-MSD1) Source: 25B0077-06 Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 17:30										
Vinyl chloride	2.06	0.0200	ug/L	2.00	0.0819	98.8	62-141	1.74	30	
Surrogate: 1,2-Dichloroethane-d4	5550		ug/L	5000	5290	111	80-129			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BNB0133 - EPA 8260D-SIM in Water

Instrument: NT16 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0133-BLK1) Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 10:51									
Vinyl chloride	ND	0.0200	ug/L						U
Surrogate: 1,2-Dichloroethane-d4	5250		ug/L	5000		105 80-129			
LCS (BNB0133-BS1) Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 09:50									
Vinyl chloride	1.93	0.0200	ug/L	2.00		96.3 62-141			
Surrogate: 1,2-Dichloroethane-d4	5350		ug/L	5000		107 80-129			
LCS Dup (BNB0133-BSD1) Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 10:10									
Vinyl chloride	1.95	0.0200	ug/L	2.00		97.7 62-141	1.37	30	
Surrogate: 1,2-Dichloroethane-d4	5420		ug/L	5000		108 80-129			



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:44

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BNB0159 - EPA 6020B in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0159-BLK1)			Prepared: 09-Feb-2025 Analyzed: 10-Feb-2025 20:19								
Manganese	55	ND	0.00100	mg/L							U

LCS (BNB0159-BS1)			Prepared: 09-Feb-2025 Analyzed: 10-Feb-2025 20:23								
Manganese	55	0.0406	0.00100	mg/L	0.0250		162	80-120			

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0159-BLK2)			Prepared: 09-Feb-2025 Analyzed: 12-Feb-2025 16:52								
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U

LCS (BNB0159-BS2)			Prepared: 09-Feb-2025 Analyzed: 12-Feb-2025 16:55								
Iron	54	5.27	0.0360	mg/L	5.00		105	80-120			
Manganese	55	0.0261	0.00100	mg/L	0.0250		104	80-120			

Duplicate (BNB0159-DUP1)			Source: 25B0077-06		Prepared: 09-Feb-2025 Analyzed: 12-Feb-2025 20:33						
Manganese	55	0.0640	0.0100	mg/L		0.0605			5.72	20	D

Matrix Spike (BNB0159-MS1)			Source: 25B0077-06		Prepared: 09-Feb-2025 Analyzed: 12-Feb-2025 20:37						
Manganese	55	0.0871	0.0100	mg/L	0.0250	0.0605	107	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BNB0159-MSD1)			Source: 25B0077-06		Prepared: 09-Feb-2025 Analyzed: 12-Feb-2025 20:40						
Manganese	55	0.0810	0.0100	mg/L	0.0250	0.0605	82.2	75-125	7.24	20	D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



Seattle Public Utilities

700-5th Ave, Ste 4900, Box 34018

Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Project Manager: Min-Soon Yim

Reported:

08-Apr-2025 09:44

Uncertified Analytes included in this Report

Analysis Matrix & Analyte

None

Certified Analyses included in this Report

Analysis Matrix & Analyte

Certification Codes

EPA 6020B in Water

Iron-54 NELAP,DoD-ELAP,WADOE

Manganese-55 NELAP,DoD-ELAP,WADOE

EPA 8260D in Water

cis-1,2-Dichloroethene ADEC,NELAP,WADOE,DoD-ELAP

EPA 8260D-SIM in Water

Vinyl chloride NELAP,WADOE

Certifications

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025
WA-DW	Ecology - Drinking Water	C558	06/30/2025



Seattle Public Utilities

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Project Manager: Min-Soon Yim

Reported:

08-Apr-2025 09:44

Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to $\pm$ RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.
!	Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.
#	Indicates that ARL is NOT ACCREDITED for this parameter in samples logged as 'Drinking Water'



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

08 April 2025

Min-Soon Yim
Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle, WA 98124-4018

RE: South Park Landfill -Parametrix Water (553-155-067)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
25B0085

