

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 Third Quarter 2025 Progress Report

Dear Ryan:

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

## General Activities During the 2025 Third Quarter

### SRDS Property

- The old South Transfer Station seep area (compactor shed) remains fenced off and locked. All existing safeguards remain in place.
- Solid Waste Operations and Household Hazardous Waste Collection continue on the Seattle Public Utilities (SPU) old South Transfer Station property.
- Another underground water leak occurred this spring and water was shut off. Repair or abandonment of the leaking water line will occur during construction of STS Phase II.
- Cleanup of residual glass cullet, ecology block fragments, and glass labels resulting from a failure of ecology blocks from a temporary lessee's operations on the property is complete. A portion of the southern fence, damaged from the incident, has been repaired. One damaged and leaning utility pole from the failure has been remedied with bracing.
- Three waste audits were performed on the SRDS property in the third quarter. King County Public Health (KCPH) is aware of this activity.

### CenterPoint South Park LLC Property

- The landfill gas system blowers continue to be remotely monitored.
- Routine operation and maintenance of the landfill gas system was conducted as scheduled for the quarter.
- First Student and Amazon have vacated the property. Avis has become the new tenant on the former Amazon lot. MedLog will lease approximately 3 acres of the former First Student lot beginning October 1.
- Quarterly inspection of the methane alarms in the on-site buildings was not conducted due to building vacancy.
- Maintenance or repair was completed at five locations noted in the 2025 annual cap reinspection. Work included catch basin and sediment cleanup, minor asphalt repairs, blackberry removal along the fence line, and capping of an open pipe. Each location was documented in a cap maintenance form, which will be included in the next cap inspection report.



**Overall Settlement Parcels**

- **Third Quarter Compliance Monitoring**
  - SPU staff completed the third quarter compliance monitoring at the perimeter gas probes and groundwater wells.
  - Parametrix reviewed all field measurements collected during the monitoring event and completed the associated data management tasks.
- **Cap Inspections**
  - A report summarizing the findings of the 2025 annual cap inspection was submitted to the Washington State Department of Ecology (Ecology).
- New supplemental gas probes were installed, damaged probe GP-28 was repaired, and buried purge water drums were removed.

**Deviations from Samples, Required Tasks, CAP, or Schedule**

There were no deviations to report this quarter.

**Data Summary**

**Perimeter Gas Probes Monitoring**

**Monitoring Date:** July 29, 2025

**Conducted By:** SPU

All methane concentrations were below the regulatory action limit of 5% by volume. Methane was detected only at the following locations:

Probe	CH4 (% by volume)	Blocked	Comments
GP-27	0.1%	No	Below trigger values

Monitoring data are provided in the attached records.

**Groundwater Monitoring**

**Monitoring Dates:** August 4-6, 2025

**Conducted By:** SPU

**Laboratory Analysis:** Performed by Analytical Resources, LLC

Data validation for the 2025 third quarter compliance monitoring event is complete. A trigger assessment for vinyl chloride is underway; results will be reported to Ecology within 30 days.

A draft groundwater quality data summary table, field sheets, and final laboratory reports are included as attachments.



## 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.
- Conduct two additional waste audits (tentative) during the fourth quarter.

### CenterPoint Property

- Continued remote monitoring of the landfill gas system blowers.
- Complete the fourth quarter 2025 operation and maintenance of the landfill gas system.

### Overall Settlement Parcels

- SPU will conduct the fourth quarter 2025 compliance monitoring.
- Prepare an installation report for the supplemental gas probes.
- Conduct the 2025 mid-year cap inspection and verify completion of maintenance by property owners. Completed maintenance forms will be included in the 2025 annual report..

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 Draft Groundwater Quality Data Summary, Third Quarter 2025
- 2 Landfill Gas and Groundwater Compliance Monitoring Field Sheets, Third Quarter 2025
- 3 Third Quarter 2025 Groundwater Laboratory Data

# **Attachment 1**

Draft Groundwater Quality  
Data Summary,  
Third Quarter 2025

**Groundwater Quality Data Summary, Third Quarter 2025, South Park Landfill**

Parameter	Units	Cleanup Level	Upgradient Wells			Downgradient Wells											Trip Blanks				
			A-Zone			Perched Zone	A-Zone						B-Zone				MW-80	MW-81	MW-82		
			MW-12	MW-14	MW-29	MW-30 <sup>1</sup>	MW-25	MW-26	MW-61 (MW-26 Dup)	MW-27	MW-31 <sup>1,2</sup>	MW-32 <sup>3</sup>	MW-60 (MW-32 Dup)	MW-33 <sup>3</sup>	MW-08	MW-10				MW-18 <sup>3</sup>	MW-24
8/4/25	8/4/25	8/6/25	8/6/25	8/5/25	8/6/25	8/6/25	8/5/25	8/6/25	8/4/25	8/4/25	8/5/25	8/5/25	8/5/25	8/6/25	8/4/25	8/5/25	8/6/25				
<b>Field Parameters</b>																					
Temperature	C		16.4	16.9	14.1	16.3	14.9	13.6	--	14.8	16.4	14.8	--	15.9	13.6	15.3	16.4	13.4	--	--	--
Dissolved Oxygen	mg/L		0.45	4.71	0.10	0.10	0.09	0.93	--	0.22	0.24	0.14	--	0.13	0.16	0.25	0.09	0.08	--	--	--
Specific Conductivity	µS/cm		511.0	610.0	823.0	510.0	1181.0	276.2	--	604.0	517.0	846.0	--	1309.0	1050.0	1450.0	609.0	1000.0	--	--	--
pH	units		6.32	6.78	6.84	6.41	6.66	6.23	--	6.65	6.48	6.85	--	6.85	6.79	6.82	6.85	6.69	--	--	--
Redox	mv		38.7	-37.7	-100.2	-2.3	-79.9	1.0	--	-72.2	-46.2	-109.0	--	-127.5	-97.1	-59.6	-73.4	-75.9	--	--	--
Turbidity	NTU		1.47	1.97	1.67	1.37	4.87	4.55	--	11.40	19.40	4.67	--	2.23	3.83	2.85	4.33	3.98	--	--	--
<b>Metals</b>																					
Iron, Total	mg/L	27 A-Zone 31 B-Zone	2.93	4.67	21.1	3.97	<b>33.5</b>	7.35	7.34	19.6	19.6	13.1	12.8	16.5	--	--	--	--	--	--	--
Manganese, Total	mg/L	2.2	0.190	1.03	0.634	0.121	<b>2.81</b>	0.0895	0.0916	0.528	0.831	1.19	1.16	1.66	0.836	2.17	0.714	1.44	--	--	--
<b>Volatile Organic Compounds</b>																					
Vinyl Chloride	µg/L	0.29	0.0200 U	0.0200 U	0.109	0.335	<b>0.433</b>	0.0200 U	0.0204	0.0808	0.835	0.234	0.234	0.187	0.0592	0.256	0.0406	0.0524	0.0200 U	0.0200 U	0.0200 U
Cis-1,2-Dichloroethene	µg/L	16	0.20 U	0.20 U	0.20 U	0.64	0.22	0.25	0.26	0.20 U	0.30	0.32	0.33	0.20 U	0.20 U	0.61	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

**Notes:**

- <sup>1</sup> MW 30 and MW-31 monitor the former Glitsa property and are not CPOC wells.
- <sup>2</sup> MW-31 is not a CPOC well, but is considered in vinyl chloride trigger condition 2 (the trend trigger).
- <sup>3</sup> 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.

