

## TECHNICAL MEMORANDUM

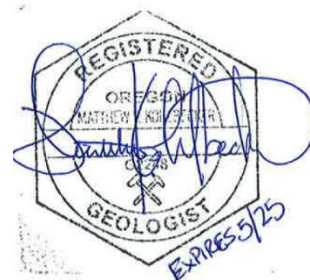
# Water Quality Sampling and Analysis to Support the Evaluation of Treated Wastewater Infiltration in Gates and Mill City, Marion and Linn Counties, Oregon

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**Date:** October 31, 2024



This Technical Memorandum (TM), prepared by GSI Water Solutions, Inc. (GSI), summarizes the sampling and laboratory analyses of groundwater, surface water, seep water, and wastewater influent required as part of developing a treated wastewater infiltration basin at Site GM1 in Mill City, Oregon (Figure 1). GSI collected samples between May 2023 and June 2024.

## 1. Introduction

As documented in previous GSI technical memorandums, subsurface hydrogeologic investigations of numerous sites surrounding Mill City, Oregon (GSI 2023a, GSI 2023b, GSI 2024) have indicated Site GM1 to be the most favorable for infiltration. Numerous water quality sampling events have been conducted at locations downgradient of the proposed infiltration basins at Site GM1 to establish background concentrations of various parameters including analytes regulated by the Safe Drinking Water Act (SDWA).

As summarized in Table 1, water quality sampling completed to support the evaluation of treated wastewater infiltration in Mill City, Oregon, includes analysis of groundwater from Site GM1 and treatment plant monitoring wells, groundwater from downgradient seeps adjacent to the Santiam River, surface water from the Santiam River, and wastewater influent from the Mill City Wastewater Treatment Plant.

**Table 1. Analytes Sampled by Sample Site**

Sample Site:	Site GM1 Monitoring Wells					Treatment Plant Monitoring Wells						Other	
Analytes Sampled	GM1-MW1	GM1-MW2	GM1-MW3	GM1-MW4	GM1-MW5	MW-1	MW-2	MW-3d	MW-3s	MW-4	Influent	River	Seeps
PFAS		X	X			X	X	X	X	X	X	X	
BOD												X	X
TSS												X	X
TDS	X	X		X	X						X	X	X
Nitrate	X	X		X	X						X		X
pH (lab)	X	X		X	X						X	X	X
VOCs	X	X		X	X						X		
SOCs	X			X							X		
SVOCs		X		X							X		
General Chemistry	X	X		X	X						X		
Total Metals	X	X		X	X						X		
Anions		X		X							X		
Ammonia		X		X							X		
Total Cyanide	X	X		X							X		
Potassium	X	X		X	X						X		
Total Phosphorus		X		X							X		
Alkalinity	X	X		X	X						X		
Conductivity (lab)		X		X							X		
Fluoride		X		X	X						X		
Radionuclides	X			X	X						X		
Field Parameters	X	X	X	X		X	X	X	X	X			

**Notes:**

PFAS: per- and polyfluoroalkyl substances

TSS: total suspended solids

VOCs: volatile organic compounds

SVOCs: semivolatile organic compounds

BOD: biochemical oxygen demand

TDS: total dissolved solids

SOCs: synthetic organic compounds

## 2. Sampling Locations and Methods

This section summarizes the methods used to collect water quality samples summarized in Table 1, including groundwater sampling at Site GM1 and the Mill City Treatment Plant (Section 2.1), surface water sampling from the Santiam River (Section 2.2), wastewater sampling from the City's existing treatment plant influent (Section 2.3), sampling of seeps adjacent to the Santiam River (Section 2.4), and specialized methods for sampling of PFAS at select locations (Section 2.5).

## 2.1 Groundwater Sampling

Site GM1 and Mill City Treatment Plant monitoring wells were sampled using Environmental Protection Agency (EPA) low flow (minimal drawdown) sampling procedures summarized in our Work Plan Addendum No. 4 (GSI 2024) and based on the April 1996 EPA Groundwater Report (Puls and Barcelona, 1996). The locations of groundwater samples collected at Site GM1 are shown on Figure 2, and the locations of groundwater samples collected at the Mill City Treatment Plant are shown on Figure 3.

Water was purged from the monitoring wells using a peristaltic pump connected to disposable silicone and low-density polyurethane (LDPE) tubing, which was replaced between sample locations. Flow rate was calculated by measuring the amount of water purged from the well in 1 minute. Field parameters (pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity) were measured with a Yellow Springs Instrument (YSI) Meter with flow through cell and/or a Hatch Turbidity Meter. Monitoring wells were purged until field parameters stabilized in general accordance with EPA low-flow guidelines. Once field parameters stabilized, the YSI and flow-through cell were removed from the system before sample bottles were filled. Static water level measurements were taken before sampling and every 5 minutes to monitor drawdown during purging. None of the monitoring wells showed excessive drawdown exceeding EPA requirements during water sampling.

Groundwater samples were packaged in ice in a cooler and sent to the analytical laboratory under standard chain-of-custody for analysis of VOCs, SVOCs, SOCs, total metals, ammonia, cyanide, phosphorus, solids, general chemistry parameters, and /or radionuclides.

## 2.2 Surface Water Sampling

Two surface water grab samples were collected from the Santiam River at the locations shown on Figure 3. Samples were collected using a peristaltic pump with the intake tubing submerged upstream of the individual collecting the sample. The intake of sample tubing was placed at the midpoint of the water column.

Surface water samples were packaged in ice in a cooler and sent to the analytical laboratory under standard chain-of-custody for analysis of TDS, TSS, BOD, and pH.

## 2.3 Wastewater Sampling

Several wastewater samples have been collected since May 2023 from the manhole location shown on Figure 3. The wastewater sample collected on May 1, 2024 consisted of three samples (morning, noon and evening) collected in the same container. During influent sample collection events, the tubing intake was submerged a minimum of 6 inches below the surface of the wastewater, approximately 2 ft below the surface of the manhole.

Wastewater samples were packaged in ice in a cooler and sent to the analytical laboratory under standard chain-of-custody for analysis of VOCs, SVOCs, SOCs, total metals, ammonia, anions, cyanide, phosphorus, solids, general chemistry parameters, and/or radionuclides.

## 2.4 Seep Sampling

Starting at the upriver boundary of this area downgradient from Site GM1, GSI staff traversed the riverbank and identified 9 visible seeps that were accessible and large enough to sample. The location of the seep samples are shown on Figure 3.

Seeps identified by GSI staff were sampled directly using a sample bottle where possible, or by using a clean polyvinyl chloride (PVC) pipe or flexible length of tubing to redirect or siphon water samples from seeps with low flow rates.

In areas where seeps exhibited sheet flow geometry, GSI staff estimated seep discharge rates by multiplying the average time it took to fill a bottle of known volume using a length of 1-inch internal diameter (ID) PVC inserted into the flow of the seep by the width of the seep in inches. Where sheet flow geometry was not evident, GSI staff estimated seep discharge rate visually where possible.



**Sampling Seep #5**

Water samples were packaged in ice in a cooler and sent to for the analytical laboratory under standard chain-of-custody for analysis of nitrate, TDS, TSS, BOD, and pH.

The approximate locations and estimated discharge rate of seeps sampled are provided in Table 2 below.

**Table 2. Location and Discharge Rate of Seeps**

Sample ID	Sample Location		Discharge Rate (mL/second)	Discharge Rate (gal/minute)	Comments
	Latitude	Longitude			
1	44.752469	-122.471274	996	15.8	
2	44.752668	-122.470901	2171	34.4	
3	44.753274	-122.469628	-	45 to 60	
4	44.753444	-122.469365	-	0.06	Very subtle sheen to ponded water
5	44.753358	-122.469071	490	7.7	
6	44.753576	-122.468947	-	<0.06	Definite sheen to ponded water
7	44.753820	-122.468419	-	-	Unable to estimate flow
8	44.753931	-122.467959	-	-	Unable to estimate flow
9	44.754285	-122.466250	-	<0.06	

## 2.5 PFAS Sampling

Site GM1 monitoring wells (GM1-MW2 and GM1-MW3), Treatment Plant monitoring wells (MW-1, MW-2, MW-3d, MW-3s, and MW-4), influent wastewater, and surface water from the Santiam River (collected downgradient of the proposed infiltration basin location) were sampled and analyzed for PFAS using EPA method 1633 as described in our Work Plan Addendum No. 4 (GSI 2024). Sampling was also conducted in accordance with the methods summarized in Section 2.1 through Section 2.4. Extra care was taken to avoid wearing PFAS-containing clothing or using PFAS-containing equipment and products to avoid contaminating samples. Water samples were packaged in ice in a cooler and sent under standard chain-of-custody to Anatek Labs, Inc. for PFAS analysis.



### **3. Results**

This section summarizes the results of water quality sampling, including groundwater sampling at Site GM1 (Section 3.1), wastewater sampling at Mill City's wastewater treatment plant (Section 3.2), PFAS sampling (Section 3.3), Santiam River sampling (Section 3.4), and seep sampling (Section 3.5). For reference purposes, summary analytical data tables presented in this TM include EPA Maximum Contaminant Levels (MCLs) and Secondary MCLs (SMCLs) which are typically applied to treated drinking water; however, the sampled media is not representative of treated drinking water.

#### **3.1 Site GM1 Monitoring Well Sampling Results**

A list of water quality analytes sampled at Site GM1 is provided in Table 1. Laboratory analytical reports for Site GM1 monitoring well samples are provided in Attachment A.

Site GM1 monitoring well water quality analysis results are summarized in Table 3.

#### **3.2 Wastewater Treatment Plant Influent and Monitoring Well Sampling Results**

A list of water quality analytes sampled in Mill City Wastewater Treatment Plant influent and monitoring wells is provided in Table 1. Laboratory analytical reports for wastewater influent samples are provided in Attachment A.

Wastewater influent and monitoring well water quality analysis results are summarized in Table 4.

#### **3.3 PFAS Sampling Results**

PFAS sampling locations are provided in Table 1. Laboratory analytical reports for PFAS compounds are provided in Attachment A.

Water quality results showing the results of PFAS analysis are summarized in Table 5.

#### **3.4 Santiam River Sampling Results**

A list of water quality analytes sampled in Santiam River water downgradient of Site GM1 is provided in Table 1. Laboratory analytical reports for Santiam River water samples are provided in Attachment A.

Santiam River water quality analysis results are summarized in Table 6.

#### **3.5 Seep Sampling Results**

A list of water quality analytes sampled in seeps downgradient of Site GM1 are provided in Table 1. Locations and estimated discharge of seeps sampled are provided in Table 2. Laboratory analytical reports for seep samples are provided in Attachment A.

Seep sample water quality analysis results are summarized in Table 7.

## 4. References

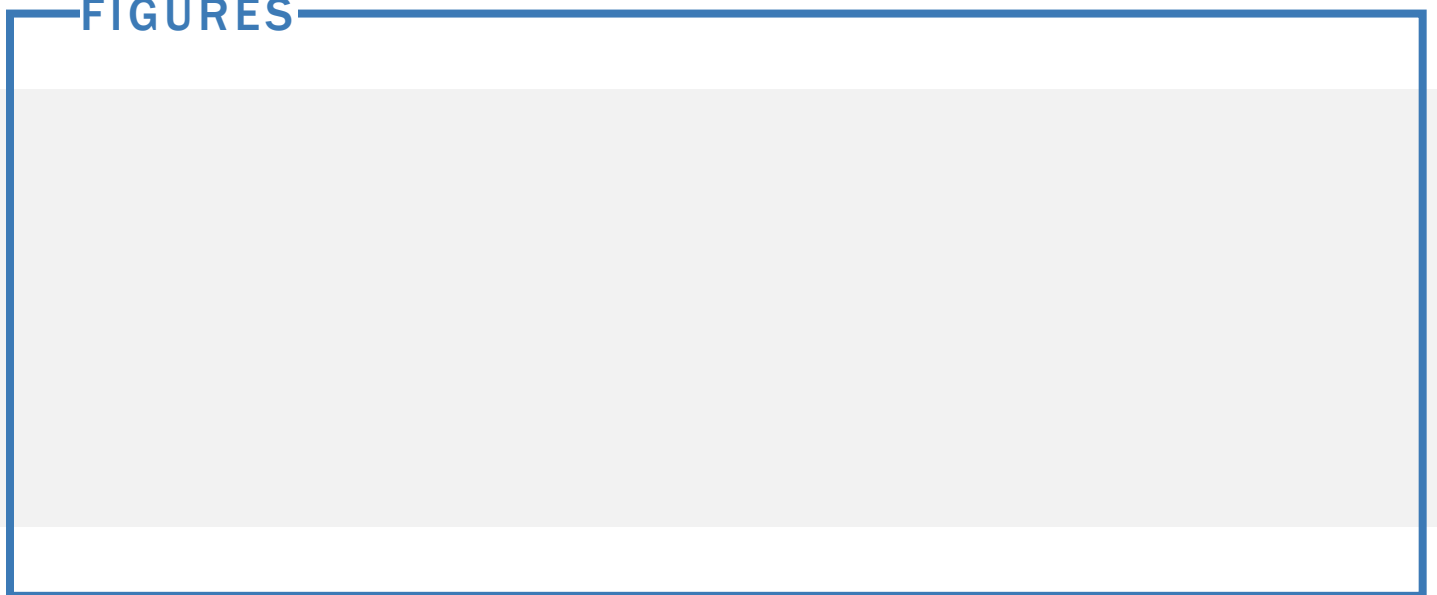
Puls, R. W. and Barcelona, M. J. (1996). *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. EPA Groundwater Issue EPA/540/S-95/504. U.S. Environmental Protection Agency. Available Online: <https://www.epa.gov/sites/default/files/2015-06/documents/lwflw2a.pdf>

GSI Water Solutions, Inc., and GeoSystems Analysis, Inc. (2023a). *Santiam Canyon Treated Wastewater Disposal – Subsurface Characterization Work Plan*.

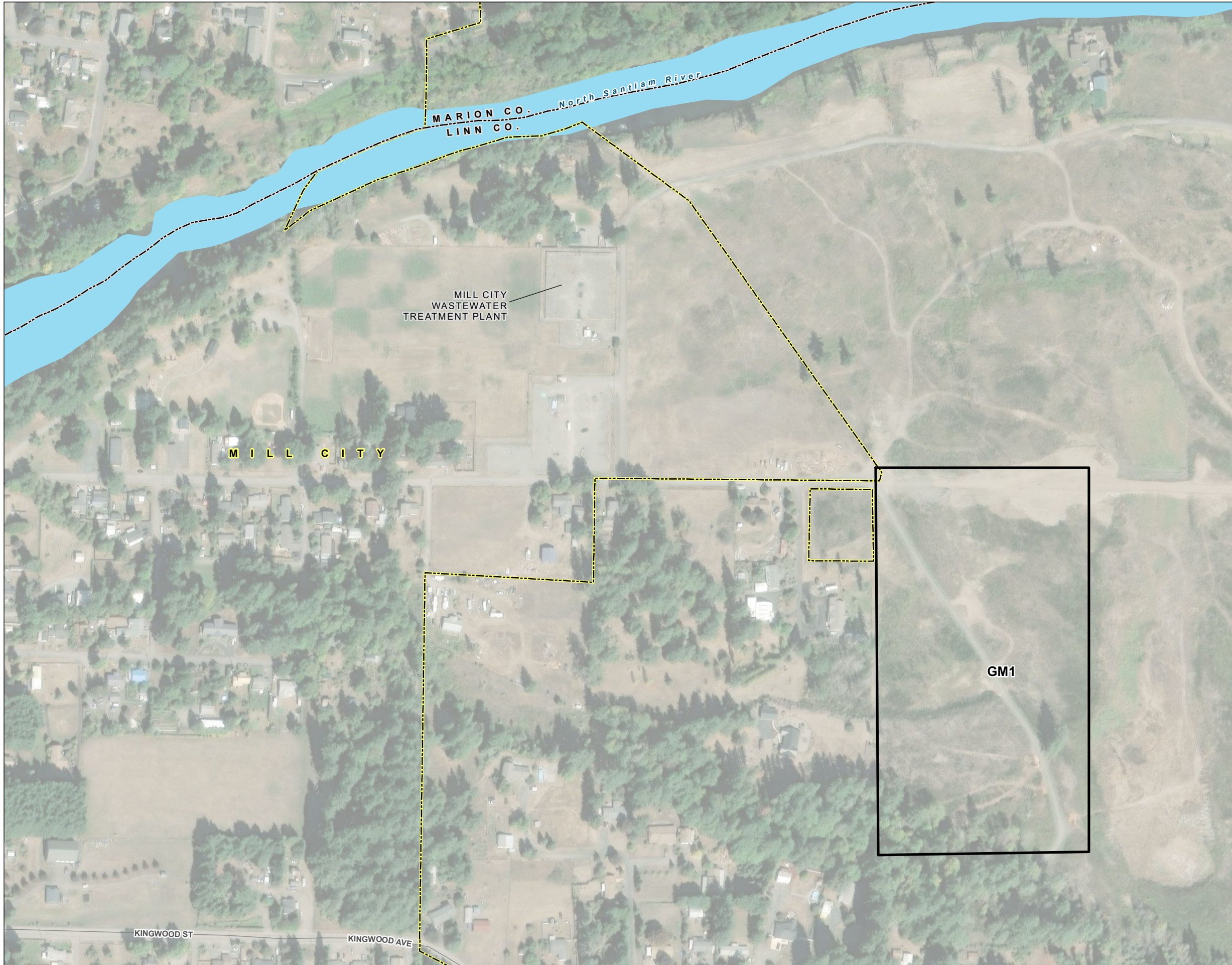
GSI Water Solutions, Inc., and GeoSystems Analysis, Inc. (2023b). *Santiam Canyon Treated Wastewater Disposal – Subsurface Characterization Work Plan Addendum No. 1 (Phase III)*.

GSI Water Solutions, Inc. (2024). *Santiam Canyon Treated Wastewater Disposal – Subsurface Characterization Work Plan Addendum No. 4 (Supplemental Characterization)*.

