

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 Fourth Quarter 2025 Progress Report

Dear Ryan:

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

## General Activities During the 2025 Fourth 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 earlier in 2025, resulting in water service being shut off. Repair or abandonment of the leaking water line will occur during construction of STS Phase II.
- Three waste audits were performed on the SRDS property during the fourth 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 vacated the property earlier in 2025. Avis became the new tenant on the former Amazon lot. MedLog began leasing approximately 3 acres of the former First Student lot beginning October 1.
- The previously vacant on-site buildings were replaced with one office trailer in September 2025. Two indoor methane monitors were installed in the new building on October 30, 2025, and were inspected during the quarterly operation and maintenance visit conducted in December 2025.

### Overall Settlement Parcels

- **Fourth Quarter Compliance Monitoring**
  - SPU staff completed the fourth 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.



- The following summarizes fourth quarter monitoring results and response actions related to elevated methane detected at supplemental gas probe GP-32S:
  - GP-32S, a new supplemental gas probe, was measured above the regulatory action level of 5% methane by volume (lower explosive limit, LEL) during the fourth quarter perimeter gas monitoring event conducted on October 28, 2025. Required trigger actions specified in the Cleanup Action Plan were implemented, including agency notification, initiation of daily probe monitoring, and indoor ambient air monitoring at the adjacent building. A technical memorandum evaluating the methane exceedance and providing recommendations was submitted to Ecology on December 1, 2025.
  - Indoor ambient air monitoring was conducted at the adjacent building on a weekly basis following the GP-32S methane exceedance. Measured indoor air methane concentrations were below 100 parts per million by volume (ppmv), meeting the regulatory performance criterion and confirming that conditions are protective of human health.
- **Cap Inspections**
  - The 2025 mid-year cap inspection was conducted in October. A report was prepared and is currently under review by the property owners.

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

Monitoring at gas probe GP-32S exceeded the Cleanup Action Plan trigger level of 5% methane by volume, requiring initiation of daily monitoring. Beginning December 11, 2025, recent heavy rainfall resulted in a rise in the groundwater table above the screened interval of the probe, preventing collection of meaningful landfill gas measurements. A request was submitted to Ecology for a temporary reduction in monitoring frequency from daily to weekly while the probe remains submerged. Ecology approved the temporary reduction in monitoring frequency. Indoor ambient air monitoring at the adjacent building has continued during this period.

Although the regulatory requirement for indoor air monitoring has been met, weekly indoor air monitoring has continued at tenant request. Based on consistently low methane concentrations, the tenant has recently indicated that reducing indoor air monitoring frequency to monthly is acceptable.

## Data Summary

### Perimeter Gas Probes Monitoring

**Monitoring Date:** October 28, 2025

**Conducted By:** SPU

One probe exceeded the regulatory action limit of 5% methane by volume significantly. Methane was detected only at the following locations:



Probe	CH4 (% by volume)	Blocked	Comments
GP-27	0.2%	No	Below trigger values
GP-32S	66.4%	No	One probe exceeded the regulatory action limit of 5% methane by volume.

The elevated methane concentration at GP-32S was evaluated in detail in the technical memorandum submitted to Ecology on December 1, 2025.

Monitoring data are provided in the attached records.

**Groundwater Monitoring**

**Monitoring Dates:** November 3-5, 2025

**Conducted By:** SPU

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

Data validation for the 2025 fourth quarter compliance monitoring event is complete. A trigger assessment report for vinyl chloride for the 2025 first quarter through fourth quarter monitoring events will be reported to Ecology in January.

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. These scope changes resulted in a significant number of comments to the 90% permit design submittal from the Seattle Department of Construction and Inspections. The final design is now anticipated to be completed in the second quarter of 2026.
- No waste audits are anticipated for the first quarter of 2026.

**CenterPoint Property**

- Continued remote monitoring of the landfill gas system blowers.
- Complete the fourth quarter 2025 operation and maintenance of the landfill gas system.
- Installation of interior fencing to separate larger lot (formerly occupied by First Student) into two lots and installation of new gate on 3 acre area currently leased by Medlog.

**Overall Settlement Parcels**

- Continue implementation of Ecology-approved actions related to GP-32S, including modified monitoring frequency while the probe remains submerged, along with ongoing indoor ambient air monitoring at tenant request.



- SPU will conduct the first quarter 2026 compliance monitoring.
- Prepare an installation report for the supplemental gas probes.
- Conduct the 2026 annual cap inspection in the spring and verify completion of maintenance by property owners.
- Prepare the 2025 annual report for submittal to Ecology by March 31.

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, Fourth Quarter 2025
- 2 Landfill Gas and Groundwater Compliance Monitoring Field Sheets, Fourth Quarter 2025
- 3 Fourth Quarter 2025 Groundwater Laboratory Data

# **Attachment 1**

Draft Groundwater Quality  
Data Summary,  
Fourth Quarter 2025

Groundwater Quality Data Summary, Fourth 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-27	MW-31 <sup>1,2</sup>	MW-32 <sup>3</sup>	MW-33 <sup>3</sup>	MW-60 (MW-33 Dup)	MW-08	MW-61 (MW-08 Dup)	MW-10	MW-18 <sup>3</sup>	MW-24	MW-80	MW-81	MW-82
11/4/25	11/4/25	11/5/25	11/4/25	11/5/25	11/5/25	11/4/25	11/4/25	11/3/25	11/3/25	11/3/25	11/4/25	11/5/25	11/3/25	11/5/25	11/3/25	11/4/25	11/5/25				
<b>Field Parameters</b>																					
Temperature	C		15.4	15.8	12.8	15.2	14.2	13.3	13.5	14.4	13.8	15.0	--	13.1	--	14.2	14.2	13.2	--	--	--
Dissolved Oxygen	mg/L		1.04	0.18	0.11	0.19	0.14	0.18	0.17	0.13	0.11	0.19	--	0.17	--	0.10	0.23	0.10	--	--	--
Specific Conductivity	µS/cm		441.3	599.0	699.0	482.7	1154.0	329.7	589.0	511.0	827.0	122.5	--	883.0	--	1513.0	583.0	1011.0	--	--	--
pH	units		6.19	6.76	6.73	6.40	6.67	6.11	6.44	6.43	6.67	6.69	--	6.71	--	6.85	6.63	6.55	--	--	--
Redox	mv		119.8	-48.8	-79.9	-26.4	-86.9	39.1	-44.7	-64.3	-93.1	-110.1	--	-72.9	--	-113.7	-74.9	-52.3	--	--	--
Turbidity	NTU		1.89	9.73	1.39	2.46	1.28	3.30	3.04	6.58	8.56	4.00	--	1.35	--	0.68	1.62	0.26	--	--	--
<b>Metals</b>																					
Iron, Total	mg/L	27 A-Zone	0.372	3.39	16.6	6.72	27.3	8.35	19.5	17.8	12.3	14.1	13.5	--	--	--	--	--	--	--	--
		31 B-Zone	--	--	--	--	--	--	--	--	--	--	--	--	13.0	12.7	28.9	13.5	21.8	--	--
Manganese, Total	mg/L	2.2	0.0305	0.873	0.509	0.135	2.56	0.120	0.543	0.757	1.09	1.50	1.45	0.711	0.699	2.03	0.657	1.32	--	--	--
<b>Volatile Organic Compounds</b>																					
Vinyl Chloride	µg/L	0.29	0.0200 U	0.0200 U	0.0382	0.215	0.408	0.0263	0.0473	0.586	0.217	0.173	0.180	0.0425	0.0394	0.242	0.0430	0.0402	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	0.27	0.38	0.20 U	0.20 U	0.26	0.42	0.20 U	0.20 U	0.20 U	0.20 U	0.88	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,  
Fourth Quarter 2025