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25B0085		Turn-around Requested: 2 weeks		Date: 2/5/2025		Analytical Resources, Incorporated Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)			
ARI Client Company: Min Soon Yim, Seattle Phone: 206 684-7693		Public Utility		Page: 1 of 2					
Client Contact: Laura Lee Phone: 206 394-3665		No. of Coolers: 1 Cooler Temps: 23°							
Client Project Name: SPU South Park Landfill				Analysis Requested				Notes/Comments	
Samplers: Chris Bourgeois (Parametrix)									
Sample ID	Date	Time	Matrix	Number of Containers	cis-1,2-DCE	Vinyl Chloride	Total Fe, Mn		
SPL-GW-MW12-0225			water	7	X	X	X		
SPL-GW-MW14-0225			water	7	X	X	X		
SPL-GW-MW29-0225	2/5/25	1405	water	7	X	X	X		
SPL-GW-MW18-0225	2/5/25	1055	water	7	X	X	X		
SPL-GW-MW32-0225	2/5/25	900	water	13	X	X	X		MS/MSD
SPL-GW-MW33-0225	2/5/25	1000	water	7	X	X	X		
SPL-GW-MW10-0225	2/5/25	1210	water	7	X	X	X		
SPL-GW-MW60-0225	2/5/25	930	water	7	X	X	X		
SPL-GW-MW80-0225			water	2	X	X			
Comments/Special Instructions	Relinquished by: Chris Bourgeois (Signature) <i>Chris</i>		Received by: Duncan Favill (Signature) <i>Duncan</i>		Relinquished by: Duncan Favill (Signature) <i>Duncan</i>		Received by: Matthew Demery (Signature) <i>Matthew</i>		
	Printed Name: Chris Bourgeois		Printed Name: Duncan Favill		Printed Name: Duncan Favill		Printed Name: Matthew Demery		
	Company: Parametrix		Company: SPU		Company: SPU		Company: ARCC		
	Date & Time: 2/5/25 1410		Date & Time: 2/5/25 1410		Date & Time: 2/5/25 1433		Date & Time: 02/05/25 1433		

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by work order or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25B0085		Turn-around Requested: 2 weeks		Date: 2/5/25	
ARI Client Company: Min Soon Yim, Seattle Public Utility		Phone: 206 684-7693		Page: 2 of 2	
Client Contact: Laura Lee, Parametrix		Phone: 206 394-3665		No. of Coolers: 1 Cooler Temps: 2.35	
Client Project Name: SPU South Park Landfill				Analysis Requested	
Client Project #: 553-1550-067		Samplers: Chris Bourgeois (Parametrix)		Notes/Comments	

Sample ID	Date	Time	Matrix	Number of Containers	cis-1,2-DCE	Vinyl Chloride	Total Fe, Mn									
SPL-GW-MW25-0225	2/5/25	1255	water	7	X	X	X									
SPL-GW-MW30-0225			water	7	X	X	X									
SPL-GW-MW31-0225	2/4/25	1510	water	7	X	X	X									
SPL-GW-MW24-0225			water	7	X	X	X									
SPL-GW-MW26-0225			water	13	X	X	X									MS/MSD
SPL-GW-MW08-0225			water	7	X	X	X									
SPL-GW-MW27-0225			water	7	X	X	X									
SPL-GW-MW61-0225			water	7	X	X	X									
SPL-GW-MW81-0225	2/5/25	—	water	2	X	X										

Comments/Special Instructions	Relinquished by: (Signature) Chris	Received by: (Signature) Duncan Favill	Relinquished by: (Signature) Duncan Favill	Received by: (Signature) Matthew Denner
	Printed Name: Chris Bourgeois	Printed Name: Duncan Favill	Printed Name: Duncan Favill	Printed Name: Matthew Denner
	Company: Parametrix	Company: SPU	Company: SPU	Company: ARI
	Date & Time: 2/5/25 1410	Date & Time: 2/5/25 1410	Date & Time: 2/5/25 1433	Date & Time: 02/05/25 1433

Analytical Resources, Incorporated
 Analytical Chemists and Consultants
 4611 South 134th Place, Suite 100
 Tukwila, WA 98168
 206-695-6200 206-695-6201 (fax)

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: Unless specified by work order or contract, all water/soil samples submitted to ARI will be discarded or returned, no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer. Sediment samples submitted under PSDDA/PSEP/SMS protocol will be stored frozen for up to one year and then discarded.