## FIGURES



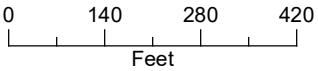
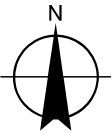




**FIGURE 1**  
**Site GM1 Location**  
Santiam Canyon Water Quality  
Sampling Technical Memorandum

**LEGEND**

- Candidate Site
- All Other Features**
- City Boundary
- County Boundary
- Major Road
- Watercourse
- Waterbody



Date: July 18, 2024  
Data Sources: BLM, ESRI, ODOT, USGS,  
Aerial Photo 2020



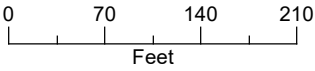
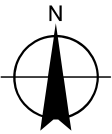




**FIGURE 2**  
**Site GM1 Sample Locations**  
Santiam Canyon Water Quality  
Sampling Technical Memorandum

**LEGEND**

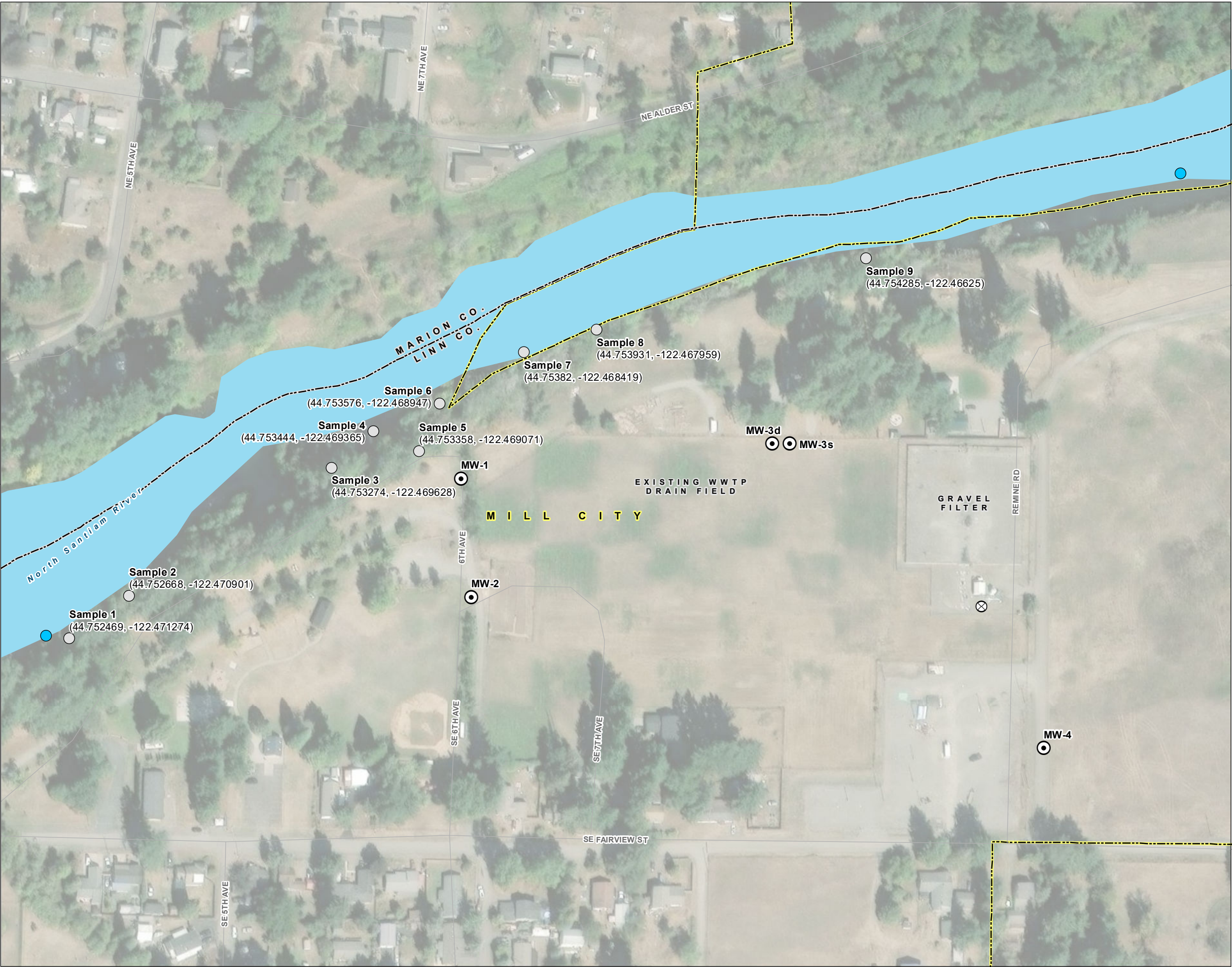
- Monitoring Well
- Domestic Well
- Future 50x50 PIT Basin
- GM1 Site Boundary
- All Other Features**
- City Boundary
- Major Road



Date: June 19, 2024  
Data Sources: BLM, ESRI, ODOT, USGS,  
Aerial Photo 2020

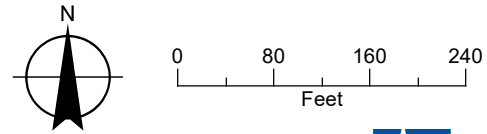






**FIGURE 3**  
**WWTP Monitoring Wells,**  
**Santiam River Surface Water**  
**and Seep Sample Locations**  
Santiam Canyon Water Quality  
Sampling Technical Memorandum

- LEGEND**
- Monitoring Well (Current WWTP)
  - Surface Water Sampling Location
  - Seep Sample
  - Influent Manhole (Wastewater Sampling Location)
  - City Boundary
  - County Boundary
  - Major Road
  - Watercourse



Date: June 19, 2024  
Data Sources: BLM, ESRI, ODOT, USGS,  
Aerial Photo 2020



ANALYTICAL SUMMARY TABLES



Table 3  
Water Quality Laboratory Analytical Results - Site GM1 Monitoring Wells  
Gates/Mill City Water Quality Sampling and Analysis Technical Memorandum

Sample Location	Sample Date	Lab Report ID	Lab
GM1-MW1	2/23/2024	A4B1471 - 02 26 24 2033	Apex Laboratories
	7/25/2023	23-22395	Edge Analytical
	5/28/2023	23-15512	Edge Analytical
GM1-MW2	4/5/2024	A4D1585 - 05 14 24 1516	Apex Laboratories
GM1-MW4	4/5/2024	A4D1585 - 05 14 24 1516	Apex Laboratories
GM1-MW4	5/29/2023	23-15516	Edge Analytical
GM1-MW5	5/30/2023	23-15521	Edge Analytical

Sample Date:	5/28/2023		7/25/2023		2/23/2024		4/25/2024		6/20/2024		6/20/2024		5/29/2023		4/25/2024		5/30/2023		Standard	Criteria	Unit	Reporting Limit	Method Reference
Sample ID:	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW2 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	GM1-MW4 Result	Q	GM1-MW4 Result	Q	GM1-MW5 Result	Q					
Analyte																							
Volatile Organic Compounds																							
Acetone							ND								ND				--	--	ug/L	20	EPA 8260D
Acrylonitrile							ND								ND				--	--	ug/L	2	EPA 8260D
Benzene	ND		ND				ND						ND		ND		ND		5	MCL	ug/L	0.5 <sup>+</sup>	EPA 8260D
Bromobenzene							ND								ND				--	--	ug/L	0.5	EPA 8260D
Bromochloromethane							ND								ND				--	--	ug/L	1	EPA 8260D
Bromodichloromethane							ND								ND				--	--	ug/L	1	EPA 8260D
Bromoform							ND								ND				--	--	ug/L	1	EPA 8260D
Bromomethane							ND								ND				--	--	ug/L	5	EPA 8260D
2-Butanone (MEK)							ND								ND				--	--	ug/L	10	EPA 8260D
n-Butylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
sec-Butylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
tert-Butylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
Carbon disulfide							ND								ND				--	--	ug/L	10	EPA 8260D
Carbon tetrachloride	ND		ND				ND						ND		ND		ND		5	MCL	ug/L	1 <sup>+</sup>	EPA 8260D/ EPA 524.2
Chlorobenzene	ND		ND				ND						ND		ND		ND		100	MCL	ug/L	0.5	EPA 8260D/ EPA 524.2
Chloroethane							ND								ND				--	--	ug/L	5	EPA 8260D
Chloroform							ND								ND				--	--	ug/L	1	EPA 8260D
Chloromethane							ND								ND				--	--	ug/L	5	EPA 8260D
2-Chlorotoluene							ND								ND				--	--	ug/L	1	EPA 8260D
4-Chlorotoluene							ND								ND				--	--	ug/L	1	EPA 8260D
Dibromochloromethane							ND								ND				--	--	ug/L	1	EPA 8260D
1,2-Dibromo-3-chloropropane							ND								ND				--	--	ug/L	5	EPA 8260D
1,2-Dibromoethane (EDB)							ND								ND				--	--	ug/L	0.5	EPA 8260D
Dibromomethane							ND								ND				--	--	ug/L	1	EPA 8260D
O-Dichlorobenzene	ND		ND										ND				ND		600	MCL	ug/L	0.5	EPA 524.2
P-Dichlorobenzene	ND		ND										ND				ND		75	MCL	ug/L	0.5	EPA 524.2
1,2-Dichlorobenzene							ND								ND				600	MCL	ug/L	0.5	EPA 8260D
1,3-Dichlorobenzene							ND								ND				--	--	ug/L	0.5	EPA 8260D
1,4-Dichlorobenzene							ND								ND				75	MCL	ug/L	0.5	EPA 8260D
Dichlorodifluoromethane							ND								ND				--	--	ug/L	1	EPA 8260D
1,1-Dichloroethane							ND								ND				--	--	ug/L	0.4	EPA 8260D
1,2-Dichloroethane (EDC)	ND		ND				ND						ND		ND		ND		5	MCL	ug/L	0.5 <sup>+</sup>	EPA 8260D/ EPA 524.2
1,1-Dichloroethylene	ND		ND										ND				ND		70	MCL	ug/L	0.5	EPA 524.2
1,1-Dichloroethene							ND								ND				--	--	ug/L	0.4	EPA 8260D
trans-1,2-Dichloroethylene	ND		ND										ND				ND		100	MCL	ug/L	0.5	EPA 524.2
cis-1,2-Dichloroethylene	ND		ND										ND				ND		70	MCL	ug/L	0.5	EPA 524.2
cis-1,2-Dichloroethene							ND								ND				--	--	ug/L	0.4	EPA 8260D
trans-1,2-Dichloroethene							ND								ND				--	--	ug/L	0.4	EPA 8260D
1,2-Dichloropropane	ND		ND				ND						ND		ND		ND		5	MCL	ug/L	0.5	EPA 8260D/ EPA 524.2
1,3-Dichloropropane							ND								ND				--	--	ug/L	1	EPA 8260D
2,2-Dichloropropane							ND								ND				--	--	ug/L	1	EPA 8260D
1,1-Dichloropropene							ND								ND				--	--	ug/L	1	EPA 8260D

Sample Date:	5/28/2023		7/25/2023		2/23/2024		4/25/2024		6/20/2024		6/20/2024		5/29/2023		4/25/2024		5/30/2023						
Sample ID:	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW2 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	GM1-MW4 Result	Q	GM1-MW4 Result	Q	GM1-MW5 Result	Q	Standard	Criteria	Unit	Reporting Limit	Method Reference
Analyte																							
cis-1,3-Dichloropropene							ND								ND				--	--	ug/L	1	EPA 8260D
trans-1,3-Dichloropropene							ND								ND				--	--	ug/L	1	EPA 8260D
Ethylbenzene	ND		ND				ND						ND		ND		ND		700	MCL	ug/L	0.5	EPA 8260D/ EPA 524.2
Hexachlorobutadiene							ND								ND				--	--	ug/L	5	EPA 8260D
2-Hexanone							ND								ND				--	--	ug/L	10	EPA 8260D
Isopropylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
4-Isopropyltoluene							ND								ND				--	--	ug/L	1	EPA 8260D
Methylene chloride	ND		ND				ND						ND		ND		ND		--	--	ug/L	10 <sup>+</sup>	EPA 8260D/ EPA 524.2
4-Methyl-2-pentanone (MIBK)							ND								ND				--	--	ug/L	10	EPA 8260D
Methyl tert-butyl ether (MTBE)							ND								ND				--	--	ug/L	1	EPA 8260D
Naphthalene							ND								ND				--	--	ug/L	5	EPA 8260D
n-Propylbenzene							ND								ND				--	--	ug/L	0.5	EPA 8260D
Styrene	ND		ND				ND						ND		ND		ND		100	MCL	ug/L	1 <sup>+</sup>	EPA 8260D/ EPA 524.2
1,1,1,2-Tetrachloroethane							ND								ND				--	--	ug/L	0.4	EPA 8260D
1,1,2,2-Tetrachloroethane							ND								ND				--	--	ug/L	0.5	EPA 8260D
Tetrachloroethene (PCE)			ND				ND						ND		ND		ND		5	MCL	ug/L	0.5 <sup>+</sup>	EPA 8260D/ EPA 524.2
Toluene			ND				ND						ND		ND		ND		1000	MCL	ug/L	1 <sup>+</sup>	EPA 8260D/ EPA 524.2
1,2,3-Trichlorobenzene							ND								ND				--	--	ug/L	2	EPA 8260D
1,2,4-Trichlorobenzene	ND		ND				ND						ND		ND		ND		70	MCL	ug/L	2 <sup>+</sup>	EPA 8260D/ EPA 524.2
1,1,1-Trichloroethane	ND		ND				ND						ND		ND		ND		200	MCL	ug/L	0.5	EPA 8260D/ EPA 524.2
1,1,2-Trichloroethane	ND		ND				ND						ND		ND		ND		5	MCL	ug/L	0.5	EPA524.2
Trichloroethene (TCE)							ND								ND				5	MCL	ug/L	0.4	EPA 8260D
Trichloroethylene	ND		ND										ND				ND		5	MCL	ug/L	0.5	EPA524.2
Trichlorofluoromethane							ND								ND				--	--	ug/L	2	EPA 8260D
1,2,3-Trichloropropane							ND								ND				--	--	ug/L	1	EPA 8260D
1,2,4-Trimethylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
1,3,5-Trimethylbenzene							ND								ND				--	--	ug/L	1	EPA 8260D
Vinyl chloride	ND		ND				ND						ND		ND		ND		2	MCL	ug/L	0.5 <sup>+</sup>	EPA 8260D/ EPA 524.2
Total Xylenes			ND										ND				ND				ug/L	0.5	EPA524.2
m,p-Xylene							ND								ND				--	--	ug/L	1	EPA 8260D
o-Xylene							ND								ND				10000	MCL	ug/L	0.5	EPA 8260D
Semivolatle Organic Compounds																							
Acenaphthene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Acenaphthylene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Anthracene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Benz(a)anthracene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Benzo(a)pyrene							ND								ND				--	--	ug/L	0.0294	EPA 8270E
Benzo(b)fluoranthene							ND								ND				--	--	ug/L	0.0294	EPA 8270E
Benzo(k)fluoranthene							ND								ND				--	--	ug/L	0.0294	EPA 8270E
Benzo(g,h,i)perylene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Chrysene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Dibenz(a,h)anthracene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Fluoranthene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Fluorene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Indeno(1,2,3-cd)pyrene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
1-Methylnaphthalene							ND	Q-30							ND	Q-30			--	--	ug/L	0.0392	EPA 8270E
2-Methylnaphthalene							ND	Q-30							ND	Q-30			--	--	ug/L	0.0392	EPA 8270E
Naphthalene							ND	Q-30							ND	Q-30			--	--	ug/L	0.0392	EPA 8270E
Phenanthrene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Pyrene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Carbazole							ND								ND				--	--	ug/L	0.0294	EPA 8270E
Dibenzofuran							ND								ND				--	--	ug/L	0.0196	EPA 8270E
2-Chlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
4-Chloro-3-methylphenol							ND								ND				--	--	ug/L	0.196	EPA 8270E
2,4-Dichlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
2,4-Dimethylphenol							ND								ND				--	--	ug/L	0.49	EPA 8270E
2,4-Dinitrophenol							ND								ND				--	--	ug/L	0.49	EPA 8270E
4,6-Dinitro-2-methylphenol							ND								ND				--	--	ug/L	0.49	EPA 8270E

Sample Date:	5/28/2023		7/25/2023		2/23/2024		4/25/2024		6/20/2024		6/20/2024		5/29/2023		4/25/2024		5/30/2023						
Sample ID:	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW2 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	GM1-MW4 Result	Q	GM1-MW4 Result	Q	GM1-MW5 Result	Q	Standard	Criteria	Unit	Reporting Limit	Method Reference
Analyte																							
2-Methylphenol							ND								ND				--	--	ug/L	0.049	EPA 8270E
3+4-Methylphenol(s)							ND								ND				--	--	ug/L	0.049	EPA 8270E
2-Nitrophenol							ND								ND				--	--	ug/L	0.196	EPA 8270E
4-Nitrophenol							ND								ND				--	--	ug/L	0.196	EPA 8270E
Pentachlorophenol (PCP)							ND								ND				--	--	ug/L	0.196	EPA 8270E
Phenol							ND								ND				--	--	ug/L	0.392	EPA 8270E
2,3,4,6-Tetrachlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
2,3,5,6-Tetrachlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
2,4,5-Trichlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
2,4,6-Trichlorophenol							ND								ND				--	--	ug/L	0.098	EPA 8270E
Bis(2-ethylhexyl)phthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
Butyl benzyl phthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
Diethylphthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
Dimethylphthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
Di-n-butylphthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
Di-n-octyl phthalate							ND								ND				--	--	ug/L	0.392	EPA 8270E
N-Nitrosodimethylamine							ND								ND				--	--	ug/L	0.049	EPA 8270E
N-Nitroso-di-n-propylamine							ND	R-02							ND	R-02			--	--	ug/L	0.049	EPA 8270E
N-Nitrosodiphenylamine							ND								ND				--	--	ug/L	0.049	EPA 8270E
Bis(2-Chloroethoxy) methane							ND								ND				--	--	ug/L	0.049	EPA 8270E
Bis(2-Chloroethyl) ether							ND								ND				--	--	ug/L	0.049	EPA 8270E
2,2'-Oxybis(1-Chloropropane)							ND								ND				--	--	ug/L	0.049	EPA 8270E
Hexachlorobenzene							ND								ND				--	--	ug/L	0.0196	EPA 8270E
Hexachlorobutadiene							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
Hexachlorocyclopentadiene							ND								ND				--	--	ug/L	0.098	EPA 8270E
Hexachloroethane							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
2-Chloronaphthalene							ND	Q-30							ND	Q-30			--	--	ug/L	0.0196	EPA 8270E
1,2,4-Trichlorobenzene							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
4-Bromophenyl phenyl ether							ND								ND				--	--	ug/L	0.049	EPA 8270E
4-Chlorophenyl phenyl ether							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
Aniline							ND								ND				--	--	ug/L	0.098	EPA 8270E
4-Chloroaniline							ND								ND				--	--	ug/L	0.049	EPA 8270E
2-Nitroaniline							ND								ND				--	--	ug/L	0.392	EPA 8270E
3-Nitroaniline							ND								ND				--	--	ug/L	0.392	EPA 8270E
4-Nitroaniline							ND								ND				--	--	ug/L	0.392	EPA 8270E
Nitrobenzene							ND								ND				--	--	ug/L	0.196	EPA 8270E
2,4-Dinitrotoluene							ND								ND				--	--	ug/L	0.196	EPA 8270E
2,6-Dinitrotoluene							ND								ND				--	--	ug/L	0.196	EPA 8270E
Benzoic acid							ND								ND				--	--	ug/L	2.45	EPA 8270E
Benzyl alcohol							ND								ND				--	--	ug/L	0.196	EPA 8270E
Isophorone							ND								ND				--	--	ug/L	0.049	EPA 8270E
Azobenzene (1,2-DPH)							ND								ND				--	--	ug/L	0.049	EPA 8270E
Bis(2-Ethylhexyl) adipate							ND								ND				--	--	ug/L	0.49	EPA 8270E
3,3'-Dichlorobenzidine							ND	Q-52							ND	Q-52			--	--	ug/L	0.98	EPA 8270E
1,2-Dinitrobenzene							ND								ND				--	--	ug/L	0.49	EPA 8270E
1,3-Dinitrobenzene							ND								ND				--	--	ug/L	0.49	EPA 8270E
1,4-Dinitrobenzene							ND								ND				--	--	ug/L	0.49	EPA 8270E
Pyridine							ND								ND				--	--	ug/L	0.196	EPA 8270E
1,2-Dichlorobenzene							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
1,3-Dichlorobenzene							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E
1,4-Dichlorobenzene							ND	Q-30							ND	Q-30			--	--	ug/L	0.049	EPA 8270E