**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 2**

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

**South Park Landfill**  
**Third Quarter 2025 Gas Probe Monitoring Data**

<b>Gas Probe</b>	<b>Date</b>	<b>Time</b>	<b>Rel. Press. inches H2O</b>	<b>CH4 %</b>	<b>CO2 %</b>	<b>O2 %</b>	<b>Balance %</b>	<b>Blocked (Y/N)</b>	<b>Baro. Press. inches Hg</b>
SP00GP26	7/29/2025	8:22	0.00	0.0	2.0	19.3	78.7	N	30.10
SP00GP33	7/29/2025	8:34	0.05	0.0	2.8	16.5	80.7	N	30.10
SP00GP37	7/29/2025	8:47	0.06	0.0	10.6	10.0	79.4	N	30.10
SP00GP38	7/29/2025	8:55	-0.03	0.0	18.8	2.1	79.1	N	30.10
SP00GP23	7/29/2025	9:14	-0.01	0.0	8.8	12.6	78.6	N	30.11
SP00GP07	7/29/2025	9:20	-0.04	0.0	3.0	17.7	79.3	N	30.13
SP00GP16	7/29/2025	9:40	0.01	0.0	13.9	5.0	81.1	N	30.13
SP00GP29	7/29/2025	9:46	-0.01	0.0	17.1	0.0	82.9	N	30.12
SP00GP28	7/29/2025	9:52	0.01	0.0	0.1	20.0	79.9	N	30.12
SP00GP27	7/29/2025	9:59	-0.02	0.1	12.3	0.0	87.6	N	30.13
SP00GP09	7/29/2025	10:05	-0.02	0.0	5.0	16.2	78.8	N	30.11
SP00GP11	7/29/2025	10:17	0.87	0.0	0.5	20.2	79.3	N	30.12
SP00GP03	7/29/2025	10:23	0.04	0.0	8.5	8.5	83.0	N	30.11
SP00GP31	7/29/2025	10:28	0.02	0.0	10.3	9.5	80.2	N	30.12
SP00GP32	7/29/2025	10:33	-0.87	0.0	2.2	16.2	81.6	Y	30.14
SP00GP15	7/29/2025	10:40	-41.53	0.0	1.1	18.3	80.6	Y	30.12
SP00GP13	7/29/2025	10:54	-0.28	0.0	2.0	17.8	80.2	Y	30.11

GEM™5000; G5 V1\_15\_12; LSGAM:6\_0\_20160627; {24160130200}

# Water Level Measurement Field Report

DATE:	08/04/2025	JOB NO. 553-1550-067			
PROJECT: South Park Landfill		CLIENT: Seattle Public Utilities			
LOCATION: Seattle, WA					
WEATHER	TEMP	60	° at	8:10	AM
Cloudy		64	° at	9:40	PM
PRESENT AT SITE	T. Steimel	W. Yu	D. Favill		

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	9:40	6.62		TOC	15.3	10 - 15	1.52
MW-14	9:34	3.54		TOC	21.8	11.5 - 21.5	0.8
MW-29	9:28	8.9		TOC	30	20 - 30	-0.29
MW-18	9:15	15.99		TOC	40.4	30 - 40	1.25
MW-25	8:45	14.32		TOC	27	22 - 27	2.79
MW-32	9:08	11.31		TOC	24	19 - 24	-0.44
MW-33	9:01	11.48		TOC	25	20 - 25	-0.47
MW-26	8:21	10.21		TOC	25	15 - 25	2.39
MW-27	8:13	9.08		TOC	20	10 - 20	2.04
MW-10	8:48	13.59		TOC	45	35 - 45	1.65
MW-24	8:20	9.47		TOC	45.3	35 - 45	1.56
MW-08	8:11	8.52		TOC	45.6	35.5 - 45.5	1.88
MW-30	8:35	10.86		TOC	13	8 - 13	-0.53
MW-31	8:32	11.47		TOC	23	18 - 23	-0.46

Comments:

TOC – top of PVC casing                      SG – staff gauge

SIGNED: \_\_\_\_\_





























# Chain of Custody Record & Laboratory Analysis Request



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

ARI Assigned Number:	Turn-around Requested:	Date:
ARI Client Company:	Phone:	Page:
City of Seattle/ Seattle Public Utilities	(206) 233-2629	1 of 1
Client Contact:	No. of Coolers:	Cooler Temps:
Shannon Straws, Laura Lee(Lblee@parametrix.com)		

Client Project Name:					Analysis Requested								Notes/Comments	
South Park Landfill - Groundwater Sampling					cis-1,2-DCE	Vinyl Chloride	Total FE, MN							Mark for MS/MSD
Client Project #:	Samplers:													
553-1550-067	T. Steimel	W. Yu	D. Favill											
Sample ID	Date	Time	Matrix	No. Containers										
SPL-GW-MW33-0825	8/4/2025	10:25	Water	7	3	3	1							
SPL-GW-MW32-0825	8/4/2025	11:30	Water	13	6	6	1						MS/MSD	
SPL-GW-MW60-0825	8/4/2025	12:00	Water	7	3	3	1							
SPL-GW-MW12-0825	8/4/2025	13:10	Water	7	3	3	1							
SPL-GW-MW14-0825	8/4/2025	14:05	Water	7	3	3	1							
SPL-GW-MW80-0825	8/4/2025	-	Water	2	1	1								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature) <i>Duncan Favill</i>	(Signature) <i>Sydni Acevedo</i>	(Signature)	(Signature)
	Printed Name:	Printed Name:	Printed Name:	Printed Name:
	Duncan Favill	Sydni Acevedo		
Company:	Company:	Company:	Company:	
SPU/K-H landfill	AR LLC			
Date & Time:	Date & Time:	Date & Time:	Date & Time:	
8/4/2025 14:41	8/4/25 1441			

**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

**Sample Retention Policy:** Unless specified by workorder 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 s

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: \_\_\_\_\_ Turn-around Requested: \_\_\_\_\_

Date: 08/05/2025

ARI Client Company: City of Seattle/ Seattle Public Utilities Phone: (206) 233-2629

Page: 1 of 1

Client Contact: Shannon Straws, Laura Lee (lblee@parametrix.com)

No. of Coolers: 1 Cooler Temps: 5.6°C



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

Client Project Name: South Park Landfill - Groundwater Sampling

Analysis Requested

Client Project #: 553-1550-067

cis-1,2-DCE	Vinyl Chloride	Total FE, MN	Analysis Requested						Notes/Comments
									Mark for MS/MSD

Samplers: T. Steimel | W. Yu | D. Favill

Sample ID	Date	Time	Matrix	No. Containers
SPL-GW-MW27-0825	8/5/2025	9:45	Water	7
SPL-GW-MW08-0825	8/5/2025	10:45	Water	7
SPL-GW-MW10-0825	8/5/2025	12:00	Water	7
SPL-GW-MW25-0825	8/5/2025	12:45	Water	7
SPL-GW-MW18-0825	8/5/2025	13:50	Water	7
SPL-GW-MW81-0825	8/5/2025	-	Water	2



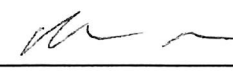
Sample ID	Date	Time	Matrix	No. Containers
SPL-GW-MW27-0825	8/5/2025	9:45	Water	7
SPL-GW-MW08-0825	8/5/2025	10:45	Water	7
SPL-GW-MW10-0825	8/5/2025	12:00	Water	7
SPL-GW-MW25-0825	8/5/2025	12:45	Water	7
SPL-GW-MW18-0825	8/5/2025	13:50	Water	7
SPL-GW-MW81-0825	8/5/2025	-	Water	2

Comments/Special Instructions	Relinquished by: (Signature) <i>Duncan Favill</i>	Received by: (Signature) <i>Matthew Ranner</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Duncan Favill	Printed Name: Matthew Ranner	Printed Name:	Printed Name:
	Company: SPU/K-H landfill	Company: ARCC	Company:	Company:
	Date & Time: 8/5/2025 14:27	Date & Time: 08/05/25 1427	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