**South Park Landfill  
Fourth 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	10/28/2025	9:13	-0.02	0.0	1.9	19.5	78.6	N	30.22
SP00GP33	10/28/2025	9:28	-0.03	0.0	2.6	18.0	79.4	N	30.23
SP00GP37	10/28/2025	9:44	0.00	0.0	9.0	12.1	78.9	N	30.22
SP00GP38	10/28/2025	9:51	0.01	0.0	15.7	3.9	80.4	N	30.22
SP00GP11	10/28/2025	10:05	0.01	0.0	1.5	21.1	77.4	N	30.23
SPOGP11S	10/28/2025	10:08	0.01	0.0	1.2	19.9	78.9	N	30.23
SP00GP13	10/28/2025	10:16	-14.21	0.0	4.9	12.9	82.2	Y	30.23
SPOGP13S	10/28/2025	10:19	-0.01	0.0	2.2	19.9	77.9	N	30.17
SP00GP03	10/28/2025	10:28	0.02	0.0	5.6	14.7	79.7	N	30.23
SP00GP32	10/28/2025	10:34	1.20	0.0	0.3	20.5	79.2	Y	30.24
SPOGP32S	10/28/2025	10:39	0.00	66.4	16.7	0.0	16.9	N	30.24
SP00GP15	10/28/2025	11:09	3.41	0.0	6.8	10.1	83.1	N	30.26
SPOGP15S	10/28/2025	11:19	-0.01	0.0	2.4	18.6	79.0	N	30.25
SP00GP31	10/28/2025	11:30	-0.01	0.0	8.4	6.9	84.7	N	30.24
SP00GP16	10/28/2025	11:44	0.01	0.0	11.1	7.7	81.2	N	30.25
SP00GP29	10/28/2025	11:51	-0.04	0.0	15.4	0.0	84.6	N	30.24
SP00GP28	10/28/2025	11:57	-3.49	0.0	0.1	21.1	78.8	N	30.25
SP00GP27	10/28/2025	12:05	0.02	0.2	14.1	0.1	85.6	N	30.25
SP00GP09	10/28/2025	12:16	-0.02	0.0	4.1	17.6	78.3	N	30.26
SP00GP07	10/28/2025	12:26	-0.02	0.0	2.2	18.7	79.1	N	30.25
SP00GP23	10/28/2025	12:40	0.00	0.0	7.0	14.7	78.3	N	30.25

GEM™5000; G5 V1\_15\_12; LSGAM:6\_0\_20160627; {23023021373}

# Water Level Measurement Field Report

DATE:	11/03/2025	JOB NO. 553-1550-067			
PROJECT: South Park Landfill		CLIENT: Seattle Public Utilities			
LOCATION: Seattle, WA					
WEATHER	TEMP	47	° at	8:48	AM
Cloudy		48	° at	10:18	PM
PRESENT AT SITE	T. Steimel	D. Favill	W. Yu		

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	9:20	5.28		TOC	15.3	10 - 15	1.52
MW-14	9:26	2.87		TOC	21.8	11.5 - 21.5	0.8
MW-29	9:36	8.49		TOC	30	20 - 30	-0.29
MW-18	9:41	15.76		TOC	40.4	30 - 40	1.25
MW-25	9:11	14.14		TOC	27	22 - 27	2.79
MW-32	9:00	11.04		TOC	24	19 - 24	-0.44
MW-33	8:56	11.30		TOC	25	20 - 25	-0.47
MW-26	10:06	10.02		TOC	25	15 - 25	2.39
MW-27	10:13	8.79		TOC	20	10 - 20	2.04
MW-10	9:09	13.39		TOC	45	35 - 45	1.65
MW-24	10:04	9.25		TOC	45.3	35 - 45	1.56
MW-08	10:11	8.84		TOC	45.6	35.5 - 45.5	1.88
MW-30	9:56	10.84		TOC	13	8 - 13	-0.53
MW-31	9:54	11.31		TOC	23	18 - 23	-0.46

Comments:

TOC – top of PVC casing

SG – staff gauge

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





























# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:		Turn-around Requested:			Date:			11/03/2025			
ARI Client Company:		Phone:			Page:			1 of 1			
City of Seattle/ Seattle Public Utilities		(206) 233-2629			No. of Coolers:			Cooler Temps: 5 1			
Client Contact:					Analysis Requested			Notes/Comments			
Shannon Straws, Laura Lee(Lblee@parametrix.com)											
Client Project Name:											
South Park Landfill - Groundwater Sampling											
Client Project #:		Samplers:			cis-1,2-DCE	Vinyl Chloride	Total FE, MN				Mark for MS/MSD
553-1550-067		T. Steimel	D. Favill	W. Yu							
Sample ID	Date	Time	Matrix	No. Containers							
SPL-GW-MW18-1125	11/3/2025	11:15	Water	7	3	3	1				
SPL-GW-MW33-1125	11/3/2025	12:25	Water	13	6	6	1				MS/MSD
SPL-GW-MW60-1125	11/3/2025	12:55	Water	7	3	3	1				
SPL-GW-MW32-1125	11/3/2025	13:45	Water	7	3	3	1				
SPL-GW-MW80-1125	11/3/2025		Water	2	1	1					
Comments/Special Instructions											
Relinquished by:		Received by:			Relinquished by:			Received by:			
(Signature)		(Signature)			(Signature)			(Signature)			
Printed Name:		Printed Name:			Printed Name:			Printed Name:			
Wilson Yu		Tatiana Taylor									
Company:		Company:			Company:			Company:			
SPU/K-H landfill		ARI									
Date & Time:		Date & Time:			Date & Time:			Date & Time:			
11/3/2025 14:30		11/3/25 14:30									



**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

# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:	Date:	11/04/2025
ARI Client Company:	Phone:	Page:	1 of 1
City of Seattle/ Seattle Public Utilities			
(206) 233-2629			
Client Contact:		No. of Coolers:	Cooler Temps:
Shannon Straws, Laura Lee(Lblee@parametrix.com)		5-9°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:					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	D. Favill	W. Yu											
Sample ID	Date	Time	Matrix	No. Containers										
SPL-GW-MW14-1125	11/4/2025	8:55	Water	7	3	3	1							
SPL-GW-MW12-1125	11/4/2025	10:00	Water	7	3	3	1							
SPL-GW-MW31-1125	11/4/2025	11:30	Water	7	3	3	1							
SPL-GW-MW30-1125	11/4/2025	12:15	Water	7	3	3	1							
SPL-GW-MW08-1125	11/4/2025	13:20	Water	13	6	6	1							MS/MSD
SPL-GW-MW61-1125	11/4/2025	13:50	Water	7	3	3	1							
SPL-GW-MW27-1125	11/4/2025	14:20	Water	7	3	3	1							
SPL-GW-MW81-1125	11/4/2025		Water	2	1	1								

Comments/Special Instructions	Relinquished by:	Received by:	Relinquished by:	Received by:
	(Signature)	(Signature)	(Signature)	(Signature)
	Printed Name:	Printed Name:	Printed Name:	Printed Name:
	Wilson Yu	Sarah Specter		
Company:	Company:	Company:	Company:	
SPU/K-H landfill	ARLLC			
Date & Time:	Date & Time:	Date & Time:	Date & Time:	
11/4/2025 14:56	11/4/2025 14:56			

**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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# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested:	Date:
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: 4.5°



**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:					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	D. Favill	W. Yu											
Sample ID	Date	Time	Matrix	No. Containers										
SPL-GW-MW25-1125	11/5/2025	9:05	Water	7	3	3	1							
SPL-GW-MW10-1125	11/5/2025	9:55	Water	7	3	3	1							
SPL-GW-MW29-1125	11/5/2025	11:00	Water	7	3	3	1							
SPL-GW-MW24-1125	11/5/2025	12:40	Water	7	3	3	1							
SPL-GW-MW26-1125	11/5/2025	13:50	Water	7	3	3	1							
SPL-GW-MW82-1125	11/5/2025		Water	2	1	1								