Sample Date:	5/28/2023		7/25/2023		2/23/2024		4/25/2024		6/20/2024		6/20/2024		5/29/2023		4/25/2024		5/30/2023		Standard	Criteria	Unit	Reporting Limit	Method Reference				
Sample ID:	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW2 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	GM1-MW4 Result	Q	GM1-MW4 Result	Q	GM1-MW5 Result	Q									
Analyte																											
Synthetic Organic Chemicals																											
2,4 - D	ND												ND				ND		70	MCL	ug/L	0.1	EPA 515.4				
2,4,5 - Tp (Silvex)	ND												ND				ND		50	MCL	ug/L	0.1	EPA 515.4				
Di(2-Ethylhexyl)-Adipate	ND												ND				ND		400	MCL	ug/L	0.05	EPA 525.2				
Alachlor	ND												ND				ND		2	MCL	ug/L	0.05	EPA 525.2				
Atrazine	ND												ND				ND		3	MCL	ug/L	0.05	EPA 525.2				
Benzo(A)Pyrene	ND												ND				ND		0.2	MCL	ug/L	0.05	EPA 525.2				
Lindane (Bhc - Gamma)	ND												ND				ND		0.2	MCL	ug/L	0.05	EPA 525.2				
Carbofuran	ND												ND				ND		40	MCL	ug/L	1	EPA 531.2				
Chlordane	ND												ND				ND		2	MCL	ug/L	0.1	EPA 508.1				
Dalapon	ND												ND				ND		200	MCL	ug/L	0.5	EPA 515.4				
1,2-Dibromo-3-Chloropropane	ND												ND				ND		0.2	MCL	ug/L	0.02	EPA 504.1				
Dinoseb	ND												ND				ND		7	MCL	ug/L	0.1	EPA 515.4				
Diquat	ND												ND				ND		20	MCL	ug/L	0.4	EPA 549.2				
Endothall	ND												ND				ND		100	MCL	ug/L	5	EPA 548.1				
Endrin	ND												ND				ND		2	MCL	ug/L	0.05	EPA 525.2				
1,2 - Dibromoethane (EDB)	ND												ND				ND		0.05	MCL	ug/L	0.02	EPA 504.1				
Glyphosate	ND												ND				ND		700	MCL	ug/L	5	EPA 547				
Heptachlor Epoxide "B"	ND												ND				ND		0.2	MCL	ug/L	0.05	EPA 525.2				
Heptachlor	ND												ND				ND		0.4	MCL	ug/L	0.05	EPA 525.2				
Hexachlorobenzene	ND												ND				ND		1	MCL	ug/L	0.05	EPA 525.2				
Hexachlorocyclo-Pentadiene	ND												ND				ND		50	MCL	ug/L	0.05	EPA 525.2				
Methoxychlor	ND												ND				ND		40	MCL	ug/L	0.05	EPA 525.2				
Pentachlorophenol	ND												ND				ND		1	MCL	ug/L	0.04	EPA 515.4				
Di(2-Ethylhexyl)-Phthalate	ND												ND				ND		6	MCL	ug/L	0.1	EPA 525.2				
Picloram	ND												ND				ND		500	MCL	ug/L	0.1	EPA 515.4				
Simazine	ND												ND				ND		4	MCL	ug/L	0.05	EPA 525.2				
Toxaphene	ND												ND				ND		3	MCL	ug/L	1	EPA 508.1				
Oxamyl (Vydate)	ND												ND				ND		200	MCL	ug/L	1	EPA 531.2				
Pcbs (Total Aroclors)	ND												ND				ND		0.5	MCL	ug/L	0.2	EPA 508.1				
Total Metals																											
Aluminum	520						ND								139		2260		50-200	SMCL	ug/L	50+	EPA 6020B				
Antimony	ND						ND								ND		ND		6	MCL	ug/L	1	EPA 6020B				
Arsenic	ND						ND								ND		0.95		10	MCL	ug/L	1	EPA 6020B				
Barium	ND						2.13								2.98		12		2000	MCL	ug/L	2	EPA 6020B				
Beryllium	ND						ND						ND		ND		ND		4	MCL	ug/L	0.2	EPA 6020B/ EPA200.8				
Cadmium	ND						ND								ND		ND		5	MCL	ug/L	0.2	EPA 6020B				
Chromium	ND						ND						1.9		ND		3.2		100	MCL	ug/L	2+	EPA 6020B				
Copper	2						ND								ND		14.2		1300	TT	ug/L	2	EPA 6020B				
Lead	ND						ND								1.79		0.6		15	TT	ug/L	0.2	EPA 6020B				
Magnesium	3200	B-02					6720	B-02							6460	B-02	3300		--	--	ug/L	150	EPA 6020B				
Manganese	77.6						8.31								40.3		106		50	SMCL	ug/L	1	EPA 6020B				
Mercury	ND						ND								ND		ND		2	MCL	ug/L	0.08	EPA 6020B				
Molybdenum	0.62						ND								ND		ND		--	--	ug/L	1	EPA 6020B				
Nickel	0.86	B-02					ND	B-02							ND	B-02	2.8		--	--	ug/L	2	EPA 6020B				
Potassium	2600						1380								1660		1000		--	--	ug/L	100	EPA 6020B				
Selenium	ND						ND								ND		ND		50	MCL	ug/L	1	EPA 6020B				
Silver	ND						ND								ND		ND		100	SMCL	ug/L	0.2	EPA 6020B				
Sodium	3800						5480								5500		4800		--	--	ug/L	100	EPA 6020B				
Thallium	ND						ND								ND		ND		2	MCL	ug/L	0.2	EPA 6020B				
Boron							ND								ND		0		--	--	ug/L	10	EPA 6020B				
Lithium							ND	R-04							ND	R-04	0		--	--	ug/L	5	EPA 6020B				
Strontium							93.4	B-02							86.4	B-02	0		--	--	ug/L	5	EPA 6020B				
Vanadium							2.09								3.56		0		--	--	ug/L	2	EPA 6020B				
Zinc	3.3						ND								ND		5.9		5000	SMCL	ug/L	4	EPA 6020B				
Calcium	10500						17700								15400		9100		--	--	ug/L	600	EPA 6020B				
Iron	620																2610		300	SMCL	ug/L	50	EPA 200.7				
Silica	30000																43300		--	--	ug/L	50	EPA 200.7				
Chloride	1400																1400		250	SMCL	ug/L	200	EPA 300				

Sample Date:	5/28/2023		7/25/2023		2/23/2024		4/25/2024		6/20/2024		6/20/2024		5/29/2023		4/25/2024		5/30/2023							
Sample ID:	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW1 Result	Q	GM1-MW2 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	GM1-MW4 Result	Q	GM1-MW4 Result	Q	GM1-MW5 Result	Q	Standard	Criteria	Unit	Reporting Limit	Method Reference	
Analyte																								
Ammonia (NH3) by Gas Diffusion and Colormetric Detection																								
Ammonia as N							ND								ND				-	-	mg/L	0.02	SM 4500-NH3 G	
Anoins by Ion Chromatography																								
Bromide							ND								ND				-	-	mg/L	1	EPA 300.0	
Chloride							1.92								1.84				250	SMCL	mg/L	1	EPA 300.0	
Fluoride							ND								ND		ND		2	SMCL	mg/L	1	EPA 300.0	
Nitrate-Nitrogen	1.1	H3				0.843	0.308								0.699		0.46		10	MCL	mg/L	0.25	EPA 300.0	
Nitrite-Nitrogen	ND	H4					ND								ND		ND		1	MCL	mg/L	0.25	EPA 300.0	
Sulfate	1.6						2.05								2.06		0.3		250	SMCL	mg/L	1	EPA 300.0	
Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection																								
Total Cyanide	ND						ND						ND		ND				0.2	MCL	mg/L	0.005	D7511-12	
Total Phosphorus by Persulfate Digestion/Colorimetric Spectrophotometry																								
Phosphorus							ND								ND				-	-	mg/L	0.2	SM 4500-P E	
Solid and Moisture Determinations																								
Total Dissolved Solids	78						110						147		115		84		500	SMCL	mg/L	10*	SM 2540 C	
General Chemistry Parameters																								
pH	6.15 H5	H-12					7.1	H-12						7.15	H5	7.3	H-12	7.05	H5	6.5-8.5	SMCL	pH Units		SM 4500-H+ B
pH Temperature (deg C)							21.6	H-12								21.6	H-12			-	-	pH Units		SM 4500-H+ B
Conductivity							157									145				-	-	umhos/cm**	250	SM 2510 B
Total Alkalinity	42.5						76.6							114		69		41.4		-	-	mg CaCO3/L	20*	SM 2510 B
Bicarbonate Alkalinity	42.5						76.6							114		69		41.4		-	-	mg CaCO3/L	20*	SM 2510 B
Carbonate Alkalinity	ND						ND							ND		ND		ND		-	-	mg CaCO3/L	20*	SM 2510 B
Hydroxide Alkalinity	ND						ND							ND		ND		ND		-	-	mg CaCO3/L	20*	SM 2510 B
Total Suspended Solids	11.5 NN																	71 NN		-	-	mg/L	2	EPA I-3765-85
Hardness	39.4																	36.3		-	-	mg CaCO3/L		EPA 200.7
Corrosivity	-2.92													-1.25						-	-	si		SM4500-H+ B
Radionuclides																								
Uranium	ND													ND				ND		30	-	ug/L	1	EPA 200.8
Gross Alpha	ND													ND				ND		15	-	pCi/L	3	EPA 900.0
Gross Beta	ND													ND				ND		4	-	pCi/L	4	EPA 900.0
Radium 226	ND													ND				ND		5***	-	pCi/L	1	EPA 903.1
Radium 228	ND													ND				ND			-	pCi/L	1	EPA 904.0
Field Parameters																								
Temperature	11.7						11.2			14.4		13.7				10.5						°C		Field Instrument
Specific Conductivity	93.3						255.0			134.1		121.3				252.0						uS/cm		Field Instrument
Dissolved Oxygen	6.0						3.5			1.1		9.4				3.3						mg/L		Field Instrument
pH (field)	6.52						6.47			6.92		7.02				6.25						pH Units		Field Instrument
Oxidation-Reduction Potential	93.8						172.4			107.5		197.0				186.8						mV		Field Instrument
Turbidity	24.5						1.97			3.24		1.23				4.67						NTU		Field Instrument

Notes:

Analyte Detected Above MCL/SMCL

MCL: Maximum Contaminant Level (the highest level of contamination that is considered acceptable in drinking water)

SMCL Secondary Maximum Containment Level (established guidelines for drinking water aesthetic considerations; not EPA-enforced)

TT Treatment Technique, action is required if more than 10% of tap water samples exceed this level

ND: Analyte NOT DETECTED at or above the detection or reporting limit

Detection Limit: Lowest concentration of an analyte that can be reliably detected

Reporting Limit: Lowest concentration of analyte that a laboratory can report with reasonable accuracy for a specific sample

Q-30: Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low

Q-52: Due to known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method. passed all QC requirements for this method

B-02: Analyte detected in an associated blank at a level between one-half the MRL and the MRL (See Notes and Conventions below).

H-12: Sample Analysis or Filtration was performed >15 minutes after sample collection. Consult regulator or permit manager to determine the usability of data for intended use. usability of data for intended use

R-02: The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

R-04: Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis

+ Actual Reporting Limit may be lower than[ listed Reporting Limit- varies by laboratory.

\* Listed under OAR 33-61-0030 Maximum Contaminant Levels and Action Levels

\*\* @ 25 deg C

\*\*\* MCL for Radium 226 and Radium 228 combined

Table 4  
Water Quality Laboratory Analytical Results - Wastewater Treatment Plant Influent and Monitoring Wells  
Gates/Mill City Water Quality Sampling and Analysis Technical Memorandum

Sample ID	Sample Date	Lab Report ID	Lab
IN_20230502	5/2/2023	20230502-095	Waterlab Corps
		20230502-094	
		20230502-097	
		20230502-098	
IN_20231017	10/17/2023	20231017-008 and 20231017-009	
WW-050124	5/1/2024	A4E0861 - 05 23 24 1220	Apex Laboratories

Sample Date:	5/2/2023		10/17/2023		5/1/2024		5/1/2024	5/1/2024	6/20/2024	5/1/2024	6/20/2024					
Sample ID:	IN_20230502 Result	Q	IN_20231017 Result	Q	WW-050124 Result	Q	MW-1 Result	MW-2 Result	MW-3s Result	MW-3d Result	MW-4 Result	Standard	Criteria	Units	Reporting Limit	Method Reference
Analyte																
Volatile Organic Compounds																
Acetone					304							--	--	ug/L	--	EPA 8260D
Acrylonitrile					ND							--	--	ug/L	--	EPA 8260D
Benzene					ND							5	MCL	ug/L	--	EPA 8260D
Bromobenzene					ND							--	--	ug/L	--	EPA 8260D
Bromochloromethane					ND							--	--	ug/L	--	EPA 8260D
Bromodichloromethane					ND							--	--	ug/L	--	EPA 8260D
Bromoform					ND							--	--	ug/L	--	EPA 8260D
Bromomethane					ND							--	--	ug/L	--	EPA 8260D
2-Butanone (MEK)					ND							--	--	ug/L	--	EPA 8260D
n-Butylbenzene					ND							--	--	ug/L	--	EPA 8260D
sec-Butylbenzene					ND							--	--	ug/L	--	EPA 8260D
tert-Butylbenzene					ND							--	--	ug/L	--	EPA 8260D
Carbon disulfide					ND							--	--	ug/L	--	EPA 8260D
Carbon tetrachloride					ND							5	MCL	ug/L	--	EPA 8260D
Chlorobenzene					ND							100	MCL	ug/L	--	EPA 8260D
Chloroethane					ND							--	--	ug/L	--	EPA 8260D
Chloroform					1.1							--	--	ug/L	--	EPA 8260D
Chloromethane					ND							--	--	ug/L	--	EPA 8260D
2-Chlorotoluene					ND							--	--	ug/L	--	EPA 8260D
4-Chlorotoluene					ND							--	--	ug/L	--	EPA 8260D
Dibromochloromethane					ND							--	--	ug/L	--	EPA 8260D
1,2-Dibromoethane (EDB)					ND							--	--	ug/L	--	EPA 8260D
Dibromomethane					ND							--	--	ug/L	--	EPA 8260D
1,2-Dichlorobenzene					ND							600	MCL	ug/L	--	EPA 8260D
1,3-Dichlorobenzene					ND							--	--	ug/L	--	EPA 8260D
1,4-Dichlorobenzene					0.63							75	MCL	ug/L	--	EPA 8260D
Dichlorodifluoromethane					ND							--	--	ug/L	--	EPA 8260D
1,1-Dichloroethane					ND							--	--	ug/L	--	EPA 8260D
1,2-Dichloroethane (EDC)					ND							5	MCL	ug/L	--	EPA 8260D
1,1-Dichloroethene					ND							--	--	ug/L	--	EPA 8260D
cis-1,2-Dichloroethene					ND							--	--	ug/L	--	EPA 8260D
trans-1,2-Dichloroethene					ND							--	--	ug/L	--	EPA 8260D
1,2-Dichloropropane					ND							5	MCL	ug/L	--	EPA 8260D
1,3-Dichloropropane					ND							--	--	ug/L	--	EPA 8260D
2,2-Dichloropropane					ND							--	--	ug/L	--	EPA 8260D
1,1-Dichloropropene					ND							--	--	ug/L	--	EPA 8260D
cis-1,3-Dichloropropene					ND							--	--	ug/L	--	EPA 8260D
trans-1,3-Dichloropropene					ND							--	--	ug/L	--	EPA 8260D
Ethylbenzene					ND							700	MCL	ug/L	--	EPA 8260D
Hexachlorobutadiene					ND							--	--	ug/L	--	EPA 8260D
2-Hexanone					ND							--	--	ug/L	--	EPA 8260D
Isopropylbenzene					ND							--	--	ug/L	--	EPA 8260D
4-Isopropyltoluene					1.01							--	--	ug/L	--	EPA 8260D

Sample Date:	5/2/2023		10/17/2023		5/1/2024		5/1/2024	5/1/2024	6/20/2024	5/1/2024	6/20/2024					
Sample ID:	IN_20230502 Result	Q	IN_20231017 Result	Q	WW-050124 Result	Q	MW-1 Result	MW-2 Result	MW-3s Result	MW-3d Result	MW-4 Result	Standard	Criteria	Units	Reporting Limit	Method Reference
Analyte																
Methylene chloride					ND							--	--	ug/L	--	EPA 8260D
4-Methyl-2-pentanone (MIBK)					ND							--	--	ug/L	--	EPA 8260D
Methyl tert-butyl ether (MTBE)					ND							--	--	ug/L	--	EPA 8260D
Naphthalene					ND							--	--	ug/L	--	EPA 8260D
n-Propylbenzene					ND							--	--	ug/L	--	EPA 8260D
Styrene					ND							100	MCL	ug/L	--	EPA 8260D
1,1,1,2-Tetrachloroethane					ND							--	--	ug/L	--	EPA 8260D
1,1,2,2-Tetrachloroethane					ND							--	--	ug/L	--	EPA 8260D
Tetrachloroethene (PCE)					ND							5	MCL	ug/L	--	EPA 8260D
Toluene					21							1000	MCL	ug/L	--	EPA 8260D
1,2,3-Trichlorobenzene					ND							--	--	ug/L	--	EPA 8260D
1,2,4-Trichlorobenzene					ND							70	MCL	ug/L	--	EPA 8260D
1,1,1-Trichloroethane					ND							--	--	ug/L	--	EPA 8260D
1,1,2-Trichloroethane					ND							--	--	ug/L	--	EPA 8260D
Trichloroethene (TCE)					ND							5	MCL	ug/L	--	EPA 8260D
Trichlorofluoromethane					ND							--	--	ug/L	--	EPA 8260D
1,2,3-Trichloropropane					ND							--	--	ug/L	--	EPA 8260D
1,2,4-Trimethylbenzene					ND							--	--	ug/L	--	EPA 8260D
1,3,5-Trimethylbenzene					ND							--	--	ug/L	--	EPA 8260D
Vinyl chloride					ND							2	MCL	ug/L	--	EPA 8260D
m,p-Xylene					ND							--	--	ug/L	--	EPA 8260D
o-Xylene					ND							10000	MCL	ug/L	--	EPA 8260D
1,1,1-Trichloroethane	ND	B										--	--	ug/L	0.5	EPA 524.2
1,1,2-Trichloroethane	ND	B										--	--	ug/L	0.5	EPA 524.2
1,1-Dichloroethylene	ND	B										--	--	ug/L	0.5	EPA 524.2
1,2,4-Trichlorobenzene	ND	B										--	--	ug/L	0.5	EPA 524.2
1,2-Dichloroethane	ND	B										--	--	ug/L	0.5	EPA 524.2
1,2-Dichloropropane	ND	B										--	--	ug/L	0.5	EPA 524.2
Benzene	ND	B										--	--	ug/L	0.5	EPA 524.2
Carbon Tetrachloride	ND	B										--	--	ug/L	0.5	EPA 524.2
cis-1,2-Dichloroethylene	ND	B										--	--	ug/L	0.5	EPA 524.2
Dichloromethane	ND	B										--	--	ug/L	0.5	EPA 524.2
Ethylbenzene	ND	B										--	--	ug/L	0.5	EPA 524.2
Monochlorobenzene	ND	B										--	--	ug/L	0.5	EPA 524.2
o-Dichlorobenzene	ND	B										--	--	ug/L	0.5	EPA 524.2
p-Dichlorobenzene	ND	B										--	--	ug/L	0.5	EPA 524.2
Styrene	ND	B										--	--	ug/L	0.5	EPA 524.2
Tetrachloroethylene (PCE)	ND	B										--	--	ug/L	0.5	EPA 524.2
Toluene	49.6	B										--	--	ug/L	0.5	EPA 524.2
trans-1,2-Dichloroethylene	ND	B										--	--	ug/L	0.5	EPA 524.2
Trichloroethylene (TCE)	ND	B										--	--	ug/L	0.5	EPA 524.2
Vinyl Chloride	ND	B										--	--	ug/L	0.5	EPA 524.2
Xylenes, Total	ND	B										--	--	ug/L	0.5	EPA 524.2
Semivolatile Organic Compounds																
Acenaphthene					ND							--	--	ug/L	--	EPA 8270E
Acenaphthylene					ND							--	--	ug/L	--	EPA 8270E
Anthracene					ND							--	--	ug/L	--	EPA 8270E
Benz(a)anthracene					ND							--	--	ug/L	--	EPA 8270E
Benzo(a)pyrene					ND							--	--	ug/L	--	EPA 8270E
Benzo(b)fluoranthene					ND							--	--	ug/L	--	EPA 8270E
Benzo(k)fluoranthene					ND							--	--	ug/L	--	EPA 8270E
Benzo(g,h,i)perylene					ND							--	--	ug/L	--	EPA 8270E
Chrysene					ND							--	--	ug/L	--	EPA 8270E
Dibenz(a,h)anthracene					ND							--	--	ug/L	--	EPA 8270E
Fluoranthene					ND							--	--	ug/L	--	EPA 8270E
Fluorene					ND							--	--	ug/L	--	EPA 8270E
Indeno(1,2,3-cd)pyrene					ND							--	--	ug/L	--	EPA 8270E