**Sample Retention Policy:** Unless specified by workorder 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 s

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:		Turn-around Requested:			Date: 08/06/2025				 <b>Analytical Resources, Incorporated</b> Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)				
ARI Client Company: City of Seattle/ Seattle Public Utilities		Phone: (206) 233-2629			Page: 1 of 1								
Client Contact: Shannon Straws, Laura Lee(Lblee@parametrix.com)					No. of Coolers: 1				Cooler Temps: 28°				
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested								Notes/Comments
Client Project #: 553-1550-067		Samplers: T. Steimel   W. Yu   D. Favill			cis-1,2-DCE	Vinyl Chloride	Total FE, MN						Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers									
SPL-GW-MW26-0825	8/6/2025	9:25	Water	13	6	6	1						MS/MSD
SPL-GW-MW61-0825	8/6/2025	9:55	Water	7	3	3	1						
SPL-GW-MW24-0825	8/6/2025	10:25	Water	7	3	3	1						
SPL-GW-MW29-0825	8/6/2025	12:00	Water	7	3	3	1						
SPL-GW-MW31-0825	8/6/2025	13:35	Water	7	3	3	1						
SPL-GW-MW30-0825	8/6/2025	14:20	Water	7	3	3	1						
SPL-GW-MW82-0825	8/6/2025	-	Water	2	1	1							
Comments/Special Instructions	Relinquished by: (Signature) 		Received by: (Signature) 		Relinquished by: (Signature)				Received by: (Signature)				
	Printed Name: Duncan Favill		Printed Name: Roman		Printed Name:				Printed Name:				
	Company: SPU/K-H landfill		Company: ARIC		Company:				Company:				
	Date & Time: 8/6/2025 15:08		Date & Time: 08/06/25 1508		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

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# **Attachment 3**

Third Quarter 2025

Groundwater Laboratory Data



**Analytical Resources, LLC**  
Analytical Chemists and Consultants  
Tukwila, WA

14 August 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)  
25H0041

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: <b>25 H0041</b>		Turn-around Requested:			Date: <b>08/04/2025</b>				 <b>Analytical Resources, Incorporated</b> Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)					
ARI Client Company: City of Seattle/ Seattle Public Utilities		Phone: <b>(206) 233-2629</b>			Page: <b>1 of 1</b>									
Client Contact: <b>Shannon Straws, Laura Lee(Lblee@parametrix.com)</b>					No. of Coolers: <b>10.6</b>				Cooler Temps:					
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested								Notes/Comments	
Client Project #: <b>553-1550-067</b>		Samplers: T. Steimel   W. Yu   D. Favill			cis-1,2-DCE	Vinyl Chloride	Total FE, MN							Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers										
SPL-GW-MW33-0825	8/4/2025	10:25	Water	7	3	3	1							
SPL-GW-MW32-0825	8/4/2025	11:30	Water	13	6	6	1							MS/MSD
SPL-GW-MW60-0825	8/4/2025	12:00	Water	7	3	3	1							
SPL-GW-MW12-0825	8/4/2025	13:10	Water	7	3	3	1							
SPL-GW-MW14-0825	8/4/2025	14:05	Water	7	3	3	1							
SPL-GW-MW80-0825	8/4/2025	-	Water	2	1	1								
Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) <i>[Signature]</i>			Relinquished by: (Signature)				Received by: (Signature)				
	Printed Name: <b>Duncan Favill</b>		Printed Name: <i>Sydni Acevedo</i>			Printed Name:				Printed Name:				
	Company: <b>SPU/K-H landfill</b>		Company: <i>AR LLC</i>			Company:				Company:				
	Date & Time: <b>8/4/2025 14:41</b>		Date & Time: <i>8/4/25 1441</i>			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

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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:**  
14-Aug-2025 16:30

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
SPL-GW-MW33-0825	25H0041-01	Water	04-Aug-2025 10:25	04-Aug-2025 14:41
SPL-GW-MW32-0825	25H0041-02	Water	04-Aug-2025 11:30	04-Aug-2025 14:41
SPL-GW-MW60-0825	25H0041-03	Water	04-Aug-2025 12:00	04-Aug-2025 14:41
SPL-GW-MW12-0825	25H0041-04	Water	04-Aug-2025 13:10	04-Aug-2025 14:41
SPL-GW-MW14-0825	25H0041-05	Water	04-Aug-2025 14:05	04-Aug-2025 14:41
SPL-GW-MW80-0825	25H0041-06	Water	04-Aug-2025 10:25	04-Aug-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:**  
14-Aug-2025 16:30

## **Work Order Case Narrative**

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill -Parametrix Water  
**Work Order:** 25H0041

### **Sample receipt**

Samples as listed on the preceding page were received 04-Aug-2025 14:41 under ARI work order 25H0041. 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.

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

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**Reported:**

14-Aug-2025 16:30

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 outside advisory control limits and flagged on the associated forms.



WORK ORDER

25H0041

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>
25H0041-01 A	HDPE NM, 500 mL, 1:1 HNO3	L2p	
25H0041-01 B	VOA Vial, Clear, 40 mL, HCL		
25H0041-01 C	VOA Vial, Clear, 40 mL, HCL		
25H0041-01 D	VOA Vial, Clear, 40 mL, HCL		
25H0041-01 E	VOA Vial, Clear, 40 mL		
25H0041-01 F	VOA Vial, Clear, 40 mL		
25H0041-01 G	VOA Vial, Clear, 40 mL		
25H0041-02 A	HDPE NM, 500 mL, 1:1 HNO3	L2p	
25H0041-02 B	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 C	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 D	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 E	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 F	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 G	VOA Vial, Clear, 40 mL, HCL		
25H0041-02 H	VOA Vial, Clear, 40 mL		
25H0041-02 I	VOA Vial, Clear, 40 mL		
25H0041-02 J	VOA Vial, Clear, 40 mL		
25H0041-02 K	VOA Vial, Clear, 40 mL		
25H0041-02 L	VOA Vial, Clear, 40 mL		
25H0041-02 M	VOA Vial, Clear, 40 mL		
25H0041-03 A	HDPE NM, 500 mL, 1:1 HNO3	L2p	
25H0041-03 B	VOA Vial, Clear, 40 mL, HCL		
25H0041-03 C	VOA Vial, Clear, 40 mL, HCL		
25H0041-03 D	VOA Vial, Clear, 40 mL, HCL		
25H0041-03 E	VOA Vial, Clear, 40 mL		
25H0041-03 F	VOA Vial, Clear, 40 mL		
25H0041-03 G	VOA Vial, Clear, 40 mL		
25H0041-04 A	HDPE NM, 500 mL, 1:1 HNO3	L2p	
25H0041-04 B	VOA Vial, Clear, 40 mL, HCL		
25H0041-04 C	VOA Vial, Clear, 40 mL, HCL		
25H0041-04 D	VOA Vial, Clear, 40 mL, HCL		
25H0041-04 E	VOA Vial, Clear, 40 mL		



# Cooler Receipt Form

ARI Client: SPU

Project Name: South Park Landfill

COC No(s): \_\_\_\_\_ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_

Assigned ARI Job No: 25H0041

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 1441 10.6 Temp Gun ID#: 8117

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: SA Date: 8/4/25 Time: 1441

**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: SA Date: 8/4/25 Time: 1447 Labels checked by: SA

**\*\* 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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW33-0825**  
**25H0041-01 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 10:25
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 11:38
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-01 B
	Final Volume: 10 mL	
Prepared: 08/05/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>85.4</i>	<i>%</i>	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW33-0825**  
**25H0041-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 10:25
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 11:19
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-01 E
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.187	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW33-0825**  
**25H0041-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/04/2025 10:25
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0184	Analyzed: 08/12/2025 20:56
Sample Preparation:	Prepared: 08/12/2025	Extract ID: 25H0041-01 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	16.5	mg/L	D
Manganese	7439-96-5	50	0.0500	1.66	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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW32-0825**  
**25H0041-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 11:30
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 12:00
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-02 B
	Final Volume: 10 mL	
Prepared: 08/05/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.32	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	93.6	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW32-0825**  
**25H0041-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 11:30
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 11:40
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-02 J
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.234	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW32-0825**  
**25H0041-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/04/2025 11:30
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0184	Analyzed: 08/12/2025 18:56
Sample Preparation:	Prepared: 08/12/2025	Extract ID: 25H0041-02 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	13.1	mg/L	D
Manganese	7439-96-5	20	0.0200	1.19	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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW60-0825**  
**25H0041-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 12:00
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 12:23
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-03 B
	Prepared: 08/05/2025	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.33	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	97.4	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW60-0825**  
**25H0041-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 12:00
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 12:03
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-03 E
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.234	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW60-0825**  
**25H0041-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/04/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0184	Analyzed: 08/12/2025 18:41
Sample Preparation:	Prepared: 08/12/2025	Extract ID: 25H0041-03 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	12.8	mg/L	D
Manganese	7439-96-5	20	0.0200	1.16	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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW12-0825**  
**25H0041-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 13:10
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 12:45
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-04 B
	Final Volume: 10 mL	
Prepared: 08/05/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	95.3	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW12-0825**  
**25H0041-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 13:10
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 12:25
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-04 E
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