Comments/Special Instructions	Relinquished by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Wilson Yu	Printed Name: Roxan	Printed Name:	Printed Name:
	Company: SPU/K-H landfill	Company: ARUC	Company:	Company:
	Date & Time: 11/5/2025 14:30	Date & Time: 11/05/25 1430	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

# **Attachment 3**

Fourth Quarter 2025

Groundwater Laboratory Data



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

18 November 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)  
 25K0051

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>25K0051</b>		Turn-around Requested:			Date: 11/03/2025									
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: Cooler Temps: <b>5 1</b>									
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested							Notes/Comments		
Client Project #: 553-1550-067		Samplers: T. Steimel   D. Favill   W. Yu			cis-1,2-DCE	Vinyl Chloride	Total FE, MN							Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers										
SPL-GW-MW18-1125	11/3/2025	11:15	Water	7	3	3	1							
SPL-GW-MW33-1125	11/3/2025	12:25	Water	13	6	6	1							MS/MSD
SPL-GW-MW60-1125	11/3/2025	12:55	Water	7	3	3	1							
SPL-GW-MW32-1125	11/3/2025	13:45	Water	7	3	3	1							
SPL-GW-MW80-1125	11/3/2025		Water	2	1	1								
Comments/Special Instructions					Relinquished by: (Signature) <i>WJY</i>		Received by: (Signature) <i>Tatiane Taylor</i>		Relinquished by: (Signature)		Received by: (Signature)			
					Printed Name: Wilson Yu		Printed Name: Tatiane Taylor		Printed Name:		Printed Name:			
					Company: SPU/K-H landfill		Company: ARI		Company:		Company:			
					Date & Time: 11/3/2025 14:30		Date & Time: 11/3/25 14:30		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: Min-Soon Yim

**Reported:**  
18-Nov-2025 08:50

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW18-1125	25K0051-01	Water	03-Nov-2025 11:15	03-Nov-2025 14:30
SPL-GW-MW33-1125	25K0051-02	Water	03-Nov-2025 12:25	03-Nov-2025 14:30
SPL-GW-MW60-1125	25K0051-03	Water	03-Nov-2025 12:55	03-Nov-2025 14:30
SPL-GW-MW32-1125	25K0051-04	Water	03-Nov-2025 13:45	03-Nov-2025 14:30
SPL-GW-MW80-1125	25K0051-05	Water	03-Nov-2025 11:15	03-Nov-2025 14:30



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:  
18-Nov-2025 08:50

## Work Order Case Narrative

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill -Parametrix Water  
**Work Order:** 25K0051

### Sample receipt

Samples as listed on the preceding page were received 03-Nov-2025 14:30 under ARI work order 25K0051. 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: Min-Soon Yim

**Reported:**

18-Nov-2025 08:50

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

25K0051

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>
25K0051-01 A	VOA Vial, Clear, 40 mL, HCL		
25K0051-01 B	VOA Vial, Clear, 40 mL, HCL		
25K0051-01 C	VOA Vial, Clear, 40 mL, HCL		
25K0051-01 D	VOA Vial, Amber, 40 mL		
25K0051-01 E	VOA Vial, Amber, 40 mL		
25K0051-01 F	VOA Vial, Amber, 40 mL		
25K0051-01 G	HDPE NM, 250mL HNO3	<u>L2P</u>	
25K0051-02 A	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 B	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 C	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 D	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 E	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 F	VOA Vial, Clear, 40 mL, HCL		
25K0051-02 G	VOA Vial, Amber, 40 mL		
25K0051-02 H	VOA Vial, Amber, 40 mL		
25K0051-02 I	VOA Vial, Amber, 40 mL		
25K0051-02 J	VOA Vial, Amber, 40 mL		
25K0051-02 K	VOA Vial, Amber, 40 mL		
25K0051-02 L	VOA Vial, Amber, 40 mL		
25K0051-02 M	HDPE NM, 250mL HNO3	<u>L2P</u>	
25K0051-03 A	VOA Vial, Clear, 40 mL, HCL		
25K0051-03 B	VOA Vial, Clear, 40 mL, HCL		
25K0051-03 C	VOA Vial, Clear, 40 mL, HCL		
25K0051-03 D	VOA Vial, Amber, 40 mL		
25K0051-03 E	VOA Vial, Amber, 40 mL		
25K0051-03 F	VOA Vial, Amber, 40 mL		
25K0051-03 G	HDPE NM, 250mL HNO3	<u>L2P</u>	
25K0051-04 A	VOA Vial, Clear, 40 mL, HCL		
25K0051-04 B	VOA Vial, Clear, 40 mL, HCL		
25K0051-04 C	VOA Vial, Clear, 40 mL, HCL		
25K0051-04 D	VOA Vial, Amber, 40 mL		
25K0051-04 E	VOA Vial, Amber, 40 mL		



**WORK ORDER**

25K0051

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

25K0051-04 F	VOA Vial, Amber, 40 mL
25K0051-04 G	HDPE NM, 250mL HNO3 <span style="float: right;">L2p</span>
25K0051-05 A	VOA Vial, Clear, 40 mL, HCL
25K0051-05 B	VOA Vial, Amber, 40 mL

SA  
Preservation Confirmed By

11/5/25  
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: 25K0051

Tracking No: \_\_\_\_\_ (NA)

**Preliminary Examination Phase:**

Were intact, properly signed and dated custody seals attached to the outside of the cooler? YES NO

Were custody papers included with the cooler? YES NO

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

Temperature of Cooler(s) (°C) Time 14:30 51 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: TT Date: 11/3/25 Time: 14:30

**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 SA 11/5

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: 11/4/25 Time: 0729 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> 18-Nov-2025 08:50
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**SPL-GW-MW18-1125**  
**25K0051-01 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/03/2025 11:15
Instrument: NT20 Analyst: LNH	Preparation Batch: BNK0049	Analyzed: 11/05/2025 13:39
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0051-01 A
	Final Volume: 10 mL	
Prepared: 11/05/2025		

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>112</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> 18-Nov-2025 08:50
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**SPL-GW-MW18-1125**  
**25K0051-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/03/2025 11:15
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 10:05
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0051-01 D
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0430	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> 18-Nov-2025 08:50
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**SPL-GW-MW18-1125**  
**25K0051-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sample Size: 25 mL	Sampled: 11/03/2025 11:15
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0175	Final Volume: 25 mL	Analyzed: 11/13/2025 01:29
Sample Preparation:	Prepared: 11/11/2025	Extract ID: 25K0051-01 G 01	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	20	0.720	13.5	mg/L	D
Manganese	7439-96-5	20	0.0200	0.657	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> 18-Nov-2025 08:50
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**SPL-GW-MW33-1125**  
**25K0051-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/03/2025 12:25
Instrument: NT20 Analyst: LNH	Preparation Batch: BNK0049	Analyzed: 11/05/2025 14:03
Sample Preparation:	Prepared: 11/05/2025	Extract ID: 25K0051-02 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	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	98.5	%	