Sample Date:	5/2/2023		10/17/2023		5/1/2024		5/1/2024	5/1/2024	6/20/2024	5/1/2024	6/20/2024					
Sample ID:	IN_20230502 Result	Q	IN_20231017 Result	Q	WW-050124 Result	Q	MW-1 Result	MW-2 Result	MW-3s Result	MW-3d Result	MW-4 Result	Standard	Criteria	Units	Reporting Limit	Method Reference
Analyte																
1-Methylnaphthalene					ND	Q-30						--	--	ug/L	--	EPA 8270E
2-Methylnaphthalene					ND	Q-30						--	--	ug/L	--	EPA 8270E
Naphthalene					ND	Q-30						--	--	ug/L	--	EPA 8270E
Phenanthrene					ND							--	--	ug/L	--	EPA 8270E
Pyrene					ND							--	--	ug/L	--	EPA 8270E
Carbazole					ND							--	--	ug/L	--	EPA 8270E
Dibenzofuran					ND							--	--	ug/L	--	EPA 8270E
2-Chlorophenol					ND							--	--	ug/L	--	EPA 8270E
4-Chloro-3-methylphenol					ND							--	--	ug/L	--	EPA 8270E
2,4-Dichlorophenol					ND							--	--	ug/L	--	EPA 8270E
2,4-Dimethylphenol					ND							--	--	ug/L	--	EPA 8270E
2,4-Dinitrophenol					ND							--	--	ug/L	--	EPA 8270E
4,6-Dinitro-2-methylphenol					ND							--	--	ug/L	--	EPA 8270E
2-Methylphenol					ND							--	--	ug/L	--	EPA 8270E
3+4-Methylphenol(s)					180							--	--	ug/L	--	EPA 8270E
2-Nitrophenol					ND							--	--	ug/L	--	EPA 8270E
4-Nitrophenol					ND							--	--	ug/L	--	EPA 8270E
Pentachlorophenol (PCP)					ND							--	--	ug/L	--	EPA 8270E
Phenol					26.8							--	--	ug/L	--	EPA 8270E
2,3,4,6-Tetrachlorophenol					ND							--	--	ug/L	--	EPA 8270E
2,3,5,6-Tetrachlorophenol					ND							--	--	ug/L	--	EPA 8270E
2,4,5-Trichlorophenol					ND							--	--	ug/L	--	EPA 8270E
2,4,6-Trichlorophenol					ND							--	--	ug/L	--	EPA 8270E
Bis(2-ethylhexyl)phthalate					ND							--	--	ug/L	--	EPA 8270E
Butyl benzyl phthalate					ND							--	--	ug/L	--	EPA 8270E
Diethylphthalate					ND							--	--	ug/L	--	EPA 8270E
Dimethylphthalate					ND							--	--	ug/L	--	EPA 8270E
Di-n-butylphthalate					ND							--	--	ug/L	--	EPA 8270E
Di-n-octyl phthalate					ND							--	--	ug/L	--	EPA 8270E
N-Nitrosodimethylamine					ND							--	--	ug/L	--	EPA 8270E
N-Nitroso-di-n-propylamine					ND	R-02						--	--	ug/L	--	EPA 8270E
N-Nitrosodiphenylamine					ND							--	--	ug/L	--	EPA 8270E
Bis(2-Chloroethoxy) methane					ND							--	--	ug/L	--	EPA 8270E
Bis(2-Chloroethyl) ether					ND							--	--	ug/L	--	EPA 8270E
2,2'-Oxybis(1-Chloropropane)					ND							--	--	ug/L	--	EPA 8270E
Hexachlorobenzene					ND							--	--	ug/L	--	EPA 8270E
Hexachlorobutadiene					ND	Q-30						--	--	ug/L	--	EPA 8270E
Hexachlorocyclopentadiene					ND							--	--	ug/L	--	EPA 8270E
Hexachloroethane					ND	Q-30						--	--	ug/L	--	EPA 8270E
2-Chloronaphthalene					ND	Q-30						--	--	ug/L	--	EPA 8270E
1,2,4-Trichlorobenzene					ND	Q-30						--	--	ug/L	--	EPA 8270E
4-Bromophenyl phenyl ether					ND							--	--	ug/L	--	EPA 8270E
4-Chlorophenyl phenyl ether					ND	Q-30						--	--	ug/L	--	EPA 8270E
Aniline					ND							--	--	ug/L	--	EPA 8270E
4-Chloroaniline					ND							--	--	ug/L	--	EPA 8270E
2-Nitroaniline					ND							--	--	ug/L	--	EPA 8270E
3-Nitroaniline					ND							--	--	ug/L	--	EPA 8270E
4-Nitroaniline					ND							--	--	ug/L	--	EPA 8270E
Nitrobenzene					ND							--	--	ug/L	--	EPA 8270E
2,4-Dinitrotoluene					ND							--	--	ug/L	--	EPA 8270E
2,6-Dinitrotoluene					ND							--	--	ug/L	--	EPA 8270E
Benzoic acid					117							--	--	ug/L	--	EPA 8270E
Benzyl alcohol					ND							--	--	ug/L	--	EPA 8270E
Isophorone					ND							--	--	ug/L	--	EPA 8270E
Azobenzene (1,2-DPH)					ND							--	--	ug/L	--	EPA 8270E
Bis(2-Ethylhexyl) adipate					ND							--	--	ug/L	--	EPA 8270E
3,3'-Dichlorobenzidine					ND	Q-52						--	--	ug/L	--	EPA 8270E



Sample Date:	5/2/2023		10/17/2023		5/1/2024		5/1/2024	5/1/2024	6/20/2024	5/1/2024	6/20/2024					
Sample ID:	IN_20230502 Result	Q	IN_20231017 Result	Q	WW-050124 Result	Q	MW-1 Result	MW-2 Result	MW-3s Result	MW-3d Result	MW-4 Result	Standard	Criteria	Units	Reporting Limit	Method Reference
Analyte																
1,2-Dinitrobenzene					ND							-	-	ug/L	--	EPA 8270E
1,3-Dinitrobenzene					ND							-	-	ug/L	--	EPA 8270E
1,4-Dinitrobenzene					ND							-	-	ug/L	--	EPA 8270E
Pyridine					ND							-	-	ug/L	--	EPA 8270E
1,2-Dichlorobenzene					ND	Q-30						-	-	ug/L	--	EPA 8270E
1,3-Dichlorobenzene					ND	Q-30						-	-	ug/L	--	EPA 8270E
1,4-Dichlorobenzene					ND	Q-30						-	-	ug/L	--	EPA 8270E
Synthetic Organic Chemicals																
1,2-Dibromo-3-chloropropane	ND	B										-	-	ug/L	0	EPA 504.1
Ethylene Dibromide	ND	B										-	-	ug/L	0	EPA 504.1
Chlordane	ND	B										-	-	ug/L	0.2	EPA 508
Endrin	ND	B										-	-	ug/L	0.01	EPA 508
BHC-Gamma Lindane	ND	B										-	-	ug/L	0.01	EPA 508
Heptachlor	ND	B										-	-	ug/L	0.01	EPA 508
Heptachlor Epoxide	ND	B										-	-	ug/L	0.01	EPA 508
Methoxychlor	ND	B										-	-	ug/L	0.01	EPA 508
Polychlorinated Biphenyls	ND	B										-	-	ug/L	0.2	EPA 508
Toxaphene	ND	B										-	-	ug/L	0.3	EPA 508
2,4,5-TP Silvex	ND	B										-	-	ug/L	5	EPA 515.3
Dalapon	ND	B										-	-	ug/L	5	EPA 515.3
Dinoseb	ND	B										-	-	ug/L	1	EPA 515.3
Pentachlorophenol	ND	B										-	-	ug/L	0.5	EPA 515.3
Picloram	ND	B										-	-	ug/L	5	EPA 515.3
Alachlor	ND	B										-	-	ug/L	0.2	EPA 525.2
Atrazine	ND	B										-	-	ug/L	0.3	EPA 525.2
Benzo(a)pyrene	ND	B										-	-	ug/L	0.1	EPA 525.2
Bis(2-ethylhexyl)phthalate	9.01	B										-	-	ug/L	2	EPA 525.2
Bis(2-ethylhexyl)adipate	ND	B										-	-	ug/L	4	EPA 525.2
Hexachlorobenzene	ND	B										-	-	ug/L	0.3	EPA 525.2
Hexachlorocyclopentadiene	ND	B										-	-	ug/L	5	EPA 525.2
Simazine	ND	B										-	-	ug/L	0.4	EPA 525.2
Carbofuran	ND	B										-	-	ug/L	4	EPA 531.2
Vydate	ND	B										-	-	ug/L	4	EPA 531.2
Endothall	ND	B										-	-	ug/L	10	EPA 548.1
Diquat	ND	B										-	-	ug/L	10	EPA 549.2
2,4-D	ND	B										-	-	ug/L	2	EPA 515.3
Glyphosate	ND	B										-	-	ug/L	50	EPA 547
Total Metals																
Aluminum	275				189							50-200	MCL	ug/L	50	EPA 6020B/SM3113B
Antimony	ND				ND							6	MCL	ug/L	5	EPA 6020B/SM3113B
Arsenic	ND				1.02							10	MCL	ug/L	2	EPA 6020B/SM3113B
Barium	10.9	B			9.83	B						2000	MCL	ug/L	0.5	EPA 6020B/SM3113B
Beryllium	ND				ND							4	MCL	ug/L	1	EPA 6020B/SM3113B
Cadmium	ND				ND							5	MCL	ug/L	1	EPA 6020B/SM3113B
Chromium	ND				2.12							100	MCL	ug/L	20	EPA 6020B/SM3113B
Copper	ND				13.1							1000	MCL	ug/L	2	EPA 6020B/SM3113B
Iron	286				0.792							-	-	ug/L	100	EPA 6020B/SM3113B
Lead	ND	B-02				B-02						15	MCL	ug/L	1	EPA 6020B/SM3113B
Magnesium					9140							-	-	ug/L		EPA 6020B
Manganese	ND				28.7							50	MCL	ug/L	50	EPA 6020B/SM3113B
Mercury	ND				ND							2	MCL	ug/L	1	EPA 6020B/SM3113B
Molybdenum		B-02			ND	B-02						-	-	ug/L		EPA 6020B
Nickel	ND				2.19							-	-	ug/L	50	EPA 6020B/SM3113B
Potassium					16700							-	-	ug/L		EPA 6020B
Selenium	ND				ND							50	MCL	ug/L	5	EPA 6020B/SM3113B
Silver	ND				ND							100	MCL	ug/L	10	EPA 6020B/SM3113B
Sodium	50,200				40400							-	-	ug/L	1000	EPA 6020B/SM3113B

Sample Date:	5/2/2023		10/17/2023		5/1/2024		5/1/2024	5/1/2024	6/20/2024	5/1/2024	6/20/2024					
Sample ID:	IN_20230502 Result	Q	IN_20231017 Result	Q	WW-050124 Result	Q	MW-1 Result	MW-2 Result	MW-3s Result	MW-3d Result	MW-4 Result	Standard	Criteria	Units	Reporting Limit	Method Reference
Analyte																
Thallium	ND				ND							2	MCL	ug/L	1	EPA 6020B/SM3113B
Boron		R-04			274	R-04						–	–	ug/L	–	EPA 6020B
Lithium		B-02			ND	B-02						–	–	ug/L	–	EPA 6020B
Strontium					94.9							–	–	ug/L	–	EPA 6020B
Vanadium					4.09							–	–	ug/L	–	EPA 6020B
Zinc	54.7				61.5							5000	MCL	ug/L	10	EPA 6020B/SM3113B
Calcium					21500							–	–	ug/L		EPA 6020B
Ammonia (NH3) by Gas Diffusion and Colormetric Detection																
Ammonia as N					51.8							–	–	mg/L		SM 4500-NH3 G
Anions by Ion Chromatography																
Bromide					ND							–	–	mg/L	–	EPA 300.0
Chloride					37.1							250	MCL	mg/L	–	EPA 300.0
Fluoride	7.41*/ND		ND		ND							2	MCL	mg/L	0.2	EPA 300.0
Nitrate-Nitrogen	ND				ND							10	MCL	mg/L	0.2	EPA 300.0
Nitrite-Nitrogen	ND				ND							1	MCL	mg/L	0.2	EPA 300.0
Sulfate					10.9							250	MCL	mg/L	–	EPA 300.0
Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection																
Total Cyanide					0.0235							–	–	mg/L	–	D7511-12
Total Phosphorus by Persulfate Digestion/Colorimetric Spectrophotometry																
Phosphorus					6.01							–	–	mg/L	–	SM 4500-P E
Solid and Moisture Determinations																
Total Dissolved Solids					307							500	MCL	mg/L	–	SM 2540 C
General Chemistry Parameters																
pH					7.2	H-12						6.5-8.5	–	pH Units	–	SM 4500-H+ B
pH Temperature (deg C)					20.4	H-12						–	–	pH Units	–	SM 4500-H+ B
Conductivity					788							–	–	umhos/cm**	–	SM 2510 B
Total Alkalinity	279				296							–	–	mg CaCO3/L	10	SM2320B
Bicarbonate Alkalinity	340.4				296							–	–	mg CaCO3/L	10	SM2320B
Hardness as CaCO3	86											–	–	mg CaCO3/L	10	SM2320B
Carbonate Alkalinity					ND							–	–	mg CaCO3/L	–	SM 2510 B
Hydroxide Alkalinity					ND									mg CaCO3/L	–	SM 2510 B
Radionuclides																
Uranium	ND											30	MCL	ug/L	0.3	E200.8
Gross Alpha	-5±1.7	U										–	–	pCi/L	3.1	EPA9.00
Gross Beta	14.8±3.1											–	–	pCi/L	3.9	EPA9.01
Radium 226	-0.05±0.2	U										–	–	pCi/L	0.3	EPA903.0
Radium 228	2.5±1.1											–	–	pCi/L	1.6	RA-05
Radium 226+228	2.6±1.1											–	–	pCi/L	1.6	A7500-RA
Field Parameters																
Temperature							12.0	11.7	13.5	12.7	13.7	–	–	°C	–	Field Instrument
Specific Conductivity							239.1	176.5	133.0	199.2	88.6	–	–	uS/cm	–	Field Instrument
Dissolved Oxygen							5.0	7.4	5.1	4.1	5.8	–	–	mg/L	–	Field Instrument
pH (field)							6.06	6.32	6.03	6.85	6.19	–	–	pH Units	–	Field Instrument
Oxidation-Reduction Potential							256.9	240.9	167.4	204.9	162.7	–	–	mV	–	Field Instrument
Turbidity							0.22	0.32	0.33	0.94	0.65	–	–	NTU	–	Field Instrument

Notes:

Analyte Detected Above MCL

MCL: Maximum Contaminant Level (the highest level of contamination that is considered acceptable in drinking water)

MRL: Method Reporting Limit (lowest amount (minimum concentration) of a chemical detected in a sample that can be considered reliable)

ND: Analyte NOT DETECTED at or above the detection or reporting limit

Detection Limit: Lowest concentration of an analyte that can be reliably detected

Reporting Limit: Lowest concentration of analyte that a laboratory can report with reasonable accuracy for a specific sample

B: Neilson Research Corperation, ORELAP ID#OR100016

U: Not detected at Minimum Detectable Concentration

Q: Laboratory Data Qualifier

\* False positive. Fluoride was detected in a sample of untreated wastewater collected on May 2, 2023. Because this high level was an unexpected result, the City re-sampled untreated wastewater for fluoride in duplicate on October 17, 2023. Fluoride was not detected in either of the subsequent sample analyses and the May 2 detection of fluoride is considered to be lab error.

Table 5  
Water Quality Laboratory Analytical Results - PFAS  
Gates/Mill City Water Quality Sampling and Analysis Technical Memorandum

Sample Location	Sample Date	Lab Report ID	Lab
MW-1	5/1/2024	MEE0128	Anatek Labs, Inc.
MW-2	5/1/2024	MEE0128	Anatek Labs, Inc.
MW-3d	5/1/2024	MEE0128	Anatek Labs, Inc.
MW-3s	6/20/2024	MEF0657	Anatek Labs, Inc.
MW-4	6/20/2024	MEF0657	Anatek Labs, Inc.
Wastewater Influent	5/1/2024	MEE0128	Anatek Labs, Inc.
Santiam River SW-1	5/1/2024	MEE0128	Anatek Labs, Inc.
Santiam River SW-2	5/1/2024	MEE0128	Anatek Labs, Inc.
GM1-MW2	6/20/2024	MEF0657	Anatek Labs, Inc.
GM1-MW3	6/20/2024	MEF0657	Anatek Labs, Inc.

Sample Date:	5/1/2024										6/20/2024															
Sample Location:	Treatment Plant						Santiam River				Treatment Plant						Site GM1									
Sample ID:	MW-1 Result	Q	MW-2 Result	Q	MW-3d Result	Q	SW-1 Result	Q	SW-1 Result	Q	Influent Result	Q	MW-3s Result	Q	MW-4 Result	Q	GM1-MW2 Result	Q	GM1-MW3 Result	Q	Standard	Criteria	Units	MDL	PQL	Method Reference
Analyte																										
11Cl-PF30UdS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00392	0.01	EPA 1633
3:3FTCA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0112	0.05	EPA 1633
4:2FTS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00316	0.02	EPA 1633
5:3FTCA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0445	0.1	EPA 1633
6:2FTS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00306	0.02	EPA 1633
7:3FTCA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0474	0.1	EPA 1633
8:2FTS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00428	0.02	EPA 1633
9Cl-PF30NS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00514	0.01	EPA 1633
ADONA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0039	0.01	EPA 1633
HFPO-DA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.01	MCL	ug/L	0.00294	0.01	EPA 1633
NEtFOSA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00178	0.01	EPA 1633
NEtFOSE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0015	0.01	EPA 1633
N-EtFOSSA	ND		ND		ND		ND		ND		0.0058		ND		ND		ND		ND		--	--	ug/L	0.0012	0.01	EPA 1633
NFDHA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00522	0.02	EPA 1633
NMeFOSA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00124	0.01	EPA 1633
N-MeFOSAA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.001	0.01	EPA 1633
NMeFOSE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00186	0.01	EPA 1633
PFBA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0147	0.02	EPA 1633
PFBS	0.00414	J	0.003	J	ND	J	ND	J	ND	J	0.00446		0.00198		ND		ND		ND		--	--	ug/L	0.00066	0.01	EPA 1633
PFDA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00238	0.01	EPA 1633
PFDoA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00192	0.01	EPA 1633
PFDoS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00106	0.01	EPA 1633
PFDS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00092	0.01	EPA 1633
PFEESA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00232	0.02	EPA 1633
PFHpA	0.00151	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0012	0.01	EPA 1633
PFHpS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00092	0.01	EPA 1633
PFHxA	0.0059	J	0.00212	J	ND		ND		ND		0.00222	J	ND		ND		ND		ND		--	--	ug/L	0.00084	0.01	EPA 1633
PFHxS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.01	MCL	ug/L	0.00104	0.01	EPA 1633
PFMBA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0024	0.02	EPA 1633
PFMPA	ND		ND		ND		ND		ND		0.00458	J	ND		ND		ND		ND		--	--	ug/L	0.00152	0.02	EPA 1633
PFNA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		0.01	MCL	ug/L	0.00122	0.01	EPA 1633
PFNS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00106	0.01	EPA 1633
PFOA	0.00792	J	0.0029	J	ND		ND		ND		ND		ND		ND		ND		ND		0.004	MCL	ug/L	0.00162	0.01	EPA 1633
PFOS	0.0131		0.00416		0.00142	J	ND		ND		ND		0.00413		ND		ND		ND		0.004	MCL	ug/L	0.00126	0.01	EPA 1633
PFOSA	0.000926	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.0009	0.01	EPA 1633
PFPeA	0.00524	J	ND		ND		ND		ND		ND		ND		ND		0.00238	J	0.0056	J	--	--	ug/L	0.00204	0.01	EPA 1633
PFPeS	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00108	0.01	EPA 1633
PFTeDA	ND		ND		ND		ND		ND		ND		ND		ND		ND		0.0106	J	--	--	ug/L	0.0031	0.02	EPA 1633
PFTrDA	ND		ND		ND		ND		ND		ND		ND		ND		ND		0.0146	J	--	--	ug/L	0.00358	0.02	EPA 1633
PFUnA	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		--	--	ug/L	0.00198	0.01	EPA 1633

Notes:

Constituent Detected Above MCL

MDL: Method Detection Limit

PQL: Practical Quantitation Limits

J: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

U: Compound was analyzed for but not detected

ND: Not Detected

Dry: Sample results reported on a dry weight basis

\* EPA NPDWR Maximum Contaminant Level (<https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>)

RPD: Relative Percent Difference

%REC: Percent Recovery

Source: Sample that was spiked or duplicated

Table 6

## Water Quality Laboratory Analytical Results - Santiam River

## Gates/Mill City Water Quality Sampling and Analysis Technical Memorandum

Sample Location	Sample Date	Lab Report ID	Lab
SW-1	5/1/2024	A4E0861	Apex Laboratories
SW-2			

Sample Date:		5/1/2024		Standard	Criteria	Units	Reporting Limit	Method	Q
Analyte		SW-1 Result	SW-2 Result						
Total Dissolved Solids (TDS)		48.0	49.0	500	SMCL	mg/L	5	SM2540C	
Total Suspended Solids (TSS)		ND	ND	–	–	mg/L	5	SM5210B	TSS
Biochemical Oxygen Demand (BOD)		ND	ND	–	–	mg/L	1.88	SM5210B	
pH*		7.5	7.5	6.5-8.5	SMCL	pH units	–	SM4500-H+B	H-12

## Notes:

H-12: Sample Analysis or Filtration was performed >15 minutes after sample collection.