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



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW12-0825**  
**25H0041-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/04/2025 13:10
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0184	Analyzed: 08/12/2025 18:46
Sample Preparation:	Prepared: 08/12/2025	Extract ID: 25H0041-04 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	2.93	mg/L	D
Manganese	7439-96-5	5	0.00500	0.190	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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW14-0825**  
**25H0041-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 14:05
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 13:07
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-05 B
	Prepared: 08/05/2025	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>93.3</i>	<i>%</i>	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW14-0825**  
**25H0041-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 14:05
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 12:47
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-05 E
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

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



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW14-0825**  
**25H0041-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/04/2025 14:05
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0184	Analyzed: 08/12/2025 18:51
Sample Preparation:	Prepared: 08/12/2025	Extract ID: 25H0041-05 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	4.67	mg/L	D
Manganese	7439-96-5	20	0.0200	1.03	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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW80-0825**  
**25H0041-06 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/04/2025 10:25
Instrument: NT3 Analyst: LTN	Preparation Batch: BNH0059	Analyzed: 08/05/2025 13:29
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0041-06 A
	Final Volume: 10 mL	
Prepared: 08/05/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	95.3	%	



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	<b>Reported:</b> 14-Aug-2025 16:30
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**SPL-GW-MW80-0825**  
**25H0041-06 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/04/2025 10:25
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 10:36
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0041-06 B
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.7	%	



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:**  
14-Aug-2025 16:30

**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - Quality Control**

**Batch BNH0059 - EPA 8260D in Water**

Instrument: NT3 Analyst: LTN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0059-BLK1)</b>				Prepared: 05-Aug-2025 Analyzed: 05-Aug-2025 10:37						
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.91		ug/L	5.00		98.3	80-129			
<b>LCS (BNH0059-BS1)</b>				Prepared: 05-Aug-2025 Analyzed: 05-Aug-2025 09:31						
cis-1,2-Dichloroethene	9.83	0.20	ug/L	10.0		98.3	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.53		ug/L	5.00		90.7	80-129			
<b>LCS Dup (BNH0059-BSD1)</b>				Prepared: 05-Aug-2025 Analyzed: 05-Aug-2025 10:16						
cis-1,2-Dichloroethene	9.63	0.20	ug/L	10.0		96.3	80-121	2.00	30	
Surrogate: 1,2-Dichloroethane-d4	4.61		ug/L	5.00		92.2	80-129			
<b>Matrix Spike (BNH0059-MS1)</b>				<b>Source: 25H0041-02</b>		Prepared: 05-Aug-2025 Analyzed: 05-Aug-2025 13:51				
cis-1,2-Dichloroethene	9.19	0.20	ug/L	10.0	0.32	88.7	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.87		ug/L	5.00	4.68	97.4	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
<b>Matrix Spike Dup (BNH0059-MSD1)</b>				<b>Source: 25H0041-02</b>		Prepared: 05-Aug-2025 Analyzed: 05-Aug-2025 14:14				
cis-1,2-Dichloroethene	9.42	0.20	ug/L	10.0	0.32	91.0	80-121	2.46	30	
Surrogate: 1,2-Dichloroethane-d4	4.89		ug/L	5.00	4.68	97.7	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:**  
14-Aug-2025 16:30

**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - SIM - Quality Control**

**Batch BNH0063 - EPA 8260D-SIM in Water**

Instrument: NT16 Analyst: LTN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0063-BLK1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 09:26						
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5120		ug/L	5000		102	80-129			
<b>LCS (BNH0063-BS1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 08:42						
Vinyl chloride	1.94	0.0200	ug/L	2.00		97.1	62-141			
Surrogate: 1,2-Dichloroethane-d4	5290		ug/L	5000		106	80-129			
<b>LCS Dup (BNH0063-BSD1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 09:04						
Vinyl chloride	2.24	0.0200	ug/L	2.00		112	62-141	14.20	30	
Surrogate: 1,2-Dichloroethane-d4	5290		ug/L	5000		106	80-129			
<b>Matrix Spike (BNH0063-MS1)</b>				Source: 25H0041-02		Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 15:03				
Vinyl chloride	2.40	0.0200	ug/L	2.00	0.234	108	62-141			
Surrogate: 1,2-Dichloroethane-d4	5420		ug/L	5000	5170	108	80-129			

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

<b>Matrix Spike Dup (BNH0063-MSD1)</b>				Source: 25H0041-02		Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 15:25				
Vinyl chloride	2.38	0.0200	ug/L	2.00	0.234	107	62-141	0.88	30	
Surrogate: 1,2-Dichloroethane-d4	5370		ug/L	5000	5170	107	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	<b>Reported:</b> 14-Aug-2025 16:30
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Analysis by: Analytical Resources, LLC

**Metals and Metallic Compounds - Quality Control**

**Batch BNH0184 - 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
<b>Blank (BNH0184-BLK1)</b>						Prepared: 12-Aug-2025 Analyzed: 12-Aug-2025 17:14					
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>LCS (BNH0184-BS1)</b>						Prepared: 12-Aug-2025 Analyzed: 12-Aug-2025 17:19					
Iron	54	5.13	0.0360	mg/L	5.00		103	80-120			
Manganese	55	0.0245	0.00100	mg/L	0.0250		98.0	80-120			
<b>Duplicate (BNH0184-DUP1)</b>						Source: 25H0041-02 Prepared: 12-Aug-2025 Analyzed: 12-Aug-2025 19:01					
Manganese	55	1.16	0.0200	mg/L		1.19			2.05	20	D
<b>Matrix Spike (BNH0184-MS1)</b>						Source: 25H0041-02 Prepared: 12-Aug-2025 Analyzed: 12-Aug-2025 19:06					
Manganese	55	1.22	0.0200	mg/L	0.0250	1.19	126	75-125			*, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
<b>Matrix Spike Dup (BNH0184-MSD1)</b>						Source: 25H0041-02 Prepared: 12-Aug-2025 Analyzed: 12-Aug-2025 19:11					
Manganese	55	1.20	0.0200	mg/L	0.0250	1.19	36.2	75-125	1.85	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	<b>Reported:</b> 14-Aug-2025 16:30
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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
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	WA100006-018	05/12/2026
WADOE	WA Dept of Ecology	C558	08/31/2025



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:**  
14-Aug-2025 16:30

### Notes and Definitions

- \* Flagged value is not within established control limits.
- B This analyte was detected in the method blank.
- D The reported value is from a dilution
- J Estimated concentration value detected below the reporting limit.
- 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 samples logged as 'Drinking Water'
- # Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.