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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 08:50
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**SPL-GW-MW33-1125**  
**25K0051-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/03/2025 12:25
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 10:25
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0051-02 G
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.173	ug/L	
<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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 08:50
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**SPL-GW-MW33-1125**  
**25K0051-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/03/2025 12:25
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0175	Analyzed: 11/13/2025 01:45
Sample Preparation:	Prepared: 11/11/2025	Extract ID: 25K0051-02 M 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	14.1	mg/L	D
Manganese	7439-96-5	50	0.0500	1.50	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> 18-Nov-2025 08:50
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**SPL-GW-MW60-1125**  
**25K0051-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/03/2025 12:55
Instrument: NT20 Analyst: LNH	Preparation Batch: BNK0049	Analyzed: 11/05/2025 14:26
Sample Preparation:	Prepared: 11/05/2025	Extract ID: 25K0051-03 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	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> 18-Nov-2025 08:50
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**SPL-GW-MW60-1125**  
**25K0051-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/03/2025 12:55
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 10:46
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0051-03 D
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.180	ug/L	
<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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 08:50
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**SPL-GW-MW60-1125**  
**25K0051-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/03/2025 12:55
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0175	Analyzed: 11/13/2025 01:34
Sample Preparation:	Prepared: 11/11/2025	Extract ID: 25K0051-03 G 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	13.5	mg/L	D
Manganese	7439-96-5	20	0.0200	1.45	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> 18-Nov-2025 08:50
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**SPL-GW-MW32-1125**  
**25K0051-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/03/2025 13:45
Instrument: NT20 Analyst: LNH	Preparation Batch: BNK0049	Analyzed: 11/05/2025 14:50
Sample Preparation:	Prepared: 11/05/2025	Extract ID: 25K0051-04 C
	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	0.42	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> 18-Nov-2025 08:50
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**SPL-GW-MW32-1125**  
**25K0051-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/03/2025 13:45
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 11:06
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0051-04 D
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.217	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> 18-Nov-2025 08:50
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**SPL-GW-MW32-1125**  
**25K0051-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/03/2025 13:45
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0175	Analyzed: 11/13/2025 01:39
Sample Preparation:	Prepared: 11/11/2025	Extract ID: 25K0051-04 G 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	12.3	mg/L	D
Manganese	7439-96-5	20	0.0200	1.09	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> 18-Nov-2025 08:50
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**SPL-GW-MW80-1125**  
**25K0051-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/03/2025 11:15
Instrument: NT20 Analyst: LNH	Preparation Batch: BNK0049	Analyzed: 11/05/2025 13:15
Sample Preparation:	Prepared: 11/05/2025	Extract ID: 25K0051-05 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 %	112	%	



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> 18-Nov-2025 08:50
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**SPL-GW-MW80-1125**  
**25K0051-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/03/2025 11:15
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 09:03
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0051-05 B
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	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>			<i>80-129 %</i>	<i>99.9</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> 18-Nov-2025 08:50
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**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - Quality Control**

**Batch BNK0049 - EPA 8260D in Water**

Instrument: NT20 Analyst: LNH

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNK0049-BLK2)</b>				Prepared: 05-Nov-2025 Analyzed: 05-Nov-2025 09:20						
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	7.33		ug/L	6.25		117	80-129			
<b>LCS (BNK0049-BS2)</b>				Prepared: 05-Nov-2025 Analyzed: 05-Nov-2025 07:45						
cis-1,2-Dichloroethene	10.8	0.20	ug/L	10.0		108	80-121			
Surrogate: 1,2-Dichloroethane-d4	6.90		ug/L	6.25		110	80-129			
<b>LCS Dup (BNK0049-BSD2)</b>				Prepared: 05-Nov-2025 Analyzed: 05-Nov-2025 08:33						
cis-1,2-Dichloroethene	9.85	0.20	ug/L	10.0		98.5	80-121	8.79	30	
Surrogate: 1,2-Dichloroethane-d4	6.90		ug/L	6.25		110	80-129			
<b>Matrix Spike (BNK0049-MS1)</b>				Source: 25K0051-02		Prepared: 05-Nov-2025 Analyzed: 05-Nov-2025 18:45				
cis-1,2-Dichloroethene	10.4	0.20	ug/L	10.0	ND	104	80-121			
Surrogate: 1,2-Dichloroethane-d4	5.88		ug/L	6.25	6.16	94.0	80-129			

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

<b>Matrix Spike Dup (BNK0049-MSD1)</b>				Source: 25K0051-02		Prepared: 05-Nov-2025 Analyzed: 05-Nov-2025 19:08				
cis-1,2-Dichloroethene	8.98	0.20	ug/L	10.0	ND	89.8	80-121	14.80	30	
Surrogate: 1,2-Dichloroethane-d4	5.11		ug/L	6.25	6.16	81.7	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:**  
18-Nov-2025 08:50

**Analysis by: Analytical Resources, LLC**

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

**Batch BNK0111 - 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 (BNK0111-BLK1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:37								
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	6330		ug/L	6250		101	80-129			
<b>LCS (BNK0111-BS1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 07:56								
Vinyl chloride	2.01	0.0200	ug/L	2.00		100	62-141			
Surrogate: 1,2-Dichloroethane-d4	6600		ug/L	6250		106	80-129			
<b>LCS Dup (BNK0111-BSD1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:17								
Vinyl chloride	2.35	0.0200	ug/L	2.00		118	62-141	15.80	30	
Surrogate: 1,2-Dichloroethane-d4	6660		ug/L	6250		107	80-129			
<b>Matrix Spike (BNK0111-MS1)</b>		<b>Source: 25K0051-02</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 15:34						
Vinyl chloride	2.27	0.0200	ug/L	2.00	0.173	105	62-141			
Surrogate: 1,2-Dichloroethane-d4	6730		ug/L	6250	6410	108	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
<b>Matrix Spike Dup (BNK0111-MSD1)</b>		<b>Source: 25K0051-02</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 15:55						
Vinyl chloride	2.40	0.0200	ug/L	2.00	0.173	111	62-141	5.57	30	
Surrogate: 1,2-Dichloroethane-d4	6640		ug/L	6250	6410	106	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> 18-Nov-2025 08:50
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**Analysis by: Analytical Resources, LLC**

**Metals and Metallic Compounds - Quality Control**

**Batch BNK0175 - 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 (BNK0175-BLK1)</b>						Prepared: 11-Nov-2025 Analyzed: 11-Nov-2025 22:04					
Manganese	55	ND	0.00100	mg/L							U
<b>Blank (BNK0175-BLK2)</b>						Prepared: 11-Nov-2025 Analyzed: 13-Nov-2025 01:18					
Iron	54	ND	0.0360	mg/L							U
<b>LCS (BNK0175-BS1)</b>						Prepared: 11-Nov-2025 Analyzed: 11-Nov-2025 22:08					
Manganese	55	0.0243	0.00100	mg/L	0.0250		97.1	80-120			
<b>LCS (BNK0175-BS2)</b>						Prepared: 11-Nov-2025 Analyzed: 13-Nov-2025 01:24					
Iron	54	5.33	0.0360	mg/L	5.00		107	80-120			
<b>Duplicate (BNK0175-DUP2)</b>						Source: 25K0051-02 Prepared: 11-Nov-2025 Analyzed: 13-Nov-2025 01:50					
Iron	54	14.2	1.80	mg/L		14.1			0.52	20	D
Manganese	55	1.50	0.0500	mg/L		1.50			0.25	20	D
<b>Matrix Spike (BNK0175-MS2)</b>						Source: 25K0051-02 Prepared: 11-Nov-2025 Analyzed: 13-Nov-2025 01:55					
Iron	54	18.9	1.80	mg/L	5.00	14.1	95.8	75-125			D
Manganese	55	1.52	0.0500	mg/L	0.0250	1.50	67.8	75-125			HC, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
<b>Matrix Spike Dup (BNK0175-MSD2)</b>						Source: 25K0051-02 Prepared: 11-Nov-2025 Analyzed: 13-Nov-2025 02:01					
Iron	54	19.8	1.80	mg/L	5.00	14.1	114	75-125	4.67	20	D
Manganese	55	1.57	0.0500	mg/L	0.0250	1.50	278	75-125	3.40	20	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: 553-155-067 Project Manager: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 08:50
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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	06/30/2026



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:  
18-Nov-2025 08:50

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

18 November 2025

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

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

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)  
25K0094

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.

A handwritten signature in blue ink that reads "Kelly Bottem".