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW29-0225	25B0085-01	Water	05-Feb-2025 14:05	05-Feb-2025 14:33
SPL-GW-MW18-0225	25B0085-02	Water	05-Feb-2025 10:55	05-Feb-2025 14:33
SPL-GW-MW32-0225	25B0085-03	Water	05-Feb-2025 09:00	05-Feb-2025 14:33
SPL-GW-MW33-0225	25B0085-04	Water	05-Feb-2025 10:00	05-Feb-2025 14:33
SPL-GW-MW10-0225	25B0085-05	Water	05-Feb-2025 12:10	05-Feb-2025 14:33
SPL-GW-MW60-0225	25B0085-06	Water	05-Feb-2025 09:30	05-Feb-2025 14:33
SPL-GW-MW25-0225	25B0085-07	Water	05-Feb-2025 12:55	05-Feb-2025 14:33
SPL-GW-MW31-0225	25B0085-08	Water	04-Feb-2025 15:10	05-Feb-2025 14:33
SPL-GW-MW81-0225	25B0085-09	Water	04-Feb-2025 15:10	05-Feb-2025 14:33



Seattle Public Utilities
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Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

Work Order Case Narrative

Client: Seattle Public Utilities
Project: South Park Landfill
Work Order: 25B0085

Sample receipt

Samples as listed on the preceding page were received February 5, 2025 under ARI work order 25B0085. For details regarding sample receipt, please refer to the Cooler Receipt Form.

Volatiles - EPA Method SW8260D

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.

The matrix spike/matrix spike duplicate (MS/MSD) spike recoveries and relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms.

Volatiles - EPA Method 8260D-SIM (Selected Ion Monitoring)

The sample(s) were analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

Internal standard areas were within limits.

The surrogate percent recoveries were within control limits.

The method blank(s) were clean at the reporting limits.

The blank spike and blank spike duplicate (BS/LCS and BSD/LCSD) spike recoveries and relative percent difference (RPD) were within control limits.



Seattle Public Utilities

700-5th Ave, Ste 4900, Box 34018

Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Project Manager: Min-Soon Yim

Reported:

08-Apr-2025 09:48

The matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD) were within advisory control limits.

Total Metals - EPA Method 6020B

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits with the exception of analytes flagged on the associated forms.

Cooler Receipt Form

ARI Client: SPU / Parametrix

Project Name: South Park Landfill

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 25 B0085

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES (YES) NO (NO)
 Were custody papers included with the cooler? YES (YES) NO (NO)
 Were custody papers properly filled out (ink, signed, etc.) YES (YES) NO (NO)
 Temperature of Cooler(s) (°C) Time 1433 2300 Temp Gun ID#: 5009708
 Was a temperature blank included in the cooler? YES (YES) NO (NO)
 Were coolers received between 0° - 6° (°C) YES (YES) NO (NO)
 Was sufficient ice used (if appropriate)? NA (YES) NO (NO)

Cooler Accepted by: mm Date: 04/05/25 Time: 1433

Complete custody forms and attach all shipping documents

Log-In Phase:

What kind of packing material was used? Bubble Wrap (Wet Ice) Gel Packs (Baggies) Foam Block N/A Other: _____
 Are any samples that were out of temperature compliance documented in LIMS? YES (YES) NO (NO)
 How were bottles sealed in plastic bags? Individually (Grouped) Not (Not)
 Did all bottles arrive in good condition (unbroken)? YES (YES) NO (NO)
 Were all bottle labels complete and legible? YES (YES) NO (NO)
 Did the number of containers listed on COC match with the number of containers received? YES (YES) NO (NO)
 Did all bottle labels and tags agree with custody papers? YES (YES) NO (NO)
 Were all bottles used correct for the requested analyses? YES (YES) NO (NO)
 Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA (YES) NO (NO)
 Were all VOC vials free of air bubbles? NA (YES) NO (NO)
 Was sufficient amount of sample sent in each bottle? YES (YES) NO (NO)
 Date VOC Trip Blank was made at ARI: _____ (NA) _____
 Were the sample(s) split by ARI? (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: SA Date: 2/5/25 Time: 1615 Labels checked by: SA

**** Notify Project Manager of discrepancies or concerns ****

Additional Notes, Discrepancies, & Resolutions:

By: _____ Date: _____



WORK ORDER

25B0085

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Seattle Public Utilities

Project Manager: Kelly Bottem

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25B0085-01 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>L2p</u>	
25B0085-01 B	VOA Vial, Clear, 40 mL		
25B0085-01 C	VOA Vial, Clear, 40 mL		
25B0085-01 D	VOA Vial, Clear, 40 mL		
25B0085-01 E	VOA Vial, Clear, 40 mL, HCL		
25B0085-01 F	VOA Vial, Clear, 40 mL, HCL		
25B0085-01 G	VOA Vial, Clear, 40 mL, HCL		
25B0085-02 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>L2p</u>	
25B0085-02 B	VOA Vial, Clear, 40 mL		
25B0085-02 C	VOA Vial, Clear, 40 mL		
25B0085-02 D	VOA Vial, Clear, 40 mL		
25B0085-02 E	VOA Vial, Clear, 40 mL, HCL		
25B0085-02 F	VOA Vial, Clear, 40 mL, HCL		
25B0085-02 G	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>L2p</u>	
25B0085-03 B	VOA Vial, Clear, 40 mL		
25B0085-03 C	VOA Vial, Clear, 40 mL		
25B0085-03 D	VOA Vial, Clear, 40 mL		
25B0085-03 E	VOA Vial, Clear, 40 mL		
25B0085-03 F	VOA Vial, Clear, 40 mL		
25B0085-03 G	VOA Vial, Clear, 40 mL		
25B0085-03 H	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 I	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 J	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 K	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 L	VOA Vial, Clear, 40 mL, HCL		
25B0085-03 M	VOA Vial, Clear, 40 mL, HCL		
25B0085-04 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>L2p</u>	
25B0085-04 B	VOA Vial, Clear, 40 mL		
25B0085-04 C	VOA Vial, Clear, 40 mL		
25B0085-04 D	VOA Vial, Clear, 40 mL		
25B0085-04 E	VOA Vial, Clear, 40 mL, HCL		
25B0085-04 F	VOA Vial, Clear, 40 mL, HCL		
25B0085-04 G	VOA Vial, Clear, 40 mL, HCL		



WORK ORDER

25B0085

Samples will be discarded 90 days after submission of a final report unless other instructions are received

Client: Seattle Public Utilities

Project Manager: Kelly Bottem

Project: South Park Landfill -Parametrix Water

Project Number: 553-155-067

25B0085-05 A HDPE NM, 500 mL, 1:1 HNO₃

L2p

25B0085-05 B VOA Vial, Clear, 40 mL

25B0085-05 C VOA Vial, Clear, 40 mL

25B0085-05 D VOA Vial, Clear, 40 mL

25B0085-05 E VOA Vial, Clear, 40 mL, HCL

25B0085-05 F VOA Vial, Clear, 40 mL, HCL

25B0085-05 G VOA Vial, Clear, 40 mL, HCL

25B0085-06 A HDPE NM, 500 mL, 1:1 HNO₃

L2p

25B0085-06 B VOA Vial, Clear, 40 mL

25B0085-06 C VOA Vial, Clear, 40 mL

25B0085-06 D VOA Vial, Clear, 40 mL

25B0085-06 E VOA Vial, Clear, 40 mL, HCL

25B0085-06 F VOA Vial, Clear, 40 mL, HCL

25B0085-06 G VOA Vial, Clear, 40 mL, HCL

25B0085-07 A HDPE NM, 500 mL, 1:1 HNO₃

L2p

25B0085-07 B VOA Vial, Clear, 40 mL

25B0085-07 C VOA Vial, Clear, 40 mL

25B0085-07 D VOA Vial, Clear, 40 mL

25B0085-07 E VOA Vial, Clear, 40 mL, HCL

25B0085-07 F VOA Vial, Clear, 40 mL, HCL

25B0085-07 G VOA Vial, Clear, 40 mL, HCL

25B0085-08 A HDPE NM, 500 mL, 1:1 HNO₃

L2p

25B0085-08 B VOA Vial, Clear, 40 mL

25B0085-08 C VOA Vial, Clear, 40 mL

25B0085-08 D VOA Vial, Clear, 40 mL

25B0085-08 E VOA Vial, Clear, 40 mL, HCL

25B0085-08 F VOA Vial, Clear, 40 mL, HCL

25B0085-08 G VOA Vial, Clear, 40 mL, HCL

25B0085-09 A VOA Vial, Clear, 40 mL

25B0085-09 B VOA Vial, Clear, 40 mL, HCL

SA

Preservation Confirmed By

2/5/25

Date



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW29-0225
25B0085-01 (Water)