**Analytical Resources, LLC**  
Analytical Chemists and Consultants  
Tukwila, WA

19 August 2025

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

RE: South Park Landfill -Parametrix Water (553-1550-067)

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)  
25H0059

Associated SDG ID(s)  
N/A

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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: <b>25H0059</b>		Turn-around Requested:			Date: <b>08/05/2025</b>								
ARI Client Company: City of Seattle/ Seattle Public Utilities		Phone: <b>(206) 233-2629</b>			Page: <b>1 of 1</b>								
Client Contact: <b>Shannon Straws, Laura Lee(Lblee@parametrix.com)</b>					No. of Coolers: <b>1</b> Cooler Temps: <b>5.6°C</b>								
Client Project Name: <b>South Park Landfill - Groundwater Sampling</b>					Analysis Requested							Notes/Comments	
Client Project #: <b>553-1550-067</b>		Samplers: <b>T. Steimel   W. Yu   D. Favill</b>			cis-1,2-DCE	Vinyl Chloride	Total FE, MN						Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers									
SPL-GW-MW27-0825	8/5/2025	9:45	Water	7	3	3	1						
SPL-GW-MW08-0825	8/5/2025	10:45	Water	7	3	3	1						
SPL-GW-MW10-0825	8/5/2025	12:00	Water	7	3	3	1						
SPL-GW-MW25-0825	8/5/2025	12:45	Water	7	3	3	1						
SPL-GW-MW18-0825	8/5/2025	13:50	Water	7	3	3	1						
SPL-GW-MW81-0825	8/5/2025	-	Water	2	1	1							
Comments/Special Instructions					Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) <i>[Signature]</i>		Relinquished by: (Signature)		Received by: (Signature)		
					Printed Name: <b>Duncan Favill</b>		Printed Name: <i>Matthew Panner</i>		Printed Name:		Printed Name:		
					Company: <b>SPU/K-H landfill</b>		Company: <i>ARLCC</i>		Company:		Company:		
					Date & Time: <b>8/5/2025 14:27</b>		Date & Time: <b>08/05/25 1427</b>		Date & Time:		Date & Time:		



**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

**Sample Retention Policy:** Unless specified by workorder 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 s



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

Project: South Park Landfill -Parametrix Water  
Project Number: 553-1550-067  
Project Manager: Shannon Straws

**Reported:**  
19-Aug-2025 10:17

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW27-0825	25H0059-01	Water	05-Aug-2025 09:45	05-Aug-2025 14:27
SPL-GW-MW08-0825	25H0059-02	Water	05-Aug-2025 10:45	05-Aug-2025 14:27
SPL-GW-MW10-0825	25H0059-03	Water	05-Aug-2025 12:00	05-Aug-2025 14:27
SPL-GW-MW25-0825	25H0059-04	Water	05-Aug-2025 12:45	05-Aug-2025 14:27
SPL-GW-MW18-0825	25H0059-05	Water	05-Aug-2025 13:50	05-Aug-2025 14:27
SPL-GW-MW81-0825	25H0059-06	Water	05-Aug-2025 00:00	05-Aug-2025 14:27



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

Project: South Park Landfill -Parametrix Water  
Project Number: 553-1550-067  
Project Manager: Shannon Straws

**Reported:**  
19-Aug-2025 10:17

## Work Order Case Narrative

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill -Parametrix Water  
**Work Order:** 25H0059

### Sample receipt

Samples as listed on the preceding page were received 05-Aug-2025 14:27 under ARI work order 25H0059. 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.

### 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: 553-1550-067

Project Manager: Shannon Straws

**Reported:**

19-Aug-2025 10:17

**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.



WORK ORDER

25H0059

Client: Seattle Public Utilities Project Manager: Kelly Bottem  
Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25H0059-01 A	HDPE NM, 500 mL, 1:1 HNO3	<u>L2</u>	<u>Passed</u>
25H0059-01 B	VOA Vial, Amber, 40 mL		
25H0059-01 C	VOA Vial, Amber, 40 mL		
25H0059-01 D	VOA Vial, Amber, 40 mL		
25H0059-01 E	VOA Vial, Amber, 40 mL, HCL		
25H0059-01 F	VOA Vial, Amber, 40 mL, HCL		
25H0059-01 G	VOA Vial, Amber, 40 mL, HCL		
25H0059-02 A	HDPE NM, 500 mL, 1:1 HNO3	<u>L2</u>	<u>Passed</u>
25H0059-02 B	VOA Vial, Amber, 40 mL		
25H0059-02 C	VOA Vial, Amber, 40 mL		
25H0059-02 D	VOA Vial, Amber, 40 mL		
25H0059-02 E	VOA Vial, Amber, 40 mL, HCL		
25H0059-02 F	VOA Vial, Amber, 40 mL, HCL		
25H0059-02 G	VOA Vial, Amber, 40 mL, HCL		
25H0059-03 A	HDPE NM, 500 mL, 1:1 HNO3	<u>L2</u>	<u>Passed</u>
25H0059-03 B	VOA Vial, Amber, 40 mL		
25H0059-03 C	VOA Vial, Amber, 40 mL		
25H0059-03 D	VOA Vial, Amber, 40 mL		
25H0059-03 E	VOA Vial, Amber, 40 mL, HCL		
25H0059-03 F	VOA Vial, Amber, 40 mL, HCL		
25H0059-03 G	VOA Vial, Amber, 40 mL, HCL		
25H0059-04 A	HDPE NM, 500 mL, 1:1 HNO3	<u>L2</u>	<u>Passed</u>
25H0059-04 B	VOA Vial, Amber, 40 mL		
25H0059-04 C	VOA Vial, Amber, 40 mL		
25H0059-04 D	VOA Vial, Amber, 40 mL		
25H0059-04 E	VOA Vial, Amber, 40 mL, HCL		
25H0059-04 F	VOA Vial, Amber, 40 mL, HCL		
25H0059-04 G	VOA Vial, Amber, 40 mL, HCL		
25H0059-05 A	HDPE NM, 500 mL, 1:1 HNO3	<u>L2</u>	<u>Passed</u>
25H0059-05 B	VOA Vial, Amber, 40 mL		
25H0059-05 C	VOA Vial, Amber, 40 mL		
25H0059-05 D	VOA Vial, Amber, 40 mL		



**WORK ORDER**

25H0059

<b>Client:</b> Seattle Public Utilities	<b>Project Manager:</b> Kelly Bottem
<b>Project:</b> South Park Landfill -Parametrix Water	<b>Project Number:</b> 553-1550-067

25H0059-05 E	VOA Vial, Amber, 40 mL, HCL
25H0059-05 F	VOA Vial, Amber, 40 mL, HCL
25H0059-05 G	VOA Vial, Amber, 40 mL, HCL
25H0059-06 A	VOA Vial, Amber, 40 mL
25H0059-06 B	VOA Vial, Amber, 40 mL, HCL

    *N?W*      
Preservation Confirmed By

    *8/5/25*      
Date



# Cooler Receipt Form

ARI Client: SPU

Project Name: South Park Landfill

COC No(s): \_\_\_\_\_ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_

Assigned ARI Job No: 2510059

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) YES NO

Were custody papers properly filled out (ink, signed, etc.) (YES) YES NO

Temperature of Cooler(s) (°C) Time 1427 56°C Temp Gun ID#: 5009708

Was a temperature blank included in the cooler? YES (NO)

Were coolers received between 0°- 6° (°C) (YES) YES NO

Was sufficient ice used (if appropriate)? NA (YES) YES NO

Cooler Accepted by: MP Date: 08/25/25 Time: 1427

**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

How were bottles sealed in plastic bags? Individually (Grouped) Grouped Not

Did all bottles arrive in good condition (unbroken)? (YES) YES NO

Were all bottle labels complete and legible? (YES) YES NO

Did the number of containers listed on COC match with the number of containers received? (YES) YES NO

Did all bottle labels and tags agree with custody papers? (YES) YES NO

Were all bottles used correct for the requested analyses? (YES) YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ... NA (YES) YES NO

Were all VOC vials free of air bubbles? NA (YES) YES NO

Was sufficient amount of sample sent in each bottle? (YES) YES NO

Date VOC Trip Blank was made at ARI: (NA) NA

Were the sample(s) split by ARI? (NA) NA YES Date/Time: \_\_\_\_\_ Equipment: \_\_\_\_\_ Split by: \_\_\_\_\_