Kelly Bottem, Client Services Manager



# Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: <b>25K0094</b>		Turn-around Requested:			Date: 11/04/2025								
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: Cooler: <b>5-9°C</b> Temps:								
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested								
Client Project #: 553-1550-067		Samplers: T. Steimel   D. Favill   W. Yu			cis-1,2-DCE	Vinyl Chloride	Total FE, MN						Notes/Comments  Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers									
SPL-GW-MW14-1125	11/4/2025	8:55	Water	7	3	3	1						
SPL-GW-MW12-1125	11/4/2025	10:00	Water	7	3	3	1						
SPL-GW-MW31-1125	11/4/2025	11:30	Water	7	3	3	1						
SPL-GW-MW30-1125	11/4/2025	12:15	Water	7	3	3	1						
SPL-GW-MW08-1125	11/4/2025	13:20	Water	13	6	6	1						MS/MSD
SPL-GW-MW61-1125	11/4/2025	13:50	Water	7	3	3	1						
SPL-GW-MW27-1125	11/4/2025	14:20	Water	7	3	3	1						
SPL-GW-MW81-1125	11/4/2025		Water	2	1	1							
Comments/Special Instructions					Relinquished by: (Signature) 		Received by: (Signature) 		Relinquished by: (Signature)		Received by: (Signature)		
					Printed Name: Wilson Yu		Printed Name: Sarah Spector		Printed Name:		Printed Name:		
					Company: SPU/K-H landfill		Company: ARLLC		Company:		Company:		
					Date & Time: 11/4/2025 14:56		Date & Time: 11/4/2025 14:56		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: Min-Soon Yim

**Reported:**  
18-Nov-2025 09:04

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW14-1125	25K0094-01	Water	04-Nov-2025 08:55	04-Nov-2025 14:56
SPL-GW-MW12-1125	25K0094-02	Water	04-Nov-2025 10:00	04-Nov-2025 14:56
SPL-GW-MW31-1125	25K0094-03	Water	04-Nov-2025 11:30	04-Nov-2025 14:56
SPL-GW-MW30-1125	25K0094-04	Water	04-Nov-2025 12:15	04-Nov-2025 14:56
SPL-GW-MW08-1125	25K0094-05	Water	04-Nov-2025 13:20	04-Nov-2025 14:56
SPL-GW-MW61-1125	25K0094-06	Water	04-Nov-2025 13:50	04-Nov-2025 14:56
SPL-GW-MW27-1125	25K0094-07	Water	04-Nov-2025 14:20	04-Nov-2025 14:56
SPL-GW-MW81-1125	25K0094-08	Water	04-Nov-2025 08:55	04-Nov-2025 14:56



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: Min-Soon Yim

Reported:  
18-Nov-2025 09:04

## Work Order Case Narrative

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill -Parametrix Water  
**Work Order:** 25K0094

### Sample receipt

Samples as listed on the preceding page were received 04-Nov-2025 14:56 under ARI work order 25K0094. 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: 553-1550-067

Project Manager: Min-Soon Yim

**Reported:**

18-Nov-2025 09:04

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

25K0094

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#: _____
25K0094-01 A	HDPE NM, 250mL HNO3		L2P
25K0094-01 B	VOA Vial, Clear, 40 mL, HCL		
25K0094-01 C	VOA Vial, Clear, 40 mL, HCL		
25K0094-01 D	VOA Vial, Clear, 40 mL, HCL		
25K0094-01 E	VOA Vial, Amber, 40 mL		
25K0094-01 F	VOA Vial, Amber, 40 mL		
25K0094-01 G	VOA Vial, Amber, 40 mL		
25K0094-02 A	HDPE NM, 250mL HNO3		L2P
25K0094-02 B	VOA Vial, Clear, 40 mL, HCL		
25K0094-02 C	VOA Vial, Clear, 40 mL, HCL		
25K0094-02 D	VOA Vial, Clear, 40 mL, HCL		
25K0094-02 E	VOA Vial, Amber, 40 mL		
25K0094-02 F	VOA Vial, Amber, 40 mL		
25K0094-02 G	VOA Vial, Amber, 40 mL		
25K0094-03 A	HDPE NM, 250mL HNO3		L2P
25K0094-03 B	VOA Vial, Clear, 40 mL, HCL		
25K0094-03 C	VOA Vial, Clear, 40 mL, HCL		
25K0094-03 D	VOA Vial, Clear, 40 mL, HCL		
25K0094-03 E	VOA Vial, Amber, 40 mL		
25K0094-03 F	VOA Vial, Amber, 40 mL		
25K0094-03 G	VOA Vial, Amber, 40 mL		
25K0094-04 A	HDPE NM, 250mL HNO3		L2P
25K0094-04 B	VOA Vial, Clear, 40 mL, HCL		
25K0094-04 C	VOA Vial, Clear, 40 mL, HCL		
25K0094-04 D	VOA Vial, Clear, 40 mL, HCL		
25K0094-04 E	VOA Vial, Amber, 40 mL		
25K0094-04 F	VOA Vial, Amber, 40 mL		
25K0094-04 G	VOA Vial, Amber, 40 mL		
25K0094-05 A	HDPE NM, 250mL HNO3		L2P
25K0094-05 B	VOA Vial, Clear, 40 mL, HCL		
25K0094-05 C	VOA Vial, Clear, 40 mL, HCL		
25K0094-05 D	VOA Vial, Clear, 40 mL, HCL		



**WORK ORDER**

25K0094

<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

25K0094-05 E	VOA Vial, Clear, 40 mL, HCL	
25K0094-05 F	VOA Vial, Clear, 40 mL, HCL	
25K0094-05 G	VOA Vial, Clear, 40 mL, HCL	
25K0094-05 H	VOA Vial, Amber, 40 mL	
25K0094-05 I	VOA Vial, Amber, 40 mL	
25K0094-05 J	VOA Vial, Amber, 40 mL	
25K0094-05 K	VOA Vial, Amber, 40 mL	
25K0094-05 L	VOA Vial, Amber, 40 mL	
25K0094-05 M	VOA Vial, Amber, 40 mL	
25K0094-06 A	HDPE NM, 250mL HNO3	< 2P
25K0094-06 B	VOA Vial, Clear, 40 mL, HCL	
25K0094-06 C	VOA Vial, Clear, 40 mL, HCL	
25K0094-06 D	VOA Vial, Clear, 40 mL, HCL	
25K0094-06 E	VOA Vial, Amber, 40 mL	
25K0094-06 F	VOA Vial, Amber, 40 mL	
25K0094-06 G	VOA Vial, Amber, 40 mL	
25K0094-07 A	HDPE NM, 250mL HNO3	< 2P
25K0094-07 B	VOA Vial, Clear, 40 mL, HCL	
25K0094-07 C	VOA Vial, Clear, 40 mL, HCL	
25K0094-07 D	VOA Vial, Clear, 40 mL, HCL	
25K0094-07 E	VOA Vial, Amber, 40 mL	
25K0094-07 F	VOA Vial, Amber, 40 mL	
25K0094-07 G	VOA Vial, Amber, 40 mL	
25K0094-08 A	VOA Vial, Clear, 40 mL, HCL	
25K0094-08 B	VOA Vial, Clear, 40 mL	

Preservation Confirmed By \_\_\_\_\_

Date \_\_\_\_\_

Reviewed By \_\_\_\_\_

Date \_\_\_\_\_



# Cooler Receipt Form

ARI Client: Seattle Public Utilities

Project Name: South Park Landfill

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

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

Assigned ARI Job No: 25K0094

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 11:56 5.9°C Temp Gun ID#: 9708

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: Sarah Spector Date: 11-4-2025 Time: 14:56

**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 10/16/25

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

Samples Logged by: TT Date: 11/5/25 Time: 15:38 Labels checked by: TT

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

**Additional Notes, Discrepancies, & Resolutions:**

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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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW14-1125**  
**25K0094-01 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 08:55
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 14:20
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0094-01 C
	Final Volume: 10 mL	
Prepared: 11/07/2025		

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 %	103	%	



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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW14-1125**  
**25K0094-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 08:55
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 11:27
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-01 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	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: 553-1550-067 Project Manager: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW14-1125**  
**25K0094-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 08:55
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 22:55
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-01 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	3.39	mg/L	D
Manganese	7439-96-5	10	0.0100	0.873	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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW12-1125**  
**25K0094-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 10:00
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 14:42
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-02 C
	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 %	100	%	