TSS: Dried residue was less than 2.5 mg as specified in the method. Results meet regulatory requirements.

MCL Maximum Contaminant Level

SMCL Secondary Maximum Contaminant Level

\* Lab pH value (not collected in the field)

Table 7  
Water Quality Laboratory Analytical Results - Seeps  
Gates/Mill City Water Quality Sampling and Analysis Technical Memorandum

Sample ID	Sample Date	Lab Report ID	Lab
1-9	4/11/2024	A4D1160 - 04 17 24 2005	Apex Laboratories
1-9	4/18/2024	A4D1382 - 04 29 24 1805	Apex Laboratories

Sample ID: Analyte	1 Result	2 Result	3 Result	4 Result	5 Result	6 Result	7 Result	8 Result	9 Result	Sample Date	Standard	Criteria	Units	Reporting Limit	Method	Q
Nitrate	1.33	1.18	7.57	7.92	7.58	5.33	1.63	1.57	1.32	4/11/2024	10	MCL	mg/L	0.25	EPA300.0	
Total Dissolved Solids (TDS)	89	90	160	166	165	148	95	111	145	4/18/2024	500	SMCL	mg/L	5	SM2540C	
Total Suspended Solids (TSS)	5	5	5	41	5	162	5	582	50		--	--	mg/L	5	SM5210B	TSS
Biochemical Oxygen Demand	1.88	1.88	1.88	1.88	1.88	1.88	1.88	3.21	2.93		--	--	mg/L	1.88	SM5210B	
pH*	6.7	6.6	6	6.4	6.2	6.4	6.3	6.7	7.2		6.5-8.5	SMCL	pH units	--	SM4500-H+B	H-12

Notes:  
H-12: Sample Analysis or Filtration was performed >15 minutes after sample collection (for all samples).  
TSS: Dried residue was less than 2.5mg as specified in the method (for all samples). Results meet regulatory requirements.  
MCL Maximum Contaminant Level  
SMCL Secondary Maximum Contaminant Level  
\* Lab pH value (not collected in the field)



## ATTACHMENT A

Lab Reports



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Monday, February 26, 2024

Jesse Hall  
GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

RE: A4B1471 - Santiam Canyon-Idanha - 464.020

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4B1471, which was received by the laboratory on 2/23/2024 at 2:25:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>	
(See Cooler Receipt Form for details)	
Default Cooler	5.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
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503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam Canyon-Idanha

Project Number: 464.020

Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GM1MW1 20240223	A4B1471-01	Water	02/23/24 11:45	02/23/24 14:25

Apex Laboratories

Philip Nerenberg, Lab Director

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Project Number: 464.020

Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1MW1 20240223 (A4B1471-01)				Matrix: Water				
Batch: 24B0829								
Nitrate-Nitrogen	0.843	---	0.250	mg/L	1	02/23/24 18:25	EPA 300.0	

Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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Project: Santiam Canyon-Idanha

Project Number: 464.020

Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24B0829 - Method Prep: Aq						Water						
Blank (24B0829-BLK1)			Prepared: 02/23/24 16:16   Analyzed: 02/23/24 17:42									
<u>EPA 300.0</u>												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24B0829-BS1)			Prepared: 02/23/24 16:16   Analyzed: 02/23/24 18:04									
<u>EPA 300.0</u>												
Nitrate-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Duplicate (24B0829-DUP1)			Prepared: 02/23/24 16:16   Analyzed: 02/23/24 18:47									
<u>QC Source Sample: GM1MW1 20240223 (A4B1471-01)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	0.841	---	0.250	mg/L	1	---	0.843	---	---	0.2	3%	
Matrix Spike (24B0829-MS1)			Prepared: 02/23/24 16:16   Analyzed: 02/23/24 19:08									
<u>QC Source Sample: GM1MW1 20240223 (A4B1471-01)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	3.41	---	0.312	mg/L	1	2.50	0.843	103	87-112%	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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Portland, OR 97209

Project: Santiam Canyon-Idanha

Project Number: 464.020

Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

SAMPLE PREPARATION INFORMATION

Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24B0829</u>							
A4B1471-01	Water	EPA 300.0	02/23/24 11:45	02/23/24 16:16	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

Philip Nerenberg, Lab Director

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Portland, OR 97209

Project: Santiam Canyon-Idanha

Project Number: 464.020

Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam Canyon-Idanha**

Project Number: **464.020**

Project Manager: **Jesse Hall**

**Report ID:**

**A4B1471 - 02 26 24 2033**

### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.

The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")  
See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" \*\*\* " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

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Portland, OR 97209

Project: **Santiam Canyon-Idanha**

Project Number: **464.020**

Project Manager: **Jesse Hall**

**Report ID:**

**A4B1471 - 02 26 24 2033**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

**Benzofluoranthene Isomer Reporting:**

Due to coelution on the analytical column, the Benzo(b)fluoranthene results represent the concentration of both Benzo(b)fluoranthene and Benzo(j) fluoranthene. Calibration is based on the response of Benzo(b)fluoranthene, and the results represent the combined Benzo(b+j)fluoranthene(s).

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

**Apex Laboratories, LLC**

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503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam Canyon-Idanha**

Project Number: **464.020**

Project Manager: **Jesse Hall**

**Report ID:**

**A4B1471 - 02 26 24 2033**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)** -

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
<u>All reported analytes are included in Apex Laboratories' current ORELAP scope.</u>					

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam Canyon-IdanhaProject Number: 464.020Project Manager: Jesse Hall

Report ID:

A4B1471 - 02 26 24 2033

## APEX LABS COOLER RECEIPT FORM

Client: GSI Element WO#: A4 B1471Project/Project #: Santiam Canyon / 464.020

## Delivery Info:

Date/time received: 2/23/24 @ 1425 By: kmDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐Cooler Inspection Date/time inspected: 2/23/24 @ 1425 By: kmChain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>5.8</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) Possible reason why:

Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 2/23/24 @ 1439 By: kmAll samples intact? Yes ☒ No ☐ Comments:Bottle labels/COCs agree? Yes ☐ No ☒ Comments: label reads 1245COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments:Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒

Comments:

Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒ pH ID:

Comments:

Additional information:

Labeled by:

Witness:

Cooler Inspected by:

Form Y-003 R-01

Apex Laboratories

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Philip Nerenberg, Lab Director

Page 11 of 11





Burlington, WA Corporate Laboratory (a)  
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Bellingham, WA Microbiology (b)  
805 Orchard Dr Ste 4 - Bellingham, WA 98225 - 360.715.1212

Portland, OR Microbiology/Chemistry (c)  
9725 SW Commerce Cr Ste A2 - Wilsonville, OR 97070 - 503.682.7802  
Corvallis, OR Microbiology/Chemistry (d)  
1100 NE Circle Blvd, Ste 130 - Corvallis, OR 97330 - 541.753.4946  
Bend, OR Microbiology (e)  
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425



ORELAP 4072  
Idaho WA00097

Page 1 of 1

## VOLATILE ORGANIC COMPOUNDS (VOC) REPORT

Client Name: GSI Water Solutions, Inc.  
650 NE Holladay Street Ste 900  
Portland, OR 97232

Reference Number: 23-22395  
Project: Santiam Canyon Infiltration Eval

System Name:  
System ID Number:  
DWP Source Number:  
Multiple Sources:  
Sample Type:  
Sample Purpose: Investigative or Other  
Sample Location: GM1-MW1  
County:  
Sampled By: Jesse Hall  
Sampler Phone:

Field ID: GM1  
Lab Number: 23\_44385  
Date Collected: 7/25/23 11:00  
Date Extracted: 524\_230728  
Date Analyzed: 07/28/23  
Report Date: 8/4/23  
Analyst: NML  
Approved By: pdm

Authorized By:

Thanh B Phan  
Lab Manager, Portland

EPA#	COMPOUNDS	RESULTS	UNITS	LRL	MCL	Method	Lab Code*	COMMENT
	<b>EPA/State Regulated</b>							
2977	1,1 - DICHLOROETHYLENE	ND	mg/L	0.0005	0.007	524.2	4072 a	
2981	1,1,1 - TRICHLOROETHANE	ND	mg/L	0.0005	0.200	524.2	4072 a	
2985	1,1,2 - TRICHLOROETHANE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2980	1,2 - DICHLOROETHANE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2983	1,2 - DICHLOROPROPANE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2378	1,2,4 - TRICHLOROBENZENE	ND	mg/L	0.0005	0.070	524.2	4072 a	
2990	BENZENE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2982	CARBON TETRACHLORIDE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2989	CHLOROBENZENE	ND	mg/L	0.0005	0.100	524.2	4072 a	
2380	CIS - 1,2 - DICHLOROETHYLENE	ND	mg/L	0.0005	0.070	524.2	4072 a	
2992	ETHYLBENZENE	ND	mg/L	0.0005	0.700	524.2	4072 a	
2964	METHYLENE CHLORIDE (Dichloromethane)	ND	mg/L	0.0005	0.005	524.2	4072 a	
2968	O - DICHLOROBENZENE	ND	mg/L	0.0005	0.600	524.2	4072 a	
2969	P - DICHLOROBENZENE	ND	mg/L	0.0005	0.075	524.2	4072 a	
2996	STYRENE	ND	mg/L	0.0005	0.100	524.2	4072 a	
2979	T - 1,2 - DICHLOROETHYLENE	ND	mg/L	0.0005	0.100	524.2	4072 a	
2987	TETRACHLOROETHYLENE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2991	TOLUENE	ND	mg/L	0.0005	1.0	524.2	4072 a	
2955	TOTAL XYLENES	ND	mg/L	0.0005	10.0	524.2	4072 a	
2984	TRICHLOROETHYLENE	ND	mg/L	0.0005	0.005	524.2	4072 a	
2976	VINYL CHLORIDE	ND	mg/L	0.0005	0.002	524.2	4072 a	

### NOTES:

If a compound is detected > or = to the Lower Reporting Level, LRL, specified increased monitoring frequencies may occur per PHD.

MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA. Blank MCL value indicates a level is not currently established.

ND (Not Detected): indicates that the parameter was not detected above the Lower Reporting Limit (LRL).

\* Lab Code - lists the laboratory accreditation code plus a letter at the far right to indicate the Edge Analytical lab facility where the analyses was performed.

An \* in front of the parameter name indicates it is not NELAP accredited but it is accredited through WSDOH or USEPA Region 10.

These test results meet all the requirements of NELAP, unless otherwise stated in writing, and relate only to these samples. Estimates of uncertainty are not included in this report. If this information is required please contact us at the phone number listed in the report header.

If you have any questions concerning this report contact our office at the above phone number.

FORM: cVOC OR.rpt



Burlington, WA *Corporate Laboratory (a)*  
1620 S Walnut St - Burlington, WA 98233 - 800.755.9295 • 360.757.1400  
Bellingham, WA *Microbiology (b)*  
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1100 NE Circle Blvd, Ste 130 - Corvallis, OR 97330 - 541.753.4946  
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20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

ORELAP 4072  
Idaho WA00097  
Page 1 of 1

## ORGANICS IN DRINKING WATER

Client Name: GSI Water Solutions, Inc.  
55 SW Yamhill Street Ste 300  
Portland, OR 97204

Reference Number: 23-15512  
Project: Santiam Canyon 0464.020.001 -

System Name:  
System ID Number:  
DWP Source Number:  
Multiple Sources:  
Sample Type:  
Sample Purpose: Investigative or Other  
Sample Composition:  
Sample Location: GM1MW1  
County:

Field ID: GM1MW10523  
Lab Number: 23\_31092  
Date Collected: 5/28/23 11:20  
Sampled By: Mellisa Girbach  
Sampler Phone:  
Report Date: 7/12/23  
Approved By: nml,pdm

Authorized By:

Thanh B Phan  
Lab Manager, Portland

EPA#	COMPOUNDS	RESULTS	UNITS	LRL	MCL	METHOD	Analyst	Lab	Analyzed	COMMENT
	<b>Synthetic Organic Chemicals</b>									
2105	2,4 - D	ND	mg/L	0.0001	0.070	515.4	BFR	4072	06/09/23	
2110	2,4,5 - TP (SILVEX)	ND	mg/L	0.0001	0.050	515.4	BFR	4072	06/09/23	
2035	DI(2-ETHYLHEXYL)-ADIPATE	ND	mg/L	0.00005	0.400	525.2	MA	4072	06/30/23	
2051	ALACHLOR	ND	mg/L	0.00005	0.002	525.2	MA	4072	06/30/23	
2050	ATRAZINE	ND	mg/L	0.00005	0.003	525.2	MA	4072	06/30/23	
2306	BENZO(A)PYRENE	ND	mg/L	0.00005	0.0002	525.2	MA	4072	06/30/23	
2010	LINDANE (BHC - GAMMA)	ND	mg/L	0.00005	0.0002	525.2	MA	4072	06/30/23	
2046	CARBOFURAN	ND	mg/L	0.001	0.040	531.2	MA	4072	06/21/23	
2959	CHLORDANE	ND	mg/L	0.0001	0.002	508.1	MA	4072	06/22/23	
2031	DALAPON	ND	mg/L	0.0005	0.200	515.4	BFR	4072	06/09/23	
2931	1,2-DIBROMO-3-CHLOROPROPANE	ND	mg/L	0.00002	0.0002	504.1	MA	4072	06/07/23	
2041	DINOSEB	ND	mg/L	0.0001	0.007	515.4	BFR	4072	06/09/23	
2032	DIQUAT	ND	mg/L	0.0004	0.020	549.2	KRC	4072	06/07/23	
2033	ENDOTHALL	ND	mg/L	0.005	0.100	548.1	MA	4072	06/14/23	
2005	ENDRIN	ND	mg/L	0.00005	0.002	525.2	MA	4072	06/30/23	
2946	1,2 - DIBROMOETHANE (EDB)	ND	mg/L	0.00002	0.00005	504.1	MA	4072	06/07/23	
2034	GLYPHOSATE	ND	mg/L	0.005	0.700	547	MA	4072	06/20/23	
2067	HEPTACHLOR EPOXIDE "B"	ND	mg/L	0.00005	0.0002	525.2	MA	4072	06/30/23	
2065	HEPTACHLOR	ND	mg/L	0.00005	0.0004	525.2	MA	4072	06/30/23	
2274	HEXACHLOROBENZENE	ND	mg/L	0.00005	0.001	525.2	MA	4072	06/30/23	
2042	HEXACHLOROCYCLO-PENTADIENE	ND	mg/L	0.00005	0.050	525.2	MA	4072	06/30/23	
2015	METHOXYCHLOR	ND	mg/L	0.00005	0.040	525.2	MA	4072	06/30/23	
2326	PENTACHLOROPHENOL	ND	mg/L	0.00004	0.001	515.4	BFR	4072	06/09/23	
2039	DI(2-ETHYLHEXYL)-PHTHALATE	ND	mg/L	0.0001	0.006	525.2	MA	4072	06/30/23	
2040	PICLORAM	ND	mg/L	0.0001	0.500	515.4	BFR	4072	06/09/23	
2037	SIMAZINE	ND	mg/L	0.00005	0.004	525.2	MA	4072	06/30/23	
2020	TOXAPHENE	ND	mg/L	0.001	0.003	508.1	MA	4072	06/22/23	
2036	OXAMYL (VYDATE)	ND	mg/L	0.001	0.200	531.2	MA	4072	06/21/23	
2383	PCBS (Total Aroclors)	ND	mg/L	0.0002	0.0005	508.1	MA	4072	06/22/23	

### NOTES:

MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; a blank MCL value indicates a level is not currently established.  
ND (Not Detected): indicates that the parameter was not detected above the Lower Reporting Limit (LRL).

If you have any questions concerning this report contact Thanh B Phan at the above phone number.