Samples Logged by: NTW Date: 8/15/25 Time: 15:02 Labels checked by: NTW

**\*\* 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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW27-0825**  
**25H0059-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 09:45
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 13:10
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-01 C
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0808	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW27-0825**  
**25H0059-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/05/2025 09:45
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0287	Analyzed: 08/15/2025 18:42
Sample Preparation:	Prepared: 08/15/2025	Extract ID: 25H0059-01 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	10	0.360	19.6	mg/L	D
Manganese	7439-96-5	10	0.0100	0.528	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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW27-0825**  
**25H0059-01RE1 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 09:45
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 10:34
Sample Preparation:	Prepared: 08/06/2025	Extract ID: 25H0059-01RE1 E
	Sample Size: 10 mL	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	95.4	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW08-0825**  
**25H0059-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 10:45
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 10:56
Sample Preparation:	Prepared: 08/06/2025	Extract ID: 25H0059-02 E
	Sample Size: 10 mL	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	94.0	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW08-0825**  
**25H0059-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 10:45
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 13:33
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-02 B
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0592	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW08-0825**  
**25H0059-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/05/2025 10:45
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0287	Analyzed: 08/15/2025 19:00
Sample Preparation:	Prepared: 08/15/2025	Extract ID: 25H0059-02 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	13.6	mg/L	D
Manganese	7439-96-5	20	0.0200	0.836	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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW10-0825**  
**25H0059-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 12:00
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 11:18
Sample Preparation:	Prepared: 08/06/2025	Extract ID: 25H0059-03 E
	Sample Size: 10 mL	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.61	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	97.8	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW10-0825**  
**25H0059-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 12:00
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 13:55
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-03 B
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.256	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	106	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW10-0825**  
**25H0059-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/05/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0287	Analyzed: 08/15/2025 19:04
Sample Preparation:	Prepared: 08/15/2025	Extract ID: 25H0059-03 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	36.4	mg/L	D
Manganese	7439-96-5	50	0.0500	2.17	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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW25-0825**  
**25H0059-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 12:45
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 11:40
Sample Preparation:	Prepared: 08/06/2025	Extract ID: 25H0059-04 E
	Sample Size: 10 mL	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.22	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.1	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW25-0825**  
**25H0059-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 12:45
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 14:18
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-04 B
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.433	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	109	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW25-0825**  
**25H0059-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/05/2025 12:45
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0287	Analyzed: 08/15/2025 19:08
Sample Preparation:	Prepared: 08/15/2025	Extract ID: 25H0059-04 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	33.5	mg/L	D
Manganese	7439-96-5	50	0.0500	2.81	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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW18-0825**  
**25H0059-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 13:50
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 12:02
Sample Preparation:	Prepared: 08/06/2025	Extract ID: 25H0059-05 E
	Sample Size: 10 mL	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>94.4</i>	<i>%</i>	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW18-0825**  
**25H0059-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 13:50
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 14:40
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-05 B
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0406	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW18-0825**  
**25H0059-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/05/2025 13:50
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0287	Analyzed: 08/15/2025 19:13
Sample Preparation:	Prepared: 08/15/2025	Extract ID: 25H0059-05 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	14.9	mg/L	D
Manganese	7439-96-5	20	0.0200	0.714	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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW81-0825**  
**25H0059-06 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/05/2025 00:00
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0081	Analyzed: 08/06/2025 12:25
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0059-06 B
	Prepared: 08/06/2025	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>80-129 %</i>	<i>98.5</i>	<i>%</i>	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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**SPL-GW-MW81-0825**  
**25H0059-06 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/05/2025 00:00
Instrument: NT16 Analyst: LTN	Analyzed: 08/06/2025 10:57
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0059-06 A
Preparation Batch: BNH0063	Sample Size: 10 mL
Prepared: 08/06/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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Analysis by: Analytical Resources, LLC

**Volatile Organic Compounds - Quality Control**

**Batch BNH0081 - EPA 8260D in Water**

Instrument: NT3 Analyst: LNH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0081-BLK2)</b>		Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 09:18								
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.52		ug/L	5.00		90.4	80-129			
<b>LCS (BNH0081-BS2)</b>		Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 07:27								
cis-1,2-Dichloroethene	8.87	0.20	ug/L	10.0		88.7	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.80		ug/L	5.00		95.9	80-129			
<b>LCS Dup (BNH0081-BSD2)</b>		Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 08:12								
cis-1,2-Dichloroethene	8.96	0.20	ug/L	10.0		89.6	80-121	1.04	30	
Surrogate: 1,2-Dichloroethane-d4	4.72		ug/L	5.00		94.4	80-129			



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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Analysis by: Analytical Resources, LLC

**Volatile Organic Compounds - SIM - Quality Control**

**Batch BNH0063 - EPA 8260D-SIM in Water**

Instrument: NT16 Analyst: LTN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0063-BLK1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 09:26						
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5120		ug/L	5000		102	80-129			
<b>LCS (BNH0063-BS1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 08:42						
Vinyl chloride	1.94	0.0200	ug/L	2.00		97.1	62-141			
Surrogate: 1,2-Dichloroethane-d4	5290		ug/L	5000		106	80-129			
<b>LCS Dup (BNH0063-BSD1)</b>				Prepared: 06-Aug-2025 Analyzed: 06-Aug-2025 09:04						
Vinyl chloride	2.24	0.0200	ug/L	2.00		112	62-141	14.20	30	
Surrogate: 1,2-Dichloroethane-d4	5290		ug/L	5000		106	80-129			



Seattle Public Utilities 700-5th Ave, Ste 4900, Box 34018 Seattle WA, 98124-4018	Project: South Park Landfill -Parametrix Water Project Number: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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Analysis by: Analytical Resources, LLC

**Metals and Metallic Compounds - Quality Control**

**Batch BNH0287 - 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
<b>Blank (BNH0287-BLK1)</b>			Prepared: 15-Aug-2025 Analyzed: 15-Aug-2025 16:36								
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>LCS (BNH0287-BS1)</b>			Prepared: 15-Aug-2025 Analyzed: 15-Aug-2025 16:40								
Iron	54	4.92	0.0360	mg/L	5.00		98.5	80-120			
Manganese	55	0.0249	0.00100	mg/L	0.0250		99.5	80-120			
<b>Duplicate (BNH0287-DUP1)</b>			<b>Source: 25H0059-01</b>			Prepared: 15-Aug-2025 Analyzed: 15-Aug-2025 17:03					
Iron	54	19.0	0.360	mg/L		19.6			3.16	20	D
Manganese	55	0.527	0.0100	mg/L		0.528			0.29	20	D
<b>Matrix Spike (BNH0287-MS1)</b>			<b>Source: 25H0059-01</b>			Prepared: 15-Aug-2025 Analyzed: 15-Aug-2025 17:08					
Iron	54	22.4	0.360	mg/L	5.00	19.6	56.2	75-125			*, D
Manganese	55	0.532	0.0100	mg/L	0.0250	0.528	15.5	75-125			HC, 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: 553-1550-067 Project Manager: Shannon Straws	<b>Reported:</b> 19-Aug-2025 10:17
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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
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	WA100006-018	05/12/2026
WADOE	WA Dept of Ecology	C558	08/31/2025



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

Project: South Park Landfill -Parametrix Water  
Project Number: 553-1550-067  
Project Manager: Shannon Straws

**Reported:**  
19-Aug-2025 10:17

### 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.
- 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 samples logged as 'Drinking Water'
- # Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.



**Analytical Resources, LLC**  
Analytical Chemists and Consultants  
Tukwila, WA

22 August 2025

Shannon Straws  
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)  
25H0088

Associated SDG ID(s)  
N/A

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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 enclosed 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.