Volatile Organic Compounds

Method: EPA 8260D

Sampled: 02/05/2025 14:05

Instrument: NT3 Analyst: PKC

Analyzed: 02/07/2025 15:30

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0085-01 E

Preparation Batch: BNB0131

Sample Size: 10 mL

Prepared: 02/07/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	112	%	



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
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Reported:
08-Apr-2025 09:48

SPL-GW-MW29-0225
25B0085-01 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 14:05
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 14:04
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-01 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0537	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	106	%	



Seattle Public Utilities
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Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW29-0225
25B0085-01 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/05/2025 14:05
Instrument: ICPMS1 Analyst: HAL	Analyzed: 02/17/2025 22:32
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0295
	Prepared: 02/15/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0085-01 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	20.2	mg/L	D
Manganese	7439-96-5	20	0.0200	0.626	mg/L	D



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW18-0225
25B0085-02 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 10:55
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 15:52
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-02 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	108	%	



Seattle Public Utilities
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Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW18-0225
25B0085-02 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 10:55
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 14:24
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-02 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	106	%	



Seattle Public Utilities
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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW18-0225
25B0085-02 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/05/2025 10:55

Instrument: ICPMS1 Analyst: HAL

Analyzed: 02/17/2025 23:30

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0085-02 A

Preparation Batch: BNB0295

Sample Size: 25 mL

Prepared: 02/15/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	12.9	mg/L	D
Manganese	7439-96-5	20	0.0200	0.734	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW32-0225
25B0085-03 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 09:00
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 16:14
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-03 J

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.40	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	113	%	



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Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW32-0225
25B0085-03 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 09:00
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 14:45
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-03 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.285	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW32-0225
25B0085-03 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/05/2025 09:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 02/17/2025 22:37
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0295
	Prepared: 02/15/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0085-03 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	14.3	mg/L	D
Manganese	7439-96-5	20	0.0200	1.30	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW33-0225
25B0085-04 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 10:00
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 16:36
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-04 G

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	114	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW33-0225
25B0085-04 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 10:00
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 15:06
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-04 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.148	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW33-0225
25B0085-04 (Water)

Metals and Metallic Compounds

Method: EPA 6020B	Sampled: 02/05/2025 10:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 02/17/2025 23:34
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BNB0295
	Prepared: 02/15/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25B0085-04 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	18.6	mg/L	D
Manganese	7439-96-5	50	0.0500	1.92	mg/L	D



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Project Number: 553-155-067
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Reported:
08-Apr-2025 09:48

SPL-GW-MW10-0225
25B0085-05 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 12:10
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 16:58
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-05 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.58	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW10-0225
25B0085-05 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 12:10
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 15:26
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-05 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.199	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW10-0225
25B0085-05 (Water)

Metals and Metallic Compounds

Method: EPA 6020B
Instrument: ICPMS1 Analyst: HAL

Sampled: 02/05/2025 12:10

Analyzed: 02/17/2025 23:39

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BNB0295 Sample Size: 25 mL
Prepared: 02/15/2025 Final Volume: 25 mL Extract ID: 25B0085-05 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	34.4	mg/L	D
Manganese	7439-96-5	50	0.0500	2.00	mg/L	D



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Reported:
08-Apr-2025 09:48

SPL-GW-MW60-0225
25B0085-06 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 09:30
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 17:21
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-06 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.43	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	110	%	



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Project Number: 553-155-067
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Reported:
08-Apr-2025 09:48

SPL-GW-MW60-0225
25B0085-06 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/05/2025 09:30
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 15:47
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-06 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.305	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	108	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW60-0225
25B0085-06 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/05/2025 09:30

Instrument: ICPMS1 Analyst: HAL

Analyzed: 02/17/2025 23:43

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0085-06 A

Preparation Batch: BNB0295

Sample Size: 25 mL

Prepared: 02/15/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	13.1	mg/L	D
Manganese	7439-96-5	10	0.0100	1.23	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
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Reported:
08-Apr-2025 09:48

SPL-GW-MW25-0225
25B0085-07 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/05/2025 12:55
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 17:43
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-07 F

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	114	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW25-0225
25B0085-07 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 02/05/2025 12:55