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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW12-1125**  
**25K0094-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 10:00
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 11:47
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-02 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	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	%	



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**SPL-GW-MW12-1125**  
**25K0094-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 10:00
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 23:00
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-02 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	0.372	mg/L	D
Manganese	7439-96-5	10	0.0100	0.0305	mg/L	D



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**SPL-GW-MW31-1125**  
**25K0094-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 11:30
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 15:04
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-03 C
	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 %	102	%	



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**SPL-GW-MW31-1125**  
**25K0094-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 11:30
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 12:08
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-03 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.586	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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**SPL-GW-MW31-1125**  
**25K0094-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 11:30
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 23:06
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-03 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	17.8	mg/L	D
Manganese	7439-96-5	10	0.0100	0.757	mg/L	D



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**SPL-GW-MW30-1125**  
**25K0094-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 12:15
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 15:26
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-04 C
	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	0.27	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	



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**SPL-GW-MW30-1125**  
**25K0094-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 12:15
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 12:29
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-04 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.215	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	102	%	



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**SPL-GW-MW30-1125**  
**25K0094-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 12:15
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 23:52
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-04 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	6.72	mg/L	D
Manganese	7439-96-5	10	0.0100	0.135	mg/L	D



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**SPL-GW-MW08-1125**  
**25K0094-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Sampled: 11/04/2025 13:20
Instrument: NT3 Analyst: FCL	Analyzed: 11/07/2025 15:48
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-05 C
Preparation Batch: BNK0125	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	ND	ug/L	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	99.8	%	



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**SPL-GW-MW08-1125**  
**25K0094-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 13:20
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 12:49
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-05 H
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0425	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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**SPL-GW-MW08-1125**  
**25K0094-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 13:20
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 23:11
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-05 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	13.0	mg/L	D
Manganese	7439-96-5	10	0.0100	0.711	mg/L	D



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**SPL-GW-MW61-1125**  
**25K0094-06 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 13:50
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 16:11
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-06 C
	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 %	105	%	



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**SPL-GW-MW61-1125**  
**25K0094-06 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 13:50
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 13:10
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-06 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0394	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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**SPL-GW-MW61-1125**  
**25K0094-06 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 13:50
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/12/2025 23:57
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-06 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	12.7	mg/L	D
Manganese	7439-96-5	10	0.0100	0.699	mg/L	D



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**SPL-GW-MW27-1125**  
**25K0094-07 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 14:20
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 16:33
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-07 C
	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 %	103	%	



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: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**SPL-GW-MW27-1125**  
**25K0094-07 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 14:20
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 13:31
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-07 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0473	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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**SPL-GW-MW27-1125**  
**25K0094-07 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/04/2025 14:20
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0196	Analyzed: 11/13/2025 00:03
Sample Preparation:	Prepared: 11/12/2025	Extract ID: 25K0094-07 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	19.5	mg/L	D
Manganese	7439-96-5	10	0.0100	0.543	mg/L	D



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**SPL-GW-MW81-1125**  
**25K0094-08 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/04/2025 08:55
Instrument: NT3 Analyst: FCL	Preparation Batch: BNK0125	Analyzed: 11/07/2025 13:36
Sample Preparation:	Prepared: 11/07/2025	Extract ID: 25K0094-08 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 %	94.6	%	



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**SPL-GW-MW81-1125**  
**25K0094-08 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/04/2025 08:55
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 09:23
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0094-08 B
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	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 %	103	%	



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**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - Quality Control**

**Batch BNK0125 - EPA 8260D in Water**

Instrument: NT3 Analyst: FCL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNK0125-BLK1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 12:47								
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	5.88		ug/L	6.25		94.0	80-129			
<b>Blank (BNK0125-BLK2)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 13:09								
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	6.16		ug/L	6.25		98.6	80-129			
<b>LCS (BNK0125-BS1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 11:40								
cis-1,2-Dichloroethene	9.44	0.20	ug/L	10.0		94.4	80-121			
Surrogate: 1,2-Dichloroethane-d4	6.02		ug/L	6.25		96.4	80-129			
<b>LCS Dup (BNK0125-BSD1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 12:25								
cis-1,2-Dichloroethene	9.33	0.20	ug/L	10.0		93.3	80-121	1.14	30	
Surrogate: 1,2-Dichloroethane-d4	6.32		ug/L	6.25		101	80-129			
<b>Matrix Spike (BNK0125-MS1)</b>		<b>Source: 25K0094-05</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 22:49						
cis-1,2-Dichloroethene	9.42	0.20	ug/L	10.0	ND	94.2	80-121			
Surrogate: 1,2-Dichloroethane-d4	6.41		ug/L	6.25	6.24	102	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										
<b>Matrix Spike Dup (BNK0125-MSD1)</b>		<b>Source: 25K0094-05</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 23:11						
cis-1,2-Dichloroethene	10.1	0.20	ug/L	10.0	ND	101	80-121	7.00	30	
Surrogate: 1,2-Dichloroethane-d4	6.31		ug/L	6.25	6.24	101	80-129			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.										



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**Analysis by: Analytical Resources, LLC**

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

**Batch BNK0111 - 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 (BNK0111-BLK1)</b>				Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:37						
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	6330		ug/L	6250		101	80-129			
<b>LCS (BNK0111-BS1)</b>				Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 07:56						
Vinyl chloride	2.01	0.0200	ug/L	2.00		100	62-141			
Surrogate: 1,2-Dichloroethane-d4	6600		ug/L	6250		106	80-129			
<b>LCS Dup (BNK0111-BSD1)</b>				Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:17						
Vinyl chloride	2.35	0.0200	ug/L	2.00		118	62-141	15.80	30	
Surrogate: 1,2-Dichloroethane-d4	6660		ug/L	6250		107	80-129			
<b>Matrix Spike (BNK0111-MS2)</b>				Source: 25K0094-05 Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 16:16						
Vinyl chloride	2.36	0.0200	ug/L	2.00	0.0425	116	62-141			
Surrogate: 1,2-Dichloroethane-d4	6680		ug/L	6250	6450	107	80-129			

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

<b>Matrix Spike Dup (BNK0111-MSD2)</b>				Source: 25K0094-05 Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 16:36						
Vinyl chloride	2.39	0.0200	ug/L	2.00	0.0425	117	62-141	1.07	30	
Surrogate: 1,2-Dichloroethane-d4	6660		ug/L	6250	6450	106	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: 553-1550-067 Project Manager: Min-Soon Yim	<b>Reported:</b> 18-Nov-2025 09:04
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**Analysis by: Analytical Resources, LLC**

**Metals and Metallic Compounds - Quality Control**

**Batch BNK0196 - 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 (BNK0196-BLK1)</b>			Prepared: 12-Nov-2025 Analyzed: 12-Nov-2025 19:09								
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>Blank (BNK0196-BLK2)</b>			Prepared: 12-Nov-2025 Analyzed: 13-Nov-2025 20:36								
Iron	54	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>LCS (BNK0196-BS1)</b>			Prepared: 12-Nov-2025 Analyzed: 12-Nov-2025 19:14								
Iron	54	5.37	0.0360	mg/L	5.00		107	80-120			
Manganese	55	0.0249	0.00100	mg/L	0.0250		99.6	80-120			
<b>Duplicate (BNK0196-DUP1)</b>			<b>Source: 25K0094-05</b>		Prepared: 12-Nov-2025 Analyzed: 12-Nov-2025 23:16						
Iron	54	12.1	0.360	mg/L		13.0			7.12	20	D
Manganese	55	0.656	0.0100	mg/L		0.711			8.06	20	D
<b>Matrix Spike (BNK0196-MS1)</b>			<b>Source: 25K0094-05</b>		Prepared: 12-Nov-2025 Analyzed: 12-Nov-2025 23:22						
Iron	54	17.4	0.360	mg/L	5.00	13.0	87.5	75-125			D
Manganese	55	0.710	0.0100	mg/L	0.0250	0.711	-2.8	75-125			HC, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
<b>Matrix Spike Dup (BNK0196-MSD1)</b>			<b>Source: 25K0094-05</b>		Prepared: 12-Nov-2025 Analyzed: 12-Nov-2025 23:27						
Iron	54	17.1	0.360	mg/L	5.00	13.0	81.8	75-125	1.65	20	D
Manganese	55	0.710	0.0100	mg/L	0.0250	0.711	-2.9	75-125	0.01	20	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: Min-Soon Yim