Kelly Bottem, Client Services Manager



# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <b>25H0088</b>		Turn-around Requested:			Date: 08/06/2025											
ARI Client Company: City of Seattle/ Seattle Public Utilities		Phone: (206) 233-2629			Page: 1 of 1											
Client Contact: Shannon Straws, Laura Lee(Lblee@parametrix.com)					No. of Coolers: 1 Cooler Temps: 28°											
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested							Notes/Comments				
Client Project #: 553-1550-067		Samplers: T. Steimel   W. Yu   D. Favill			cis-1,2-DCE	Vinyl Chloride	Total FE, MN							Mark for MS/MSD		
Sample ID	Date	Time	Matrix	No. Containers												
SPL-GW-MW26-0825	8/6/2025	9:25	Water	13	6	6	1							MS/MSD		
SPL-GW-MW61-0825	8/6/2025	9:55	Water	7	3	3	1									
SPL-GW-MW24-0825	8/6/2025	10:25	Water	7	3	3	1									
SPL-GW-MW29-0825	8/6/2025	12:00	Water	7	3	3	1									
SPL-GW-MW31-0825	8/6/2025	13:35	Water	7	3	3	1									
SPL-GW-MW30-0825	8/6/2025	14:20	Water	7	3	3	1									
SPL-GW-MW82-0825	8/6/2025	-	Water	2	1	1										
Comments/Special Instructions					Relinquished by: (Signature) <i>[Signature]</i>			Received by: (Signature) <i>[Signature]</i>			Relinquished by: (Signature)			Received by: (Signature)		
					Printed Name: Duncan Favill			Printed Name: Roman			Printed Name:			Printed Name:		
					Company: SPU/K-H landfill			Company: ARLL			Company:			Company:		
					Date & Time: 8/6/2025 15:08			Date & Time: 08/06/25 1508			Date & Time:			Date & Time:		



**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

**Sample Retention Policy:** Unless specified by workorder 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 s



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: Shannon Straws

**Reported:**  
22-Aug-2025 11:56

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW26-0825	25H0088-01	Water	06-Aug-2025 09:25	06-Aug-2025 15:08
SPL-GW-MW61-0825	25H0088-02	Water	06-Aug-2025 09:55	06-Aug-2025 15:08
SPL-GW-MW24-0825	25H0088-03	Water	06-Aug-2025 10:25	06-Aug-2025 15:08
SPL-GW-MW29-0825	25H0088-04	Water	06-Aug-2025 12:00	06-Aug-2025 15:08
SPL-GW-MW31-0825	25H0088-05	Water	06-Aug-2025 13:35	06-Aug-2025 15:08
SPL-GW-MW30-0825	25H0088-06	Water	06-Aug-2025 14:20	06-Aug-2025 15:08
SPL-GW-MW82-0825	25H0088-07	Water	06-Aug-2025 00:00	06-Aug-2025 15:08



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: Shannon Straws

Reported:  
22-Aug-2025 11:56

## Work Order Case Narrative

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill  
**Work Order:** 25H0088

### Sample receipt

Samples as listed on the preceding page were received August 6, 2025 under ARI work order 25H0088. 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.

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.



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: Shannon Straws

**Reported:**

22-Aug-2025 11:56

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

25H0088

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>
25H0088-01 A	HDPE NM, 500 mL, 1:1 HNO3	<u>12</u>	<u>Passed</u>
25H0088-01 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 E	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 F	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 G	VOA Vial, Amber, 40 mL, HCL		
25H0088-01 H	VOA Vial, Amber, 40 mL		
25H0088-01 I	VOA Vial, Amber, 40 mL		
25H0088-01 J	VOA Vial, Amber, 40 mL		
25H0088-01 K	VOA Vial, Amber, 40 mL		
25H0088-01 L	VOA Vial, Amber, 40 mL		
25H0088-01 M	VOA Vial, Amber, 40 mL		
25H0088-02 A	HDPE NM, 500 mL, 1:1 HNO3	<u>12</u>	<u>Passed</u>
25H0088-02 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-02 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-02 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-02 E	VOA Vial, Amber, 40 mL		
25H0088-02 F	VOA Vial, Amber, 40 mL		
25H0088-02 G	VOA Vial, Amber, 40 mL		
25H0088-03 A	HDPE NM, 500 mL, 1:1 HNO3	<u>12</u>	<u>Passed</u>
25H0088-03 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-03 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-03 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-03 E	VOA Vial, Amber, 40 mL		
25H0088-03 F	VOA Vial, Amber, 40 mL		
25H0088-03 G	VOA Vial, Amber, 40 mL		
25H0088-04 A	HDPE NM, 500 mL, 1:1 HNO3	<u>12</u>	<u>Passed</u>
25H0088-04 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-04 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-04 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-04 E	VOA Vial, Amber, 40 mL		



WORK ORDER

25H0088

<b>Client:</b> Seattle Public Utilities	<b>Project Manager:</b> Kelly Bottem
<b>Project:</b> South Park Landfill -Parametrix Water	<b>Project Number:</b> 553-155-067

25H0088-04 F	VOA Vial, Amber, 40 mL		
25H0088-04 G	VOA Vial, Amber, 40 mL		
25H0088-05 A	HDPE NM, 500 mL, 1:1 HNO3	L2	Passed
25H0088-05 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-05 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-05 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-05 E	VOA Vial, Amber, 40 mL		
25H0088-05 F	VOA Vial, Amber, 40 mL		
25H0088-05 G	VOA Vial, Amber, 40 mL		
25H0088-06 A	HDPE NM, 500 mL, 1:1 HNO3	L2	Passed
25H0088-06 B	VOA Vial, Amber, 40 mL, HCL		
25H0088-06 C	VOA Vial, Amber, 40 mL, HCL		
25H0088-06 D	VOA Vial, Amber, 40 mL, HCL		
25H0088-06 E	VOA Vial, Amber, 40 mL		
25H0088-06 F	VOA Vial, Amber, 40 mL		
25H0088-06 G	VOA Vial, Amber, 40 mL		
25H0088-07 A	VOA Vial, Amber, 40 mL, HCL		
25H0088-07 B	VOA Vial, Amber, 40 mL		

NTW  
Preservation Confirmed By

8/6/25  
Date

# Cooler Receipt Form

ARI Client: City of Seattle/SPU

Project Name: South Park Landfill

COC No(s): \_\_\_\_\_ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: \_\_\_\_\_

Assigned ARI Job No: 25H00988

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 1508 28° Temp Gun ID#: 9908  
 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: [Signature] Date: 08/06/25 Time: 1508

**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: MW Date: 8/6/25 Time: 13:46 Labels checked by: MW

**\*\* 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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW26-0825**  
**25H0088-01 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 09:25
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 11:04
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0088-01 B
	Final Volume: 10 mL	
Prepared: 08/07/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.25	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	89.8	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW26-0825**  
**25H0088-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 09:25
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 11:59
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-01 H
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW26-0825**  
**25H0088-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/06/2025 09:25
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0367	Analyzed: 08/20/2025 19:54
Sample Preparation:	Prepared: 08/20/2025	Extract ID: 25H0088-01 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	7.35	mg/L	D
Manganese	7439-96-5	20	0.0200	0.0895	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW61-0825**  
**25H0088-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 09:55
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 11:26
Sample Preparation:	Prepared: 08/07/2025	Extract ID: 25H0088-02 B
	Sample Size: 10 mL	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.26	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	89.6	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW61-0825**  
**25H0088-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 09:55
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 12:20
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-02 E
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0204	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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: Shannon Straws

**Reported:**  
22-Aug-2025 11:56

**SPL-GW-MW61-0825**  
**25H0088-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B Sampled: 08/06/2025 09:55  
Instrument: ICPMS1 Analyst: HAL Analyzed: 08/20/2025 20:51