Instrument: NT16 Analyst: LN

Analyzed: 02/06/2025 16:08

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0085-07 B

Preparation Batch: BNB0094

Sample Size: 10 mL

Prepared: 02/06/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.340	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
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Reported:
08-Apr-2025 09:48

SPL-GW-MW25-0225
25B0085-07 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/05/2025 12:55

Instrument: ICPMS1 Analyst: HAL

Analyzed: 02/17/2025 23:48

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0085-07 A

Preparation Batch: BNB0295

Sample Size: 25 mL

Prepared: 02/15/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	39.8	mg/L	D
Manganese	7439-96-5	50	0.0500	3.24	mg/L	D



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Reported:
08-Apr-2025 09:48

SPL-GW-MW31-0225
25B0085-08 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 15:10
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 18:05
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-08 E

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.33	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	108	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW31-0225
25B0085-08 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM

Sampled: 02/04/2025 15:10

Instrument: NT16 Analyst: LN

Analyzed: 02/06/2025 16:28

Sample Preparation:

Preparation Method: EPA 5030C (Purge and Trap)

Extract ID: 25B0085-08 B

Preparation Batch: BNB0094

Sample Size: 10 mL

Prepared: 02/06/2025

Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.790	ug/L	
Surrogate: 1,2-Dichloroethane-d4			80-129 %	107	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW31-0225
25B0085-08 (Water)

Metals and Metallic Compounds

Method: EPA 6020B

Sampled: 02/04/2025 15:10

Instrument: ICPMS1 Analyst: HAL

Analyzed: 02/17/2025 23:53

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25B0085-08 A

Preparation Batch: BNB0295

Sample Size: 25 mL

Prepared: 02/15/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	19.4	mg/L	D
Manganese	7439-96-5	20	0.0200	0.847	mg/L	D



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

SPL-GW-MW81-0225
25B0085-09 (Water)

Volatile Organic Compounds

Method: EPA 8260D	Sampled: 02/04/2025 15:10
Instrument: NT3 Analyst: PKC	Analyzed: 02/07/2025 18:27
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0131
	Sample Size: 10 mL
	Prepared: 02/07/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-09 B

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	103	%	



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Reported:
08-Apr-2025 09:48

SPL-GW-MW81-0225
25B0085-09 (Water)

Volatile Organic Compounds - SIM

Method: EPA 8260D-SIM	Sampled: 02/04/2025 15:10
Instrument: NT16 Analyst: LN	Analyzed: 02/06/2025 16:49
Sample Preparation:	Preparation Method: EPA 5030C (Purge and Trap)
	Preparation Batch: BNB0094
	Sample Size: 10 mL
	Prepared: 02/06/2025
	Final Volume: 10 mL
	Extract ID: 25B0085-09 A

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
Surrogate: 1,2-Dichloroethane-d4			80-129 %	106	%	



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - Quality Control

Batch BNB0131 - EPA 8260D in Water

Instrument: NT3 Analyst: PKC

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0131-BLK1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 11:48								
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.97		ug/L	5.00		99.5	80-129			
LCS (BNB0131-BS1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 10:42								
cis-1,2-Dichloroethene	11.6	0.20	ug/L	10.0		116	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.84		ug/L	5.00		96.9	80-129			
LCS Dup (BNB0131-BSD1)		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 11:04								
cis-1,2-Dichloroethene	12.1	0.20	ug/L	10.0		121	80-121	3.92	30	
Surrogate: 1,2-Dichloroethane-d4	5.14		ug/L	5.00		103	80-129			
Matrix Spike (BNB0131-MS2)		Source: 25B0085-03		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 19:33						
cis-1,2-Dichloroethene	6.49	0.20	ug/L	10.0	0.40	60.8	80-121			*
Surrogate: 1,2-Dichloroethane-d4	5.88		ug/L	5.00	5.64	118	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BNB0131-MSD2)		Source: 25B0085-03		Prepared: 07-Feb-2025 Analyzed: 07-Feb-2025 19:56						
cis-1,2-Dichloroethene	8.30	0.20	ug/L	10.0	0.40	79.0	80-121	24.50	30	*
Surrogate: 1,2-Dichloroethane-d4	5.57		ug/L	5.00	5.64	111	80-129			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



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Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