FORM: SOC\_OR



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Tuesday, May 14, 2024

Jesse Hall  
GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

RE: A4D1585 - Santiam - 00464.027

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4D1585, which was received by the laboratory on 4/25/2024 at 4:47:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information			
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>			
(See Cooler Receipt Form for details)			
Cooler #1	5.9	degC	Cooler #2 4.8 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam  
Project Number: 00464.027  
Project Manager: Jesse Hall

Report ID:  
A4D1585 - 05 14 24 1516

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GM1-MW4-042524	A4D1585-01	Water	04/25/24 11:50	04/25/24 16:47
GM1-MW2-042524	A4D1585-02	Water	04/25/24 14:50	04/25/24 16:47

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0144</b>		
Acetone	ND	---	20.0	ug/L	1	05/03/24 13:27	EPA 8260D	
Acrylonitrile	ND	---	2.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Benzene	ND	---	0.200	ug/L	1	05/03/24 13:27	EPA 8260D	
Bromobenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	05/03/24 13:27	EPA 8260D	
n-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
sec-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
tert-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Carbon disulfide	ND	---	10.0	ug/L	1	05/03/24 13:27	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	

Apex Laboratories

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0144</b>		
1,2-Dichloropropane	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
2-Hexanone	ND	---	10.0	ug/L	1	05/03/24 13:27	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	05/03/24 13:27	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	05/03/24 13:27	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/03/24 13:27	EPA 8260D	
n-Propylbenzene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Styrene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	05/03/24 13:27	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	05/03/24 13:27	EPA 8260D	
m,p-Xylene	ND	---	1.00	ug/L	1	05/03/24 13:27	EPA 8260D	
o-Xylene	ND	---	0.500	ug/L	1	05/03/24 13:27	EPA 8260D	

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0144</b>			
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery: 105 %	Limits: 80-120 %	1	05/03/24 13:27	EPA 8260D		
Toluene-d8 (Surr)		102 %	80-120 %	1	05/03/24 13:27	EPA 8260D		
4-Bromofluorobenzene (Surr)		97 %	80-120 %	1	05/03/24 13:27	EPA 8260D		
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0144</b>			
Acetone	ND	---	20.0	ug/L	1	05/03/24 13:54	EPA 8260D	
Acrylonitrile	ND	---	2.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Benzene	ND	---	0.200	ug/L	1	05/03/24 13:54	EPA 8260D	
Bromobenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	05/03/24 13:54	EPA 8260D	
n-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
sec-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
tert-Butylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Carbon disulfide	ND	---	10.0	ug/L	1	05/03/24 13:54	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Chloroform	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0144</b>		
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2-Dichloropropane	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
2-Hexanone	ND	---	10.0	ug/L	1	05/03/24 13:54	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	05/03/24 13:54	EPA 8260D	
4-Methyl-2-pentanone (MIBK)	ND	---	10.0	ug/L	1	05/03/24 13:54	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/03/24 13:54	EPA 8260D	
n-Propylbenzene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Styrene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
Toluene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	05/03/24 13:54	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	

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Philip Nerenberg, Lab Director

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**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**

Project Number: **00464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0144</b>			
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	05/03/24 13:54	EPA 8260D	
m,p-Xylene	ND	---	1.00	ug/L	1	05/03/24 13:54	EPA 8260D	
o-Xylene	ND	---	0.500	ug/L	1	05/03/24 13:54	EPA 8260D	
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery: 109 %		Limits: 80-120 %	1	05/03/24 13:54	EPA 8260D	
Toluene-d8 (Surr)		101 %		80-120 %	1	05/03/24 13:54	EPA 8260D	
4-Bromofluorobenzene (Surr)		95 %		80-120 %	1	05/03/24 13:54	EPA 8260D	

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Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0053</b>		
Acenaphthene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Acenaphthylene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Anthracene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Benz(a)anthracene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0294	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0294	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0294	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Chrysene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Fluoranthene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Fluorene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0392	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
2-Methylnaphthalene	ND	---	0.0392	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
Naphthalene	ND	---	0.0392	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
Phenanthrene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Pyrene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Carbazole	ND	---	0.0294	ug/L	1	05/02/24 17:11	EPA 8270E	
Dibenzofuran	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
2-Chlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
4-Chloro-3-methylphenol	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4-Dichlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4-Dimethylphenol	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4-Dinitrophenol	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
2-Methylphenol	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
3+4-Methylphenol(s)	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
2-Nitrophenol	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
4-Nitrophenol	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
Phenol	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	

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Project: Santiam

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Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0053</b>		
2,3,5,6-Tetrachlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4,5-Trichlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4,6-Trichlorophenol	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Butyl benzyl phthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Diethylphthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Dimethylphthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Di-n-butylphthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Di-n-octyl phthalate	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
N-Nitrosodimethylamine	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
N-Nitrosodiphenylamine	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
Hexachlorobenzene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	
Hexachlorobutadiene	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
Hexachlorocyclopentadiene	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
Hexachloroethane	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
2-Chloronaphthalene	ND	---	0.0196	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
1,2,4-Trichlorobenzene	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
4-Bromophenyl phenyl ether	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
Aniline	ND	---	0.0980	ug/L	1	05/02/24 17:11	EPA 8270E	
4-Chloroaniline	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
2-Nitroaniline	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
3-Nitroaniline	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
4-Nitroaniline	ND	---	0.392	ug/L	1	05/02/24 17:11	EPA 8270E	
Nitrobenzene	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
2,4-Dinitrotoluene	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
2,6-Dinitrotoluene	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzoic acid	ND	---	2.45	ug/L	1	05/02/24 17:11	EPA 8270E	
Benzyl alcohol	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	

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## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0053</b>			
Isophorone	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
Azobenzene (1,2-DPH)	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
3,3'-Dichlorobenzidine	ND	---	0.980	ug/L	1	05/02/24 17:11	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
1,3-Dinitrobenzene	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
1,4-Dinitrobenzene	ND	---	0.490	ug/L	1	05/02/24 17:11	EPA 8270E	
Pyridine	ND	---	0.196	ug/L	1	05/02/24 17:11	EPA 8270E	
1,2-Dichlorobenzene	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
1,3-Dichlorobenzene	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
1,4-Dichlorobenzene	ND	---	0.0490	ug/L	1	05/02/24 17:11	EPA 8270E	Q-30
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>	66 %	<i>Limits:</i>	44-120 %	1	05/02/24 17:11	EPA 8270E
<i>2-Fluorobiphenyl (Surr)</i>			53 %		44-120 %	1	05/02/24 17:11	EPA 8270E
<i>Phenol-d6 (Surr)</i>			24 %		10-133 %	1	05/02/24 17:11	EPA 8270E
<i>p-Terphenyl-d14 (Surr)</i>			87 %		50-134 %	1	05/02/24 17:11	EPA 8270E
<i>2-Fluorophenol (Surr)</i>			31 %		19-120 %	1	05/02/24 17:11	EPA 8270E
<i>2,4,6-Tribromophenol (Surr)</i>			79 %		43-140 %	1	05/02/24 17:11	EPA 8270E
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0053</b>			
Acenaphthene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Acenaphthylene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Anthracene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Benz(a)anthracene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzo(a)pyrene	ND	---	0.0326	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzo(b)fluoranthene	ND	---	0.0326	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzo(k)fluoranthene	ND	---	0.0326	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Chrysene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Fluoranthene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Fluorene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
1-Methylnaphthalene	ND	---	0.0435	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
2-Methylnaphthalene	ND	---	0.0435	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062GSI Water Solutions55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0053</b>		
Naphthalene	ND	---	0.0435	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
Phenanthrene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Pyrene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Carbazole	ND	---	0.0326	ug/L	1	05/02/24 17:46	EPA 8270E	
Dibenzofuran	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
2-Chlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
4-Chloro-3-methylphenol	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4-Dichlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4-Dimethylphenol	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4-Dinitrophenol	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
2-Methylphenol	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
3+4-Methylphenol(s)	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
2-Nitrophenol	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
4-Nitrophenol	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
Phenol	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
2,3,5,6-Tetrachlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4,5-Trichlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4,6-Trichlorophenol	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Butyl benzyl phthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Diethylphthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Dimethylphthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Di-n-butylphthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Di-n-octyl phthalate	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
N-Nitrosodimethylamine	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
N-Nitrosodiphenylamine	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW2-042524 (A4D1585-02RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0053</b>		
Hexachlorobenzene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	
Hexachlorobutadiene	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
Hexachlorocyclopentadiene	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
Hexachloroethane	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
2-Chloronaphthalene	ND	---	0.0217	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
1,2,4-Trichlorobenzene	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
4-Bromophenyl phenyl ether	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
Aniline	ND	---	0.109	ug/L	1	05/02/24 17:46	EPA 8270E	
4-Chloroaniline	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
2-Nitroaniline	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
3-Nitroaniline	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
4-Nitroaniline	ND	---	0.435	ug/L	1	05/02/24 17:46	EPA 8270E	
Nitrobenzene	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
2,4-Dinitrotoluene	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
2,6-Dinitrotoluene	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzoic acid	ND	---	2.72	ug/L	1	05/02/24 17:46	EPA 8270E	
Benzyl alcohol	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
Isophorone	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
Azobenzene (1,2-DPH)	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
3,3'-Dichlorobenzidine	ND	---	1.09	ug/L	1	05/02/24 17:46	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
1,3-Dinitrobenzene	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
1,4-Dinitrobenzene	ND	---	0.543	ug/L	1	05/02/24 17:46	EPA 8270E	
Pyridine	ND	---	0.217	ug/L	1	05/02/24 17:46	EPA 8270E	
1,2-Dichlorobenzene	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
1,3-Dichlorobenzene	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
1,4-Dichlorobenzene	ND	---	0.0543	ug/L	1	05/02/24 17:46	EPA 8270E	Q-30
Surrogate: Nitrobenzene-d5 (Surr)		Recovery:	63 %	Limits:	44-120 %	1	05/02/24 17:46	EPA 8270E
2-Fluorobiphenyl (Surr)			51 %		44-120 %	1	05/02/24 17:46	EPA 8270E
Phenol-d6 (Surr)			23 %		10-133 %	1	05/02/24 17:46	EPA 8270E
p-Terphenyl-d14 (Surr)			80 %		50-134 %	1	05/02/24 17:46	EPA 8270E
2-Fluorophenol (Surr)			31 %		19-120 %	1	05/02/24 17:46	EPA 8270E

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW2-042524 (A4D1585-02RE1)				Matrix: Water		Batch: 24E0053		
Surrogate: 2,4,6-Tribromophenol (Surr)		Recovery: 70 %	Limits: 43-140 %	1	05/02/24 17:46	EPA 8270E		

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW4-042524 (A4D1585-01)				Matrix: Water				
Batch: 24E0261								
Aluminum	139	---	50.0	ug/L	1	05/08/24 06:45	EPA 6020B	B-02
Antimony	ND	---	1.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Arsenic	ND	---	1.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Barium	2.98	---	2.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Beryllium	ND	---	0.200	ug/L	1	05/08/24 06:45	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	05/08/24 06:45	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Copper	ND	---	2.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Lead	1.79	---	0.200	ug/L	1	05/08/24 06:45	EPA 6020B	
Magnesium	6460	---	150	ug/L	1	05/08/24 06:45	EPA 6020B	
Manganese	40.3	---	1.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/08/24 06:45	EPA 6020B	
Molybdenum	ND	---	1.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Nickel	ND	---	2.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Potassium	1660	---	100	ug/L	1	05/08/24 06:45	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	05/08/24 06:45	EPA 6020B	
Sodium	5500	---	100	ug/L	1	05/08/24 06:45	EPA 6020B	
Thallium	ND	---	0.200	ug/L	1	05/08/24 06:45	EPA 6020B	
Boron	ND	---	10.0	ug/L	1	05/08/24 14:11	EPA 6020B	
Lithium	ND	---	5.00	ug/L	1	05/08/24 14:11	EPA 6020B	
Strontium	86.4	---	5.00	ug/L	1	05/08/24 14:11	EPA 6020B	
Vanadium	3.56	---	2.00	ug/L	1	05/08/24 06:45	EPA 6020B	
Zinc	ND	---	4.00	ug/L	1	05/08/24 06:45	EPA 6020B	
GM1-MW4-042524 (A4D1585-01RE1)				Matrix: Water				
Batch: 24E0261								
Calcium	15400	---	600	ug/L	1	05/09/24 11:30	EPA 6020B	
GM1-MW2-042524 (A4D1585-02)				Matrix: Water				
Batch: 24E0261								
Aluminum	ND	---	50.0	ug/L	1	05/08/24 06:51	EPA 6020B	
Antimony	ND	---	1.00	ug/L	1	05/08/24 06:51	EPA 6020B	

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Philip Nerenberg, Lab Director





## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW2-042524 (A4D1585-02)		Matrix: Water						
Arsenic	ND	---	1.00	ug/L	1	05/08/24 06:51	EPA 6020B	B-02
Barium	2.13	---	2.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Beryllium	ND	---	0.200	ug/L	1	05/08/24 06:51	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	05/08/24 06:51	EPA 6020B	
Chromium	ND	---	2.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Copper	ND	---	2.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Lead	ND	---	0.200	ug/L	1	05/08/24 06:51	EPA 6020B	
Magnesium	6720	---	150	ug/L	1	05/08/24 06:51	EPA 6020B	
Manganese	8.31	---	1.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/08/24 06:51	EPA 6020B	
Molybdenum	ND	---	1.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Nickel	ND	---	2.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Potassium	1380	---	100	ug/L	1	05/08/24 06:51	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	05/08/24 06:51	EPA 6020B	
Sodium	5480	---	100	ug/L	1	05/08/24 06:51	EPA 6020B	
Thallium	ND	---	0.200	ug/L	1	05/08/24 06:51	EPA 6020B	
Boron	ND	---	10.0	ug/L	1	05/08/24 14:16	EPA 6020B	
Lithium	ND	---	5.00	ug/L	1	05/08/24 14:16	EPA 6020B	
Strontium	93.4	---	5.00	ug/L	1	05/08/24 14:16	EPA 6020B	
Vanadium	2.09	---	2.00	ug/L	1	05/08/24 06:51	EPA 6020B	
Zinc	ND	---	4.00	ug/L	1	05/08/24 06:51	EPA 6020B	
GM1-MW2-042524 (A4D1585-02RE1)		Matrix: Water						
Batch: 24E0261								
Calcium	17700	---	600	ug/L	1	05/09/24 11:36	EPA 6020B	

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

ANALYTICAL SAMPLE RESULTS

Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01)</b>				<b>Matrix: Water</b>		<b>Batch: 24D1073</b>		
Ammonia as N	ND	---	0.0200	mg/L	1	04/29/24 13:36	SM 4500-NH3 G	
<b>GM1-MW2-042524 (A4D1585-02)</b>				<b>Matrix: Water</b>		<b>Batch: 24D1073</b>		
Ammonia as N	ND	---	0.0200	mg/L	1	04/29/24 13:39	SM 4500-NH3 G	

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*Philip Nerenberg*

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: **00464.027**

Project Manager: **Jesse Hall**

Report ID:

**A4D1585 - 05 14 24 1516**

ANALYTICAL SAMPLE RESULTS

Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW4-042524 (A4D1585-01)				Matrix: Water				
Batch: 24D1030								
Bromide	ND	---	1.00	mg/L	1	04/26/24 16:14	EPA 300.0	
Chloride	1.84	---	1.00	mg/L	1	04/26/24 16:14	EPA 300.0	
Fluoride	ND	---	1.00	mg/L	1	04/26/24 16:14	EPA 300.0	
Nitrate-Nitrogen	0.699	---	0.250	mg/L	1	04/26/24 16:14	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	04/26/24 16:14	EPA 300.0	
Sulfate	2.06	---	1.00	mg/L	1	04/26/24 16:14	EPA 300.0	
GM1-MW2-042524 (A4D1585-02)				Matrix: Water				
Batch: 24D1030								
Bromide	ND	---	1.00	mg/L	1	04/26/24 18:02	EPA 300.0	
Chloride	1.92	---	1.00	mg/L	1	04/26/24 18:02	EPA 300.0	
Fluoride	ND	---	1.00	mg/L	1	04/26/24 18:02	EPA 300.0	
Nitrate-Nitrogen	0.308	---	0.250	mg/L	1	04/26/24 18:02	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	04/26/24 18:02	EPA 300.0	
Sulfate	2.05	---	1.00	mg/L	1	04/26/24 18:02	EPA 300.0	

Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam  
Project Number: **00464.027**  
Project Manager: **Jesse Hall**

**Report ID:**  
**A4D1585 - 05 14 24 1516**

ANALYTICAL SAMPLE RESULTS

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0029</b>		
Total Cyanide	ND	---	0.00500	mg/L	1	05/01/24 15:24	D7511-12	
<b>GM1-MW2-042524 (A4D1585-02)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0029</b>		
Total Cyanide	ND	---	0.00500	mg/L	1	05/01/24 15:32	D7511-12	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**  
Project Number: **00464.027**  
Project Manager: **Jesse Hall**

**Report ID:**  
**A4D1585 - 05 14 24 1516**

ANALYTICAL SAMPLE RESULTS

Total Phosphorus by Persulfate Digestion/Colorimetric Spectrophotometry

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>GM1-MW4-042524 (A4D1585-01)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0080</b>		
Phosphorus	ND	---	0.100	mg/L	1	05/02/24 16:38	SM 4500-P E	
<b>GM1-MW2-042524 (A4D1585-02)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0080</b>		
Phosphorus	ND	---	0.100	mg/L	1	05/02/24 16:38	SM 4500-P E	

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Project Manager: Jesse Hall

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ANALYTICAL SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW4-042524 (A4D1585-01RE1)				Matrix: Water				
Batch: 24E0112								
Total Dissolved Solids	110	---	5.00	mg/L	1	05/02/24 19:08	SM 2540 C	
GM1-MW2-042524 (A4D1585-02RE1)				Matrix: Water				
Batch: 24E0112								
Total Dissolved Solids	115	---	5.00	mg/L	1	05/02/24 19:08	SM 2540 C	

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Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## ANALYTICAL SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
GM1-MW4-042524 (A4D1585-01)				Matrix: Water				
Batch: 24D0950								
pH	7.3	---		pH Units	1	04/25/24 18:43	SM 4500-H+ B	H-12
pH Temperature (deg C)	21.6	---		pH Units	1	04/25/24 18:43	SM 4500-H+ B	H-12
Batch: 24D1034								
Conductivity	145	---	2.50	umhos/cm @25degC	1	04/26/24 18:00	SM 2510 B	
Batch: 24D1070								
Total Alkalinity	69.0	---	20.0	mg CaCO3/L	1	04/29/24 14:01	SM 2320 B	
Bicarbonate Alkalinity	69.0	---	20.0	mg CaCO3/L	1	04/29/24 14:01	SM 2320 B	
Carbonate Alkalinity	ND	---	20.0	mg CaCO3/L	1	04/29/24 14:01	SM 2320 B	
Hydroxide Alkalinity	ND	---	20.0	mg CaCO3/L	1	04/29/24 14:01	SM 2320 B	
GM1-MW2-042524 (A4D1585-02)				Matrix: Water				
Batch: 24D0950								
pH	7.1	---		pH Units	1	04/25/24 18:47	SM 4500-H+ B	H-12
pH Temperature (deg C)	21.6	---		pH Units	1	04/25/24 18:47	SM 4500-H+ B	H-12
Batch: 24D1034								
Conductivity	157	---	2.50	umhos/cm @25degC	1	04/26/24 18:06	SM 2510 B	
Batch: 24D1070								
Total Alkalinity	76.6	---	20.0	mg CaCO3/L	1	04/29/24 14:24	SM 2320 B	
Bicarbonate Alkalinity	76.6	---	20.0	mg CaCO3/L	1	04/29/24 14:24	SM 2320 B	
Carbonate Alkalinity	ND	---	20.0	mg CaCO3/L	1	04/29/24 14:24	SM 2320 B	
Hydroxide Alkalinity	ND	---	20.0	mg CaCO3/L	1	04/29/24 14:24	SM 2320 B	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Blank (24D1119-BLK1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 17:28							
EPA 8260D												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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## ANALYTICAL REPORT

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6700 S.W. Sandburg Street

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Blank (24D1119-BLK1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 17:28							
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 101 %		Limits: 80-120 %		Dilution: 1x						

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Blank (24D1119-BLK1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 17:28							
Surr: Toluene-d8 (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		96 %		80-120 %		"						
LCS (24D1119-BS1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 15:57							
EPA 8260D												
Acetone	41.8	---	20.0	ug/L	1	40.0	---	104	80-120%	---	---	
Acrylonitrile	23.4	---	2.00	ug/L	1	20.0	---	117	80-120%	---	---	
Benzene	20.4	---	0.200	ug/L	1	20.0	---	102	80-120%	---	---	
Bromobenzene	19.0	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Bromochloromethane	24.3	---	1.00	ug/L	1	20.0	---	121	80-120%	---	---	Q-56
Bromodichloromethane	21.9	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Bromoform	15.8	---	1.00	ug/L	1	20.0	---	79	80-120%	---	---	Q-55
Bromomethane	27.5	---	5.00	ug/L	1	20.0	---	137	80-120%	---	---	Q-56
2-Butanone (MEK)	47.4	---	10.0	ug/L	1	40.0	---	119	80-120%	---	---	
n-Butylbenzene	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
sec-Butylbenzene	21.9	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
tert-Butylbenzene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Carbon disulfide	18.5	---	10.0	ug/L	1	20.0	---	93	80-120%	---	---	
Carbon tetrachloride	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Chlorobenzene	19.9	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Chloroethane	37.3	---	5.00	ug/L	1	20.0	---	187	80-120%	---	---	Q-56
Chloroform	20.5	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Chloromethane	25.0	---	5.00	ug/L	1	20.0	---	125	80-120%	---	---	Q-56
2-Chlorotoluene	19.3	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
4-Chlorotoluene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Dibromochloromethane	17.5	---	1.00	ug/L	1	20.0	---	88	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.7	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.3	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromomethane	22.0	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,2-Dichlorobenzene	20.6	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
1,3-Dichlorobenzene	20.7	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
1,4-Dichlorobenzene	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Dichlorodifluoromethane	20.6	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,1-Dichloroethane	21.2	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	

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ORELAP ID: OR100062

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Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

## Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
LCS (24D1119-BS1)						Prepared: 04/30/24 12:20 Analyzed: 04/30/24 15:57						
1,2-Dichloroethane (EDC)	23.0	---	0.400	ug/L	1	20.0	---	115	80-120%	---	---	
1,1-Dichloroethene	22.6	---	0.400	ug/L	1	20.0	---	113	80-120%	---	---	
cis-1,2-Dichloroethene	21.5	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
trans-1,2-Dichloroethene	20.3	---	0.400	ug/L	1	20.0	---	101	80-120%	---	---	
1,2-Dichloropropane	20.5	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
1,3-Dichloropropane	21.3	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
2,2-Dichloropropane	15.7	---	1.00	ug/L	1	20.0	---	78	80-120%	---	---	Q-55
1,1-Dichloropropene	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
cis-1,3-Dichloropropene	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
trans-1,3-Dichloropropene	17.0	---	1.00	ug/L	1	20.0	---	85	80-120%	---	---	
Ethylbenzene	21.3	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Hexachlorobutadiene	19.4	---	5.00	ug/L	1	20.0	---	97	80-120%	---	---	
2-Hexanone	40.4	---	10.0	ug/L	1	40.0	---	101	80-120%	---	---	
Isopropylbenzene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
4-Isopropyltoluene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Methylene chloride	19.5	---	10.0	ug/L	1	20.0	---	97	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	46.4	---	10.0	ug/L	1	40.0	---	116	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	16.4	---	1.00	ug/L	1	20.0	---	82	80-120%	---	---	
Naphthalene	17.1	---	5.00	ug/L	1	20.0	---	86	80-120%	---	---	
n-Propylbenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Styrene	21.4	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
1,1,1,2-Tetrachloroethane	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,2,2-Tetrachloroethane	21.7	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Tetrachloroethene (PCE)	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	
Toluene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,3-Trichlorobenzene	20.2	---	2.00	ug/L	1	20.0	---	101	80-120%	---	---	
1,2,4-Trichlorobenzene	19.4	---	2.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,1,1-Trichloroethane	20.5	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
1,1,2-Trichloroethane	21.2	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
Trichloroethene (TCE)	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
Trichlorofluoromethane	33.0	---	2.00	ug/L	1	20.0	---	165	80-120%	---	---	Q-56
1,2,3-Trichloropropane	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,2,4-Trimethylbenzene	21.7	---	1.00	ug/L	1	20.0	---	108	80-120%	---	---	
1,3,5-Trimethylbenzene	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
LCS (24D1119-BS1)				Prepared: 04/30/24 12:20		Analyzed: 04/30/24 15:57						
Vinyl chloride	21.2	---	0.200	ug/L	1	20.0	---	106	80-120%	---	---	
m,p-Xylene	44.3	---	1.00	ug/L	1	40.0	---	111	80-120%	---	---	
o-Xylene	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)			Recovery: 98 %	Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)			99 %	80-120 %		"						
4-Bromofluorobenzene (Surr)			90 %	80-120 %		"						
Duplicate (24D1119-DUP1)						Prepared: 04/30/24 12:20		Analyzed: 05/01/24 03:01				
QC Source Sample: Non-SDG (A4D1687-07)												
Acetone	ND	---	200	ug/L	10	---	ND	---	---	---	30%	R-02
Acrylonitrile	ND	---	25.0	ug/L	10	---	ND	---	---	---	30%	
Benzene	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%	
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	---	110	ug/L	10	---	ND	---	---	---	30%	R-02
n-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
sec-Butylbenzene	21.3	---	10.0	ug/L	10	---	19.7	---	---	8	30%	
tert-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Carbon disulfide	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
Chloroform	ND	---	15.0	ug/L	10	---	ND	---	---	---	30%	R-02
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Duplicate (24D1119-DUP1)			Prepared: 04/30/24 12:20		Analyzed: 05/01/24 03:01							
QC Source Sample: Non-SDG (A4D1687-07)												
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	33.3	---	5.00	ug/L	10	---	33.3	---	---	0	30%	
Styrene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Toluene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	15.0	ug/L	10	---	ND	---	---	---	30%	R-02

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Duplicate (24D1119-DUP1)			Prepared: 04/30/24 12:20   Analyzed: 05/01/24 03:01									
QC Source Sample: Non-SDG (A4D1687-07)												
Trichloroethene (TCE)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)			Recovery: 97 %	Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)			100 %	80-120 %		"						
4-Bromofluorobenzene (Surr)			96 %	80-120 %		"						

**Matrix Spike (24D1119-MS1)**

Prepared: 04/30/24 12:20 Analyzed: 04/30/24 22:55

**QC Source Sample: Non-SDG (A4D1637-22)**

<b>EPA 8260D</b>												
Acetone	49.2	---	20.0	ug/L	1	40.0	ND	123	39-160%	---	---	
Acrylonitrile	24.0	---	2.00	ug/L	1	20.0	ND	120	63-135%	---	---	
Benzene	22.1	---	0.200	ug/L	1	20.0	ND	110	79-120%	---	---	
Bromobenzene	19.8	---	0.500	ug/L	1	20.0	ND	99	80-120%	---	---	
Bromochloromethane	26.2	---	1.00	ug/L	1	20.0	ND	131	78-123%	---	---	Q-54
Bromodichloromethane	23.0	---	1.00	ug/L	1	20.0	ND	115	79-125%	---	---	
Bromoform	16.7	---	1.00	ug/L	1	20.0	ND	83	66-130%	---	---	Q-54j
Bromomethane	31.6	---	5.00	ug/L	1	20.0	ND	158	53-141%	---	---	Q-54c
2-Butanone (MEK)	49.0	---	10.0	ug/L	1	40.0	ND	122	56-143%	---	---	
n-Butylbenzene	24.0	---	1.00	ug/L	1	20.0	ND	120	75-128%	---	---	
sec-Butylbenzene	24.7	---	1.00	ug/L	1	20.0	ND	124	77-126%	---	---	
tert-Butylbenzene	22.7	---	1.00	ug/L	1	20.0	ND	114	78-124%	---	---	
Carbon disulfide	20.7	---	10.0	ug/L	1	20.0	ND	103	64-133%	---	---	
Carbon tetrachloride	21.4	---	1.00	ug/L	1	20.0	ND	107	72-136%	---	---	
Chlorobenzene	21.3	---	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
Chloroethane	44.4	---	5.00	ug/L	1	20.0	ND	222	60-138%	---	---	Q-54h
Chloroform	21.8	---	1.00	ug/L	1	20.0	ND	109	79-124%	---	---	
Chloromethane	27.2	---	5.00	ug/L	1	20.0	ND	136	50-139%	---	---	Q-54g

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Matrix Spike (24D1119-MS1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 22:55							
QC Source Sample: Non-SDG (A4D1637-22)												
2-Chlorotoluene	20.5	---	1.00	ug/L	1	20.0	ND	103	79-122%	---	---	
4-Chlorotoluene	22.5	---	1.00	ug/L	1	20.0	ND	112	78-122%	---	---	
Dibromochloromethane	18.4	---	1.00	ug/L	1	20.0	ND	92	74-126%	---	---	
1,2-Dibromo-3-chloropropane	19.7	---	5.00	ug/L	1	20.0	ND	98	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.3	---	0.500	ug/L	1	20.0	ND	106	77-121%	---	---	
Dibromomethane	22.4	---	1.00	ug/L	1	20.0	ND	112	79-123%	---	---	
1,2-Dichlorobenzene	21.7	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
1,3-Dichlorobenzene	21.9	---	0.500	ug/L	1	20.0	ND	109	80-120%	---	---	
1,4-Dichlorobenzene	20.9	---	0.500	ug/L	1	20.0	ND	105	79-120%	---	---	
Dichlorodifluoromethane	23.1	---	1.00	ug/L	1	20.0	ND	115	32-152%	---	---	
1,1-Dichloroethane	22.8	---	0.400	ug/L	1	20.0	ND	114	77-125%	---	---	
1,2-Dichloroethane (EDC)	24.0	---	0.400	ug/L	1	20.0	ND	120	73-128%	---	---	
1,1-Dichloroethene	26.4	---	0.400	ug/L	1	20.0	ND	132	71-131%	---	---	Q-01
cis-1,2-Dichloroethene	23.0	---	0.400	ug/L	1	20.0	ND	115	78-123%	---	---	
trans-1,2-Dichloroethene	22.5	---	0.400	ug/L	1	20.0	ND	112	75-124%	---	---	
1,2-Dichloropropane	21.9	---	0.500	ug/L	1	20.0	ND	110	78-122%	---	---	
1,3-Dichloropropane	22.2	---	1.00	ug/L	1	20.0	ND	111	80-120%	---	---	
2,2-Dichloropropane	15.5	---	1.00	ug/L	1	20.0	ND	78	60-139%	---	---	Q-54k
1,1-Dichloropropene	24.1	---	1.00	ug/L	1	20.0	ND	121	79-125%	---	---	
cis-1,3-Dichloropropene	18.5	---	1.00	ug/L	1	20.0	ND	93	75-124%	---	---	
trans-1,3-Dichloropropene	17.7	---	1.00	ug/L	1	20.0	ND	88	73-127%	---	---	
Ethylbenzene	23.2	---	0.500	ug/L	1	20.0	ND	116	79-121%	---	---	
Hexachlorobutadiene	21.9	---	5.00	ug/L	1	20.0	ND	110	66-134%	---	---	
2-Hexanone	44.4	---	10.0	ug/L	1	40.0	ND	111	57-139%	---	---	
Isopropylbenzene	23.2	---	1.00	ug/L	1	20.0	ND	116	72-131%	---	---	
4-Isopropyltoluene	21.5	---	1.00	ug/L	1	20.0	ND	108	77-127%	---	---	
Methylene chloride	20.4	---	10.0	ug/L	1	20.0	ND	102	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	49.2	---	10.0	ug/L	1	40.0	ND	123	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	17.4	---	1.00	ug/L	1	20.0	ND	87	71-124%	---	---	
Naphthalene	19.6	---	5.00	ug/L	1	20.0	ND	98	61-128%	---	---	
n-Propylbenzene	23.7	---	0.500	ug/L	1	20.0	ND	118	76-126%	---	---	
Styrene	23.0	---	1.00	ug/L	1	20.0	ND	115	78-123%	---	---	
1,1,1,2-Tetrachloroethane	20.1	---	0.400	ug/L	1	20.0	ND	101	78-124%	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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55 SW Yamhill St, Ste 300

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Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1119 - EPA 5030C						Water						
Matrix Spike (24D1119-MS1)			Prepared: 04/30/24 12:20		Analyzed: 04/30/24 22:55							
QC Source Sample: Non-SDG (A4D1637-22)												
1,1,2,2-Tetrachloroethane	23.6	---	0.500	ug/L	1	20.0	ND	118	71-121%	---	---	
Tetrachloroethene (PCE)	20.4	---	0.400	ug/L	1	20.0	ND	102	74-129%	---	---	
Toluene	21.7	---	0.500	ug/L	1	20.0	ND	109	80-121%	---	---	
1,2,3-Trichlorobenzene	22.1	---	2.00	ug/L	1	20.0	ND	110	69-129%	---	---	
1,2,4-Trichlorobenzene	21.6	---	2.00	ug/L	1	20.0	ND	108	69-130%	---	---	
1,1,1-Trichloroethane	22.6	---	0.400	ug/L	1	20.0	ND	113	74-131%	---	---	
1,1,2-Trichloroethane	22.2	---	0.500	ug/L	1	20.0	ND	111	80-120%	---	---	
Trichloroethene (TCE)	19.8	---	0.400	ug/L	1	20.0	ND	99	79-123%	---	---	
Trichlorofluoromethane	36.3	---	2.00	ug/L	1	20.0	ND	181	65-141%	---	---	Q-54f
1,2,3-Trichloropropane	22.5	---	1.00	ug/L	1	20.0	ND	113	73-122%	---	---	
1,2,4-Trimethylbenzene	23.3	---	1.00	ug/L	1	20.0	ND	117	76-124%	---	---	
1,3,5-Trimethylbenzene	23.9	---	1.00	ug/L	1	20.0	ND	119	75-124%	---	---	
Vinyl chloride	23.8	---	0.200	ug/L	1	20.0	ND	119	58-137%	---	---	
m,p-Xylene	48.8	---	1.00	ug/L	1	40.0	ND	122	80-121%	---	---	Q-01
o-Xylene	22.7	---	0.500	ug/L	1	20.0	ND	113	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 96 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		98 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		89 %		80-120 %		"						

Apex Laboratories

Philip Nerenberg, Lab Director

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Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Blank (24E0144-BLK1)			Prepared: 05/03/24 10:00		Analyzed: 05/03/24 12:30							
EPA 8260D												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Blank (24E0144-BLK1)						Prepared: 05/03/24 10:00 Analyzed: 05/03/24 12:30						
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr) Recovery: 104 % Limits: 80-120 % Dilution: 1x												

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Blank (24E0144-BLK1)			Prepared: 05/03/24 10:00		Analyzed: 05/03/24 12:30							
Surr: Toluene-d8 (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		97 %		80-120 %		"						
LCS (24E0144-BS1)			Prepared: 05/03/24 10:00		Analyzed: 05/03/24 11:17							
EPA 8260D												
Acetone	44.0	---	20.0	ug/L	1	40.0	---	110	80-120%	---	---	
Acrylonitrile	23.1	---	2.00	ug/L	1	20.0	---	116	80-120%	---	---	
Benzene	21.0	---	0.200	ug/L	1	20.0	---	105	80-120%	---	---	
Bromobenzene	19.3	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Bromochloromethane	26.4	---	1.00	ug/L	1	20.0	---	132	80-120%	---	---	Q-56
Bromodichloromethane	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
Bromoform	16.8	---	1.00	ug/L	1	20.0	---	84	80-120%	---	---	
Bromomethane	24.6	---	5.00	ug/L	1	20.0	---	123	80-120%	---	---	Q-56
2-Butanone (MEK)	47.7	---	10.0	ug/L	1	40.0	---	119	80-120%	---	---	
n-Butylbenzene	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
sec-Butylbenzene	22.1	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
tert-Butylbenzene	20.5	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Carbon disulfide	19.9	---	10.0	ug/L	1	20.0	---	99	80-120%	---	---	
Carbon tetrachloride	20.7	---	1.00	ug/L	1	20.0	---	103	80-120%	---	---	
Chlorobenzene	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Chloroethane	48.0	---	5.00	ug/L	1	20.0	---	240	80-120%	---	---	Q-56
Chloroform	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Chloromethane	19.6	---	5.00	ug/L	1	20.0	---	98	80-120%	---	---	
2-Chlorotoluene	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
4-Chlorotoluene	21.3	---	1.00	ug/L	1	20.0	---	107	80-120%	---	---	
Dibromochloromethane	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dibromo-3-chloropropane	16.7	---	5.00	ug/L	1	20.0	---	83	80-120%	---	---	
1,2-Dibromoethane (EDB)	20.7	---	0.500	ug/L	1	20.0	---	103	80-120%	---	---	
Dibromomethane	23.3	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	
1,2-Dichlorobenzene	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,3-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,4-Dichlorobenzene	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Dichlorodifluoromethane	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
1,1-Dichloroethane	22.1	---	0.400	ug/L	1	20.0	---	110	80-120%	---	---	

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Philip Nerenberg, Lab Director

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Apex Laboratories, LLC

6700 S.W. Sandburg Street

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503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

## Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
LCS (24E0144-BS1)						Prepared: 05/03/24 10:00 Analyzed: 05/03/24 11:17						
1,2-Dichloroethane (EDC)	24.4	---	0.400	ug/L	1	20.0	---	122	80-120%	---	---	Q-56
1,1-Dichloroethene	23.6	---	0.400	ug/L	1	20.0	---	118	80-120%	---	---	
cis-1,2-Dichloroethene	22.1	---	0.400	ug/L	1	20.0	---	110	80-120%	---	---	
trans-1,2-Dichloroethene	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,2-Dichloropropane	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,3-Dichloropropane	22.2	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
2,2-Dichloropropane	17.9	---	1.00	ug/L	1	20.0	---	89	80-120%	---	---	
1,1-Dichloropropene	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
cis-1,3-Dichloropropene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
trans-1,3-Dichloropropene	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
Ethylbenzene	21.7	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Hexachlorobutadiene	19.2	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
2-Hexanone	40.9	---	10.0	ug/L	1	40.0	---	102	80-120%	---	---	
Isopropylbenzene	20.5	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
4-Isopropyltoluene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Methylene chloride	21.0	---	10.0	ug/L	1	20.0	---	105	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	46.1	---	10.0	ug/L	1	40.0	---	115	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	17.1	---	1.00	ug/L	1	20.0	---	86	80-120%	---	---	
Naphthalene	16.0	---	5.00	ug/L	1	20.0	---	80	80-120%	---	---	
n-Propylbenzene	22.1	---	0.500	ug/L	1	20.0	---	110	80-120%	---	---	
Styrene	21.7	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
1,1,1,2-Tetrachloroethane	19.8	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,1,2,2-Tetrachloroethane	22.8	---	0.500	ug/L	1	20.0	---	114	80-120%	---	---	
Tetrachloroethene (PCE)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
Toluene	20.9	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2,3-Trichlorobenzene	20.6	---	2.00	ug/L	1	20.0	---	103	80-120%	---	---	
1,2,4-Trichlorobenzene	19.0	---	2.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,1,1-Trichloroethane	21.5	---	0.400	ug/L	1	20.0	---	108	80-120%	---	---	
1,1,2-Trichloroethane	22.4	---	0.500	ug/L	1	20.0	---	112	80-120%	---	---	
Trichloroethene (TCE)	19.0	---	0.400	ug/L	1	20.0	---	95	80-120%	---	---	
Trichlorofluoromethane	39.0	---	2.00	ug/L	1	20.0	---	195	80-120%	---	---	Q-56
1,2,3-Trichloropropane	22.6	---	1.00	ug/L	1	20.0	---	113	80-120%	---	---	
1,2,4-Trimethylbenzene	22.8	---	1.00	ug/L	1	20.0	---	114	80-120%	---	---	
1,3,5-Trimethylbenzene	23.1	---	1.00	ug/L	1	20.0	---	116	80-120%	---	---	

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Philip Nerenberg, Lab Director

Page 34 of 73



## ANALYTICAL REPORT

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**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24E0144 - EPA 5030C</b>						<b>Water</b>						
<b>LCS (24E0144-BS1)</b>						Prepared: 05/03/24 10:00 Analyzed: 05/03/24 11:17						
Vinyl chloride	21.3	---	0.200	ug/L	1	20.0	---	106	80-120%	---	---	
m,p-Xylene	45.6	---	1.00	ug/L	1	40.0	---	114	80-120%	---	---	
o-Xylene	20.2	---	0.500	ug/L	1	20.0	---	101	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>99 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>88 %</i>		<i>80-120 %</i>		<i>"</i>						

**Duplicate (24E0144-DUP1)**

Prepared: 05/03/24 11:47 Analyzed: 05/03/24 22:34

**QC Source Sample: Non-SDG (A4D1697-28)**

Acetone	ND	---	100	ug/L	5	---	ND	---	---	---	30%
Acrylonitrile	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%
Benzene	ND	---	1.00	ug/L	5	---	ND	---	---	---	30%
Bromobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%
Bromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Bromodichloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Bromoform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Bromomethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%
n-Butylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
sec-Butylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
tert-Butylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Carbon disulfide	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%
Carbon tetrachloride	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Chlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%
Chloroethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%
Chloroform	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Chloromethane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%
2-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
4-Chlorotoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
Dibromochloromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%
Dibromomethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%
1,2-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%

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Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Duplicate (24E0144-DUP1)			Prepared: 05/03/24 11:47		Analyzed: 05/03/24 22:34							
QC Source Sample: Non-SDG (A4D1697-28)												
1,3-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	Q-17
1,4-Dichlorobenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	70.0	---	2.00	ug/L	5	---	67.7	---	---	3	30%	
trans-1,2-Dichloroethene	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
2-Hexanone	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Methylene chloride	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	50.0	ug/L	5	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Naphthalene	ND	---	25.0	ug/L	5	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Styrene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	3.25	---	2.00	ug/L	5	---	3.35	---	---	3	30%	
Toluene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	2.00	ug/L	5	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Duplicate (24E0144-DUP1)			Prepared: 05/03/24 11:47   Analyzed: 05/03/24 22:34									
QC Source Sample: Non-SDG (A4D1697-28)												
Trichloroethene (TCE)	422	---	2.00	ug/L	5	---	408	---	---	3	30%	
Trichlorofluoromethane	ND	---	10.0	ug/L	5	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	1.00	ug/L	5	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	5.00	ug/L	5	---	ND	---	---	---	30%	
o-Xylene	ND	---	2.50	ug/L	5	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 116 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		102 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		95 %		80-120 %		"						