Sample Preparation: Preparation Method: REN - EPA 3010A M Extract ID: 25H0088-02 A 01  
Preparation Batch: BNH0367 Sample Size: 25 mL  
Prepared: 08/20/2025 Final Volume: 25 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	7.34	mg/L	D
Manganese	7439-96-5	50	0.0500	0.0916	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW24-0825**  
**25H0088-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 10:25
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 11:48
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0088-03 B
	Final Volume: 10 mL	
Prepared: 08/07/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	96.4	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW24-0825**  
**25H0088-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 10:25
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 12:41
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-03 E
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0524	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW24-0825**  
**25H0088-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/06/2025 10:25
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0367	Analyzed: 08/20/2025 20:56
Sample Preparation:	Prepared: 08/20/2025	Extract ID: 25H0088-03 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	100	3.60	22.3	mg/L	D
Manganese	7439-96-5	100	0.100	1.44	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW29-0825**  
**25H0088-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 12:00
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 12:10
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0088-04 B
	Final Volume: 10 mL	
Prepared: 08/07/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.4	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW29-0825**  
**25H0088-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 12:00
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 13:03
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-04 E
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.109	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW29-0825**  
**25H0088-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/06/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0367	Analyzed: 08/20/2025 21:01
Sample Preparation:	Prepared: 08/20/2025	Extract ID: 25H0088-04 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	21.1	mg/L	D
Manganese	7439-96-5	20	0.0200	0.634	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW31-0825**  
**25H0088-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 13:35
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 12:32
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25H0088-05 B
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.30	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	100	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW31-0825**  
**25H0088-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 13:35
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 13:24
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-05 E
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.835	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW31-0825**  
**25H0088-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sample Size: 25 mL	Sampled: 08/06/2025 13:35
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0367	Final Volume: 25 mL	Analyzed: 08/20/2025 21:06
Sample Preparation:	Prepared: 08/20/2025	Extract ID: 25H0088-05 A 01	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	50	1.80	19.6	mg/L	D
Manganese	7439-96-5	50	0.0500	0.831	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW30-0825**  
**25H0088-06 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 14:20
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 12:55
Sample Preparation:	Prepared: 08/07/2025	Extract ID: 25H0088-06 B
	Sample Size: 10 mL	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.64	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.5	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW30-0825**  
**25H0088-06 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 14:20
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 13:45
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-06 E
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.335	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	105	%	



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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW30-0825**  
**25H0088-06 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 08/06/2025 14:20
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNH0367	Analyzed: 08/20/2025 21:11
Sample Preparation:	Prepared: 08/20/2025	Extract ID: 25H0088-06 A 01
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	3.97	mg/L	D
Manganese	7439-96-5	20	0.0200	0.121	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: Shannon Straws	<b>Reported:</b> 22-Aug-2025 11:56
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**SPL-GW-MW82-0825**  
**25H0088-07 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 08/06/2025 00:00
Instrument: NT3 Analyst: LNH	Preparation Batch: BNH0109	Analyzed: 08/07/2025 13:17
Sample Preparation:	Prepared: 08/07/2025	Extract ID: 25H0088-07 A
	Sample Size: 10 mL	
	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
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	92.9	%	



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**SPL-GW-MW82-0825**  
**25H0088-07 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 08/06/2025 00:00
Instrument: NT16 Analyst: LTN	Analyzed: 08/07/2025 11:38
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25H0088-07 B
Preparation Batch: BNH0117	Sample Size: 10 mL
Prepared: 08/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	98.1	%	



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**Reported:**  
22-Aug-2025 11:56

**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - Quality Control**

**Batch BNH0109 - EPA 8260D in Water**

Instrument: NT3 Analyst: LNH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0109-BLK2)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 08:51						
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	4.58		ug/L	5.00		91.6	80-129			
<b>LCS (BNH0109-BS2)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 07:22						
cis-1,2-Dichloroethene	9.70	0.20	ug/L	10.0		97.0	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.58		ug/L	5.00		91.6	80-129			
<b>LCS Dup (BNH0109-BSD2)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 08:07						
cis-1,2-Dichloroethene	9.58	0.20	ug/L	10.0		95.8	80-121	1.30	30	
Surrogate: 1,2-Dichloroethane-d4	4.76		ug/L	5.00		95.3	80-129			
<b>Matrix Spike (BNH0109-MS1)</b>				<b>Source: 25H0088-01</b>		Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 14:01				
cis-1,2-Dichloroethene	9.73	0.20	ug/L	10.0	0.25	94.8	80-121			
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	5.00	4.49	99.0	80-129			

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

<b>Matrix Spike Dup (BNH0109-MSD1)</b>				<b>Source: 25H0088-01</b>		Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 14:23				
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0	0.25	98.1	80-121	3.30	30	
Surrogate: 1,2-Dichloroethane-d4	4.95		ug/L	5.00	4.49	99.0	80-129			

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



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**Reported:**  
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**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - SIM - Quality Control**

**Batch BNH0117 - EPA 8260D-SIM in Water**

Instrument: NT16 Analyst: LTN

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNH0117-BLK1)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 10:32						
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5320		ug/L	5000		106	80-129			
<b>LCS (BNH0117-BS1)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 09:50						
Vinyl chloride	2.07	0.0200	ug/L	2.00		104	62-141			
Surrogate: 1,2-Dichloroethane-d4	5270		ug/L	5000		105	80-129			
<b>LCS Dup (BNH0117-BSD1)</b>				Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 10:11						
Vinyl chloride	2.15	0.0200	ug/L	2.00		108	62-141	3.66	30	
Surrogate: 1,2-Dichloroethane-d4	5380		ug/L	5000		108	80-129			
<b>Matrix Spike (BNH0117-MS1)</b>				Source: 25H0088-01 Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 14:07						
Vinyl chloride	2.35	0.0200	ug/L	2.00	ND	117	62-141			
Surrogate: 1,2-Dichloroethane-d4	5380		ug/L	5000	5100	108	80-129			

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

<b>Matrix Spike Dup (BNH0117-MSD1)</b>				Source: 25H0088-01 Prepared: 07-Aug-2025 Analyzed: 07-Aug-2025 14:28						
Vinyl chloride	2.31	0.0200	ug/L	2.00	ND	115	62-141	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	5360		ug/L	5000	5100	107	80-129			

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



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**Analysis by: Analytical Resources, LLC**

**Metals and Metallic Compounds - Quality Control**

**Batch BNH0367 - 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
<b>Blank (BNH0367-BLK1)</b>						Prepared: 20-Aug-2025 Analyzed: 20-Aug-2025 18:28					
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>LCS (BNH0367-BS1)</b>						Prepared: 20-Aug-2025 Analyzed: 20-Aug-2025 18:33					
Iron	54	5.24	0.0360	mg/L	5.00		105	80-120			
Manganese	55	0.0264	0.00100	mg/L	0.0250		106	80-120			
<b>Duplicate (BNH0367-DUP1)</b>						Source: 25H0088-01 Prepared: 20-Aug-2025 Analyzed: 20-Aug-2025 19:59					
Iron	54	7.39	0.720	mg/L		7.35			0.54	20	D
Manganese	55	0.0903	0.0200	mg/L		0.0895			0.91	20	D
<b>Matrix Spike (BNH0367-MS1)</b>						Source: 25H0088-01 Prepared: 20-Aug-2025 Analyzed: 20-Aug-2025 20:04					
Iron	54	12.1	0.720	mg/L	5.00	7.35	94.2	75-125			D
Manganese	55	0.114	0.0200	mg/L	0.0250	0.0895	98.4	75-125			D

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

<b>Matrix Spike Dup (BNH0367-MSD1)</b>						Source: 25H0088-01 Prepared: 20-Aug-2025 Analyzed: 20-Aug-2025 20:09					
Iron	54	12.3	0.720	mg/L	5.00	7.35	99.5	75-125	2.18	20	D
Manganese	55	0.119	0.0200	mg/L	0.0250	0.0895	118	75-125	4.26	20	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  
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	WA100006-018	05/12/2026
WADOE	WA Dept of Ecology	C558	06/30/2026



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**Notes and Definitions**

- D The reported value is from a dilution
- J Estimated concentration value detected below the reporting limit.
- 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 samples logged as 'Drinking Water'
- # Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.