Analysis by: Analytical Resources, LLC

Volatile Organic Compounds - SIM - Quality Control

Batch BNB0094 - EPA 8260D-SIM in Water

Instrument: NT16 Analyst: LN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0094-BLK1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 10:35										
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5120		ug/L	5000		102	80-129			
LCS (BNB0094-BS1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 09:33										
Vinyl chloride	2.12	0.0200	ug/L	2.00		106	62-141			
Surrogate: 1,2-Dichloroethane-d4	5310		ug/L	5000		106	80-129			
LCS Dup (BNB0094-BSD1) Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 09:53										
Vinyl chloride	2.18	0.0200	ug/L	2.00		109	62-141	2.88	30	
Surrogate: 1,2-Dichloroethane-d4	5270		ug/L	5000		105	80-129			
Matrix Spike (BNB0094-MS2) Source: 25B0085-03 Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 17:51										
Vinyl chloride	2.47	0.0200	ug/L	2.00	0.285	109	62-141			
Surrogate: 1,2-Dichloroethane-d4	5590		ug/L	5000	5350	112	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
Matrix Spike Dup (BNB0094-MSD2) Source: 25B0085-03 Prepared: 06-Feb-2025 Analyzed: 06-Feb-2025 18:12										
Vinyl chloride	2.51	0.0200	ug/L	2.00	0.285	111	62-141	1.63	30	
Surrogate: 1,2-Dichloroethane-d4	5550		ug/L	5000	5350	111	80-129			

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



Seattle Public Utilities
700-5th Ave, Ste 4900, Box 34018
Seattle WA, 98124-4018

Project: South Park Landfill -Parametrix Water
Project Number: 553-155-067
Project Manager: Min-Soon Yim

Reported:
08-Apr-2025 09:48

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BNB0295 - EPA 6020B in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BNB0295-BLK1)			Prepared: 15-Feb-2025 Analyzed: 17-Feb-2025 21:14								
Iron	54	ND	0.0360	mg/L							U
Iron	57	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
LCS (BNB0295-BS1)			Prepared: 15-Feb-2025 Analyzed: 17-Feb-2025 21:19								
Iron	54	4.99	0.0360	mg/L	5.00		99.8	80-120			
Iron	57	4.86	0.0360	mg/L	5.00		97.2	80-120			
Manganese	55	0.0245	0.00100	mg/L	0.0250		97.9	80-120			
Duplicate (BNB0295-DUP1)			Source: 25B0085-03		Prepared: 15-Feb-2025 Analyzed: 17-Feb-2025 22:41						
Iron	54	14.1	0.720	mg/L		14.3			1.56	20	D
Manganese	55	1.28	0.0200	mg/L		1.30			1.23	20	D
Matrix Spike (BNB0295-MS1)			Source: 25B0085-03		Prepared: 15-Feb-2025 Analyzed: 17-Feb-2025 22:46						
Iron	54	19.9	0.720	mg/L	5.00	14.3	112	75-125			D
Manganese	55	1.34	0.0200	mg/L	0.0250	1.30	184	75-125			HC, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BNB0295-MSD1)			Source: 25B0085-03		Prepared: 15-Feb-2025 Analyzed: 17-Feb-2025 22:51						
Iron	54	18.0	0.720	mg/L	5.00	14.3	74.8	75-125	9.79	20	*, D
Manganese	55	1.24	0.0200	mg/L	0.0250	1.30	-238.0	75-125	8.18	20	HC, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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Uncertified Analytes included in this Report

Analysis Matrix & Analyte

None

Certified Analyses included in this Report

Analysis Matrix & Analyte

Certification Codes

EPA 6020B in Water

Iron-54	NELAP,DoD-ELAP,WADOE
Iron-57	NELAP,DoD-ELAP,WADOE
Manganese-55	NELAP,DoD-ELAP,WADOE

EPA 8260D in Water

cis-1,2-Dichloroethene	ADEC,NELAP,WADOE,DoD-ELAP
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EPA 8260D-SIM in Water

Vinyl chloride	NELAP,WADOE
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Certifications

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025



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Notes and Definitions

*	Flagged value is not within established control limits.
D	The reported value is from a dilution
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to $\pm$ RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.
!	Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.
#	Indicates that ARL is NOT ACCREDITED for this parameter in samples logged as 'Drinking Water'