Reported:  
18-Nov-2025 09:04

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

21 November 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)  
 25K0097

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>25K0097</b>		Turn-around Requested:			Date: 11/05/2025		 <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: 4.5°						
Client Project Name: South Park Landfill - Groundwater Sampling					Analysis Requested							Notes/Comments	
Client Project #: 553-1550-067		Samplers: T. Steimel   D. Favill   W. Yu			cis-1,2-DCE	Vinyl Chloride	Total FE, MN						Mark for MS/MSD
Sample ID	Date	Time	Matrix	No. Containers									
SPL-GW-MW25-1125	11/5/2025	9:05	Water	7	3	3	1						
SPL-GW-MW10-1125	11/5/2025	9:55	Water	7	3	3	1						
SPL-GW-MW29-1125	11/5/2025	11:00	Water	7	3	3	1						
SPL-GW-MW24-1125	11/5/2025	12:40	Water	7	3	3	1						
SPL-GW-MW26-1125	11/5/2025	13:50	Water	7	3	3	1						
SPL-GW-MW82-1125	11/5/2025		Water	2	1	1							
Comments/Special Instructions					Relinquished by: (Signature) 		Received by: (Signature) 		Relinquished by: (Signature)		Received by: (Signature)		
					Printed Name: Wilson Yu		Printed Name: Roxan		Printed Name:		Printed Name:		
					Company: SPU/K-H landfill		Company: ARUC		Company:		Company:		
					Date & Time: 11/5/2025 14:30		Date & Time: 11/05/25 1430		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



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:**  
21-Nov-2025 13:05

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SPL-GW-MW25-1125	25K0097-01	Water	05-Nov-2025 09:05	05-Nov-2025 14:30
SPL-GW-MW10-1125	25K0097-02	Water	05-Nov-2025 09:55	05-Nov-2025 14:30
SPL-GW-MW29-1125	25K0097-03	Water	05-Nov-2025 11:00	05-Nov-2025 14:30
SPL-GW-MW24-1125	25K0097-04	Water	05-Nov-2025 12:40	05-Nov-2025 14:30
SPL-GW-MW26-1125	25K0097-05	Water	05-Nov-2025 13:50	05-Nov-2025 14:30
SPL-GW-MW82-1125	25K0097-06	Water	05-Nov-2025 09:05	05-Nov-2025 14:30



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:  
21-Nov-2025 13:05

## Work Order Case Narrative

**Client:** Seattle Public Utilities  
**Project:** South Park Landfill -Parametrix Water  
**Work Order:** 25K0097

### Sample receipt

Samples as listed on the preceding page were received 05-Nov-2025 14:30 under ARI work order 25K0097. 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.

### 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.



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:**

21-Nov-2025 13:05

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



WORK ORDER

25K0097

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>
25K0097-01 A	HDPE NM, 250mL HNO3	L2P	
25K0097-01 B	VOA Vial, Clear, 40 mL, HCL		
25K0097-01 C	VOA Vial, Clear, 40 mL, HCL		
25K0097-01 D	VOA Vial, Clear, 40 mL, HCL		
25K0097-01 E	VOA Vial, Amber, 40 mL		
25K0097-01 F	VOA Vial, Amber, 40 mL		
25K0097-01 G	VOA Vial, Amber, 40 mL		
25K0097-02 A	HDPE NM, 250mL HNO3	L2P	
25K0097-02 B	VOA Vial, Clear, 40 mL, HCL		
25K0097-02 C	VOA Vial, Clear, 40 mL, HCL		
25K0097-02 D	VOA Vial, Clear, 40 mL, HCL		
25K0097-02 E	VOA Vial, Amber, 40 mL		
25K0097-02 F	VOA Vial, Amber, 40 mL		
25K0097-02 G	VOA Vial, Amber, 40 mL		
25K0097-03 A	HDPE NM, 250mL HNO3	L2P	
25K0097-03 B	VOA Vial, Clear, 40 mL, HCL		
25K0097-03 C	VOA Vial, Clear, 40 mL, HCL		
25K0097-03 D	VOA Vial, Clear, 40 mL, HCL		
25K0097-03 E	VOA Vial, Amber, 40 mL		
25K0097-03 F	VOA Vial, Amber, 40 mL		
25K0097-03 G	VOA Vial, Amber, 40 mL		
25K0097-04 A	HDPE NM, 250mL HNO3	L2P	
25K0097-04 B	VOA Vial, Clear, 40 mL, HCL		
25K0097-04 C	VOA Vial, Clear, 40 mL, HCL		
25K0097-04 D	VOA Vial, Clear, 40 mL, HCL		
25K0097-04 E	VOA Vial, Amber, 40 mL		
25K0097-04 F	VOA Vial, Amber, 40 mL		
25K0097-04 G	VOA Vial, Amber, 40 mL		
25K0097-05 A	HDPE NM, 250mL HNO3	L2P	
25K0097-05 B	VOA Vial, Clear, 40 mL, HCL		
25K0097-05 C	VOA Vial, Clear, 40 mL, HCL		
25K0097-05 D	VOA Vial, Clear, 40 mL, HCL		



**WORK ORDER**

25K0097

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

25K0097-05 E	VOA Vial, Amber, 40 mL
25K0097-05 F	VOA Vial, Amber, 40 mL
25K0097-05 G	VOA Vial, Amber, 40 mL
25K0097-06 A	VOA Vial, Clear, 40 mL, HCL
25K0097-06 B	VOA Vial, Clear, 40 mL

Preservation Confirmed By SA

Date 11/5/25



# 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: 25 K0097

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 1420 4-5° Temp Gun ID#: 9708

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: 11/05/25 Time: 1410

**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 10/16/25

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

Samples Logged by: SA Date: 11/5/25 Time: 1604 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> 21-Nov-2025 13:05
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**SPL-GW-MW25-1125**  
**25K0097-01 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 09:05
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 16:58
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0097-01 B
	Final Volume: 10 mL	
Prepared: 11/10/2025		

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.38	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	125	%	



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> 21-Nov-2025 13:05
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**SPL-GW-MW25-1125**  
**25K0097-01 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 09:05
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 13:51
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-01 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.408	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> 21-Nov-2025 13:05
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**SPL-GW-MW25-1125**  
**25K0097-01 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sample Size: 25 mL	Sampled: 11/05/2025 09:05
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0219	Final Volume: 25 mL	Analyzed: 11/14/2025 00:18
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-01 A 02	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	27.3	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> 21-Nov-2025 13:05
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**SPL-GW-MW25-1125**  
**25K0097-01RE1 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/05/2025 09:05
Instrument: ICPMS1 Analyst: MCB	Preparation Batch: BNK0219	Analyzed: 11/18/2025 17:52
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-01RE1 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Manganese	7439-96-5	50	0.0500	2.56	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> 21-Nov-2025 13:05
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**SPL-GW-MW10-1125**  
**25K0097-02 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 09:55
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 17:21
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0097-02 B
	Prepared: 11/10/2025	
	Final Volume: 10 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
cis-1,2-Dichloroethene	156-59-2	1	0.20	0.88	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	123	%	



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> 21-Nov-2025 13:05
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**SPL-GW-MW10-1125**  
**25K0097-02 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 09:55
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 14:12
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-02 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.242	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> 21-Nov-2025 13:05
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**SPL-GW-MW10-1125**  
**25K0097-02 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/05/2025 09:55
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0219	Analyzed: 11/14/2025 00:24
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-02 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	28.9	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> 21-Nov-2025 13:05
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**SPL-GW-MW10-1125**  
**25K0097-02RE1 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/05/2025 09:55
Instrument: ICPMS1 Analyst: MCB	Preparation Batch: BNK0219	Analyzed: 11/18/2025 17:57
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-02RE1 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Manganese	7439-96-5	50	0.0500	2.03	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> 21-Nov-2025 13:05
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**SPL-GW-MW29-1125**  
**25K0097-03 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 11:00
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 17:45
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0097-03 B
	Prepared: 11/10/2025	
	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>130</i>	<i>%</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> 21-Nov-2025 13:05
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**SPL-GW-MW29-1125**  
**25K0097-03 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 11:00
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 14:32
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-03 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0382	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> 21-Nov-2025 13:05
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**SPL-GW-MW29-1125**  
**25K0097-03 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/05/2025 11:00
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0219	Analyzed: 11/14/2025 01:09
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-03 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	16.6	mg/L	D
Manganese	7439-96-5	5	0.00500	0.509	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> 21-Nov-2025 13:05
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**SPL-GW-MW24-1125**  
**25K0097-04 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 12:40
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 18:08
Sample Preparation:	Prepared: 11/10/2025	Extract ID: 25K0097-04 C
	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>124</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> 21-Nov-2025 13:05
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**SPL-GW-MW24-1125**  
**25K0097-04 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 12:40
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 14:53
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-04 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0402	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	104	%	



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**SPL-GW-MW24-1125**  
**25K0097-04 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sampled: 11/05/2025 12:40
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0219	Analyzed: 11/14/2025 01:14
Sample Preparation:	Prepared: 11/13/2025	Extract ID: 25K0097-04 A 02
	Sample Size: 25 mL	
	Final Volume: 25 mL	

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	21.8	mg/L	D
Manganese	7439-96-5	5	0.00500	1.32	mg/L	D



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**SPL-GW-MW26-1125**  
**25K0097-05 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 13:50
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 18:31
Sample Preparation:	Sample Size: 10 mL	Extract ID: 25K0097-05 B
	Prepared: 11/10/2025	
	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>			80-129 %	128	%	



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**SPL-GW-MW26-1125**  
**25K0097-05 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 13:50
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 15:14
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-05 E
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	Final Volume: 10 mL

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Vinyl chloride	75-01-4	1	0.0200	0.0263	ug/L	
<i>Surrogate: 1,2-Dichloroethane-d4</i>			80-129 %	103	%	



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**SPL-GW-MW26-1125**  
**25K0097-05 (Water)**

**Metals and Metallic Compounds**

Method: EPA 6020B	Preparation Method: REN - EPA 3010A M	Sample Size: 25 mL	Sampled: 11/05/2025 13:50
Instrument: ICPMS1 Analyst: HAL	Preparation Batch: BNK0219	Final Volume: 25 mL	Analyzed: 11/14/2025 01:19
Sample Preparation:	Prepared: 11/13/2025		Extract ID: 25K0097-05 A 02

Analyte	CAS Number	Dilution	Reporting Limit	Result	Units	Notes
Iron	7439-89-6	5	0.180	8.35	mg/L	D
Manganese	7439-96-5	5	0.00500	0.120	mg/L	D



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**SPL-GW-MW82-1125**  
**25K0097-06 (Water)**

**Volatile Organic Compounds**

Method: EPA 8260D	Preparation Method: EPA 5030C (Purge and Trap)	Sampled: 11/05/2025 09:05
Instrument: NT20 Analyst: FCL	Preparation Batch: BNK0152	Analyzed: 11/10/2025 18:55
Sample Preparation:	Prepared: 11/10/2025	Extract ID: 25K0097-06 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 %	130	%	*



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**SPL-GW-MW82-1125**  
**25K0097-06 (Water)**

**Volatile Organic Compounds - SIM**

Method: EPA 8260D-SIM	Sampled: 11/05/2025 09:05
Instrument: NT16 Analyst: LTN	Analyzed: 11/07/2025 09:44
Sample Preparation: Preparation Method: EPA 5030C (Purge and Trap)	Extract ID: 25K0097-06 B
Preparation Batch: BNK0111	Sample Size: 10 mL
Prepared: 11/07/2025	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 %	103	%	



Seattle Public Utilities  
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Seattle WA, 98124-4018

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

**Reported:**  
21-Nov-2025 13:05

**Analysis by: Analytical Resources, LLC**

**Volatile Organic Compounds - Quality Control**

**Batch BNK0152 - EPA 8260D in Water**

Instrument: NT20 Analyst: FCL

QC Sample/Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Blank (BNK0152-BLK1)</b>				Prepared: 10-Nov-2025 Analyzed: 10-Nov-2025 15:01						
cis-1,2-Dichloroethene	ND	0.20	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	7.54		ug/L	6.25		121	80-129			
<b>LCS (BNK0152-BS1)</b>				Prepared: 10-Nov-2025 Analyzed: 10-Nov-2025 12:17						
cis-1,2-Dichloroethene	10.8	0.20	ug/L	10.0		108	80-121			
Surrogate: 1,2-Dichloroethane-d4	7.13		ug/L	6.25		114	80-129			
<b>LCS Dup (BNK0152-BSD1)</b>				Prepared: 10-Nov-2025 Analyzed: 10-Nov-2025 13:03						
cis-1,2-Dichloroethene	10.6	0.20	ug/L	10.0		106	80-121	1.34	30	
Surrogate: 1,2-Dichloroethane-d4	7.01		ug/L	6.25		112	80-129			



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Analysis by: Analytical Resources, LLC

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

**Batch BNK0111 - 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 (BNK0111-BLK1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:37								
Vinyl chloride	ND	0.0200	ug/L							U
Surrogate: 1,2-Dichloroethane-d4	6330		ug/L	6250		101	80-129			
<b>LCS (BNK0111-BS1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 07:56								
Vinyl chloride	2.01	0.0200	ug/L	2.00		100	62-141			
Surrogate: 1,2-Dichloroethane-d4	6600		ug/L	6250		106	80-129			
<b>LCS Dup (BNK0111-BSD1)</b>		Prepared: 07-Nov-2025 Analyzed: 07-Nov-2025 08:17								
Vinyl chloride	2.35	0.0200	ug/L	2.00		118	62-141	15.80	30	
Surrogate: 1,2-Dichloroethane-d4	6660		ug/L	6250		107	80-129			



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**Analysis by: Analytical Resources, LLC**

**Metals and Metallic Compounds - Quality Control**

**Batch BNK0219 - 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 (BNK0219-BLK1)</b>						Prepared: 13-Nov-2025 Analyzed: 13-Nov-2025 18:52					
Iron	54	ND	0.0360	mg/L							U
Iron	57	ND	0.0360	mg/L							U
Manganese	55	ND	0.00100	mg/L							U
<b>LCS (BNK0219-BS1)</b>						Prepared: 13-Nov-2025 Analyzed: 13-Nov-2025 18:57					
Iron	54	5.86	0.0360	mg/L	5.00		117	80-120			
Iron	57	5.94	0.0360	mg/L	5.00		119	80-120			
Manganese	55	0.0272	0.00100	mg/L	0.0250		109	80-120			



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**Uncertified Analytes included in this Report**

**Analysis Matrix & Analyte**

None

**Certified Analyses included in this Report**

**Analysis Matrix & Analyte**

**Certification Codes**

**EPA 6020B in Water**

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

**EPA 8260D in Water**

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

Vinyl chloride	NELAP,WADOE
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**Certifications**

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-018	05/12/2026
WADOE	WA Dept of Ecology	C558	06/30/2026



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

Reported:  
21-Nov-2025 13:05

### Notes and Definitions

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