**Matrix Spike (24E0144-MS1)**

Prepared: 05/03/24 11:47 Analyzed: 05/03/24 16:11

QC Source Sample: Non-SDG (A4D1741-08)

<u>EPA 8260D</u>												
Acetone	48.6	---	20.0	ug/L	1	40.0	ND	122	39-160%	---	---	
Acrylonitrile	23.7	---	2.00	ug/L	1	20.0	ND	118	63-135%	---	---	
Benzene	21.9	---	0.200	ug/L	1	20.0	ND	109	79-120%	---	---	
Bromobenzene	19.5	---	0.500	ug/L	1	20.0	ND	97	80-120%	---	---	
Bromochloromethane	26.7	---	1.00	ug/L	1	20.0	ND	133	78-123%	---	---	Q-54a
Bromodichloromethane	23.5	---	1.00	ug/L	1	20.0	ND	117	79-125%	---	---	
Bromoform	17.2	---	1.00	ug/L	1	20.0	ND	86	66-130%	---	---	
Bromomethane	28.6	---	5.00	ug/L	1	20.0	ND	143	53-141%	---	---	Q-54e
2-Butanone (MEK)	49.1	---	10.0	ug/L	1	40.0	ND	123	56-143%	---	---	
n-Butylbenzene	24.3	---	1.00	ug/L	1	20.0	ND	121	75-128%	---	---	
sec-Butylbenzene	23.6	---	1.00	ug/L	1	20.0	ND	118	77-126%	---	---	
tert-Butylbenzene	21.9	---	1.00	ug/L	1	20.0	ND	109	78-124%	---	---	
Carbon disulfide	22.3	---	10.0	ug/L	1	20.0	ND	112	64-133%	---	---	
Carbon tetrachloride	22.1	---	1.00	ug/L	1	20.0	ND	111	72-136%	---	---	
Chlorobenzene	21.0	---	0.500	ug/L	1	20.0	ND	105	80-120%	---	---	
Chloroethane	47.4	---	5.00	ug/L	1	20.0	ND	237	60-138%	---	---	Q-54b
Chloroform	22.2	---	1.00	ug/L	1	20.0	ND	111	79-124%	---	---	
Chloromethane	20.9	---	5.00	ug/L	1	20.0	ND	105	50-139%	---	---	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0144 - EPA 5030C						Water						
Matrix Spike (24E0144-MS1)			Prepared: 05/03/24 11:47		Analyzed: 05/03/24 16:11							
QC Source Sample: Non-SDG (A4D1741-08)												
2-Chlorotoluene	20.3	---	1.00	ug/L	1	20.0	ND	102	79-122%	---	---	
4-Chlorotoluene	22.0	---	1.00	ug/L	1	20.0	ND	110	78-122%	---	---	
Dibromochloromethane	19.0	---	1.00	ug/L	1	20.0	ND	95	74-126%	---	---	
1,2-Dibromo-3-chloropropane	17.9	---	5.00	ug/L	1	20.0	ND	90	62-128%	---	---	
1,2-Dibromoethane (EDB)	21.2	---	0.500	ug/L	1	20.0	ND	106	77-121%	---	---	
Dibromomethane	23.6	---	1.00	ug/L	1	20.0	ND	118	79-123%	---	---	
1,2-Dichlorobenzene	21.4	---	0.500	ug/L	1	20.0	ND	107	80-120%	---	---	
1,3-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	ND	108	80-120%	---	---	
1,4-Dichlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	79-120%	---	---	
Dichlorodifluoromethane	22.3	---	1.00	ug/L	1	20.0	ND	112	32-152%	---	---	
1,1-Dichloroethane	23.2	---	0.400	ug/L	1	20.0	ND	116	77-125%	---	---	
1,2-Dichloroethane (EDC)	24.6	---	0.400	ug/L	1	20.0	ND	123	73-128%	---	---	Q-54d
1,1-Dichloroethene	26.5	---	0.400	ug/L	1	20.0	ND	132	71-131%	---	---	Q-01
cis-1,2-Dichloroethene	22.9	---	0.400	ug/L	1	20.0	ND	115	78-123%	---	---	
trans-1,2-Dichloroethene	22.2	---	0.400	ug/L	1	20.0	ND	111	75-124%	---	---	
1,2-Dichloropropane	21.8	---	0.500	ug/L	1	20.0	ND	109	78-122%	---	---	
1,3-Dichloropropane	22.2	---	1.00	ug/L	1	20.0	ND	111	80-120%	---	---	
2,2-Dichloropropane	18.2	---	1.00	ug/L	1	20.0	ND	91	60-139%	---	---	
1,1-Dichloropropene	24.2	---	1.00	ug/L	1	20.0	ND	121	79-125%	---	---	
cis-1,3-Dichloropropene	17.9	---	1.00	ug/L	1	20.0	ND	89	75-124%	---	---	
trans-1,3-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	ND	92	73-127%	---	---	
Ethylbenzene	22.5	---	0.500	ug/L	1	20.0	ND	113	79-121%	---	---	
Hexachlorobutadiene	19.8	---	5.00	ug/L	1	20.0	ND	99	66-134%	---	---	
2-Hexanone	42.3	---	10.0	ug/L	1	40.0	ND	106	57-139%	---	---	
Isopropylbenzene	21.8	---	1.00	ug/L	1	20.0	ND	109	72-131%	---	---	
4-Isopropyltoluene	21.0	---	1.00	ug/L	1	20.0	ND	105	77-127%	---	---	
Methylene chloride	20.6	---	10.0	ug/L	1	20.0	ND	103	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	49.1	---	10.0	ug/L	1	40.0	ND	123	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	17.5	---	1.00	ug/L	1	20.0	ND	88	71-124%	---	---	
Naphthalene	16.4	---	5.00	ug/L	1	20.0	ND	82	61-128%	---	---	
n-Propylbenzene	23.4	---	0.500	ug/L	1	20.0	ND	117	76-126%	---	---	
Styrene	21.9	---	1.00	ug/L	1	20.0	ND	110	78-123%	---	---	
1,1,1,2-Tetrachloroethane	20.2	---	0.400	ug/L	1	20.0	ND	101	78-124%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24E0144 - EPA 5030C						Water							
Matrix Spike (24E0144-MS1)			Prepared: 05/03/24 11:47		Analyzed: 05/03/24 16:11								
QC Source Sample: Non-SDG (A4D1741-08)													
1,1,2,2-Tetrachloroethane	22.9	---	0.500	ug/L	1	20.0	ND	114	71-121%	---	---	E	
Tetrachloroethene (PCE)	200	---	0.400	ug/L	1	20.0	179	107	74-129%	---	---		
Toluene	21.4	---	1.00	ug/L	1	20.0	ND	107	80-121%	---	---		
1,2,3-Trichlorobenzene	20.5	---	2.00	ug/L	1	20.0	ND	103	69-129%	---	---		
1,2,4-Trichlorobenzene	19.3	---	2.00	ug/L	1	20.0	ND	97	69-130%	---	---	Q-54i	
1,1,1-Trichloroethane	23.0	---	0.400	ug/L	1	20.0	ND	115	74-131%	---	---		
1,1,2-Trichloroethane	22.6	---	0.500	ug/L	1	20.0	ND	113	80-120%	---	---		
Trichloroethene (TCE)	20.0	---	0.400	ug/L	1	20.0	ND	100	79-123%	---	---		
Trichlorofluoromethane	41.6	---	2.00	ug/L	1	20.0	ND	208	65-141%	---	---		
1,2,3-Trichloropropane	22.4	---	1.00	ug/L	1	20.0	ND	112	73-122%	---	---		
1,2,4-Trimethylbenzene	23.3	---	1.00	ug/L	1	20.0	ND	116	76-124%	---	---		
1,3,5-Trimethylbenzene	23.9	---	1.00	ug/L	1	20.0	ND	120	75-124%	---	---		
Vinyl chloride	23.6	---	0.200	ug/L	1	20.0	ND	118	58-137%	---	---		
m,p-Xylene	48.0	---	1.00	ug/L	1	40.0	ND	120	80-121%	---	---		
o-Xylene	21.0	---	0.500	ug/L	1	20.0	ND	105	78-122%	---	---		
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 99 %		Limits: 80-120 %		Dilution: 1x							
Toluene-d8 (Surr)		98 %		80-120 %		"							
4-Bromofluorobenzene (Surr)		89 %		80-120 %		"							

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## ANALYTICAL REPORT

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0053-BLK1)			Prepared: 05/02/24 04:55		Analyzed: 05/02/24 12:33							
EPA 8270E												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Phenol	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	

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55 SW Yamhill St, Ste 300

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Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0053-BLK1)						Prepared: 05/02/24 04:55 Analyzed: 05/02/24 12:33						
2,3,5,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	B-02
2,2'-Oxybis(1-Chloropropane)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Hexachlorocyclopentadiene	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
2-Chloronaphthalene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	Q-30
1,2,4-Trichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
4-Bromophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Aniline	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	---	2.50	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0053-BLK1)						Prepared: 05/02/24 04:55 Analyzed: 05/02/24 12:33						
Azobenzene (1,2-DPH)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	---	1.00	ug/L	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,3-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,4-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Surr: Nitrobenzene-d5 (Surr)												
			Recovery: 75 %	Limits: 44-120 %	Dilution: 1x							
2-Fluorobiphenyl (Surr)			64 %	44-120 %	"							
Phenol-d6 (Surr)			27 %	10-133 %	"							
p-Terphenyl-d14 (Surr)			98 %	50-134 %	"							
2-Fluorophenol (Surr)			39 %	19-120 %	"							
2,4,6-Tribromophenol (Surr)			80 %	43-140 %	"							

## LCS (24E0053-BS1)

Prepared: 05/02/24 04:55 Analyzed: 05/02/24 13:08

EPA 8270E												
Acenaphthene	1.87	---	0.0800	ug/L	4	4.00	---	47	47-122%	---	---	
Acenaphthylene	2.38	---	0.0800	ug/L	4	4.00	---	60	41-130%	---	---	
Anthracene	3.41	---	0.0800	ug/L	4	4.00	---	85	57-123%	---	---	
Benz(a)anthracene	3.71	---	0.0800	ug/L	4	4.00	---	93	58-125%	---	---	
Benzo(a)pyrene	3.86	---	0.120	ug/L	4	4.00	---	96	54-128%	---	---	
Benzo(b)fluoranthene	3.92	---	0.120	ug/L	4	4.00	---	98	53-131%	---	---	
Benzo(k)fluoranthene	3.73	---	0.120	ug/L	4	4.00	---	93	57-129%	---	---	
Benzo(g,h,i)perylene	3.84	---	0.0800	ug/L	4	4.00	---	96	50-134%	---	---	
Chrysene	3.60	---	0.0800	ug/L	4	4.00	---	90	59-123%	---	---	
Dibenz(a,h)anthracene	3.59	---	0.0800	ug/L	4	4.00	---	90	51-134%	---	---	
Fluoranthene	3.87	---	0.0800	ug/L	4	4.00	---	97	57-128%	---	---	
Fluorene	2.58	---	0.0800	ug/L	4	4.00	---	65	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.47	---	0.0800	ug/L	4	4.00	---	87	52-134%	---	---	
1-Methylnaphthalene	1.46	---	0.160	ug/L	4	4.00	---	36	41-120%	---	---	Q-30
2-Methylnaphthalene	1.39	---	0.160	ug/L	4	4.00	---	35	40-121%	---	---	Q-30

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)							Water					
LCS (24E0053-BS1)							Prepared: 05/02/24 04:55 Analyzed: 05/02/24 13:08					
Naphthalene	1.47	---	0.160	ug/L	4	4.00	---	37	40-121%	---	---	Q-30
Phenanthrene	3.14	---	0.0800	ug/L	4	4.00	---	79	59-120%	---	---	
Pyrene	3.83	---	0.0800	ug/L	4	4.00	---	96	57-126%	---	---	
Carbazole	4.00	---	0.120	ug/L	4	4.00	---	100	60-122%	---	---	
Dibenzofuran	2.28	---	0.0800	ug/L	4	4.00	---	57	53-120%	---	---	
2-Chlorophenol	2.62	---	0.400	ug/L	4	4.00	---	65	38-120%	---	---	
4-Chloro-3-methylphenol	3.53	---	0.800	ug/L	4	4.00	---	88	52-120%	---	---	
2,4-Dichlorophenol	3.30	---	0.400	ug/L	4	4.00	---	83	47-121%	---	---	Q-41
2,4-Dimethylphenol	2.28	---	2.00	ug/L	4	4.00	---	57	31-124%	---	---	
2,4-Dinitrophenol	4.99	---	2.00	ug/L	4	4.00	---	125	23-143%	---	---	Q-41
4,6-Dinitro-2-methylphenol	4.41	---	2.00	ug/L	4	4.00	---	110	44-137%	---	---	Q-41
2-Methylphenol	2.43	---	0.200	ug/L	4	4.00	---	61	30-120%	---	---	
3+4-Methylphenol(s)	2.47	---	0.200	ug/L	4	4.00	---	62	29-120%	---	---	
2-Nitrophenol	3.21	---	0.800	ug/L	4	4.00	---	80	47-123%	---	---	
4-Nitrophenol	1.95	---	0.800	ug/L	4	4.00	---	49	10-120%	---	---	
Pentachlorophenol (PCP)	4.03	---	0.800	ug/L	4	4.00	---	101	35-138%	---	---	
Phenol	1.13	---	0.800	ug/L	4	4.00	---	28	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	3.60	---	0.400	ug/L	4	4.00	---	90	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	3.93	---	0.400	ug/L	4	4.00	---	98	50-121%	---	---	
2,4,5-Trichlorophenol	4.12	---	0.400	ug/L	4	4.00	---	103	53-123%	---	---	Q-41
2,4,6-Trichlorophenol	3.68	---	0.400	ug/L	4	4.00	---	92	50-125%	---	---	Q-41
Bis(2-ethylhexyl)phthalate	3.80	---	1.60	ug/L	4	4.00	---	95	55-135%	---	---	
Butyl benzyl phthalate	3.86	---	1.60	ug/L	4	4.00	---	97	53-134%	---	---	
Diethylphthalate	3.59	---	1.60	ug/L	4	4.00	---	90	56-125%	---	---	
Dimethylphthalate	3.56	---	1.60	ug/L	4	4.00	---	89	45-127%	---	---	
Di-n-butylphthalate	4.10	---	1.60	ug/L	4	4.00	---	103	59-127%	---	---	
Di-n-octyl phthalate	4.00	---	1.60	ug/L	4	4.00	---	100	51-140%	---	---	
N-Nitrosodimethylamine	1.72	---	0.200	ug/L	4	4.00	---	43	19-120%	---	---	
N-Nitroso-di-n-propylamine	2.96	---	0.200	ug/L	4	4.00	---	74	49-120%	---	---	
N-Nitrosodiphenylamine	3.11	---	0.200	ug/L	4	4.00	---	78	51-123%	---	---	
Bis(2-Chloroethoxy) methane	2.85	---	0.200	ug/L	4	4.00	---	71	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.60	---	0.200	ug/L	4	4.00	---	65	43-120%	---	---	B-02
2,2'-Oxybis(1-Chloropropane)	2.12	---	0.200	ug/L	4	4.00	---	53	41-120%	---	---	
Hexachlorobenzene	2.93	---	0.0800	ug/L	4	4.00	---	73	53-125%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)							Water					
LCS (24E0053-BS1)			Prepared: 05/02/24 04:55		Analyzed: 05/02/24 13:08							
Hexachlorobutadiene	0.670	---	0.200	ug/L	4	4.00	---	17	22-124%	---	---	Q-30
Hexachlorocyclopentadiene	0.642	---	0.400	ug/L	4	4.00	---	16	10-127%	---	---	Q-41
Hexachloroethane	0.703	---	0.200	ug/L	4	4.00	---	18	21-120%	---	---	Q-30
2-Chloronaphthalene	1.54	---	0.0800	ug/L	4	4.00	---	38	40-120%	---	---	Q-30
1,2,4-Trichlorobenzene	0.948	---	0.200	ug/L	4	4.00	---	24	29-120%	---	---	Q-30
4-Bromophenyl phenyl ether	2.46	---	0.200	ug/L	4	4.00	---	61	55-124%	---	---	Q-30
4-Chlorophenyl phenyl ether	1.94	---	0.200	ug/L	4	4.00	---	49	53-121%	---	---	
Aniline	2.10	---	0.400	ug/L	4	4.00	---	53	10-120%	---	---	
4-Chloroaniline	2.61	---	0.200	ug/L	4	4.00	---	65	33-120%	---	---	
2-Nitroaniline	3.44	---	1.60	ug/L	4	4.00	---	86	55-127%	---	---	Q-31
3-Nitroaniline	3.19	---	1.60	ug/L	4	4.00	---	80	41-128%	---	---	
4-Nitroaniline	3.61	---	1.60	ug/L	4	4.00	---	90	25-120%	---	---	
Nitrobenzene	2.58	---	0.800	ug/L	4	4.00	---	64	45-121%	---	---	
2,4-Dinitrotoluene	3.45	---	0.800	ug/L	4	4.00	---	86	57-128%	---	---	Q-41
2,6-Dinitrotoluene	3.24	---	0.800	ug/L	4	4.00	---	81	57-124%	---	---	
Benzoic acid	3.63	---	2.00	ug/L	4	8.00	---	45	10-120%	---	---	
Benzyl alcohol	2.67	---	0.800	ug/L	4	4.00	---	67	31-120%	---	---	
Isophorone	3.08	---	0.200	ug/L	4	4.00	---	77	42-124%	---	---	Q-29, Q-31, Q-52
Azobenzene (1,2-DPH)	2.62	---	0.200	ug/L	4	4.00	---	66	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.79	---	2.00	ug/L	4	4.00	---	95	63-121%	---	---	
3,3'-Dichlorobenzidine	10.8	---	4.00	ug/L	4	8.00	---	135	27-129%	---	---	
1,2-Dinitrobenzene	3.26	---	2.00	ug/L	4	4.00	---	81	59-120%	---	---	Q-30
1,3-Dinitrobenzene	3.48	---	2.00	ug/L	4	4.00	---	87	49-128%	---	---	
1,4-Dinitrobenzene	3.25	---	2.00	ug/L	4	4.00	---	81	54-120%	---	---	
Pyridine	1.72	---	0.800	ug/L	4	4.00	---	43	10-120%	---	---	
1,2-Dichlorobenzene	0.900	---	0.200	ug/L	4	4.00	---	23	32-120%	---	---	Q-30
1,3-Dichlorobenzene	0.805	---	0.200	ug/L	4	4.00	---	20	28-120%	---	---	Q-30
1,4-Dichlorobenzene	0.845	---	0.200	ug/L	4	4.00	---	21	29-120%	---	---	Q-30
Surr: Nitrobenzene-d5 (Surr)		Recovery: 76 %		Limits: 44-120 %		Dilution: 4x						
2-Fluorobiphenyl (Surr)		70 %		44-120 %		"						
Phenol-d6 (Surr)		30 %		10-133 %		"						
p-Terphenyl-d14 (Surr)		103 %		50-134 %		"						
2-Fluorophenol (Surr)		42 %		19-120 %		"						
2,4,6-Tribromophenol (Surr)		100 %		43-140 %		"						

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Philip Nerenberg, Lab Director

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503-718-2323

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## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)							Water					
LCS Dup (24E0053-BSD1)			Prepared: 05/02/24 04:55    Analyzed: 05/02/24 13:42					Q-19				
EPA 8270E												
Acenaphthene	2.09	---	0.0800	ug/L	4	4.00	---	52	47-122%	12	30%	
Acenaphthylene	2.66	---	0.0800	ug/L	4	4.00	---	66	41-130%	11	30%	
Anthracene	3.70	---	0.0800	ug/L	4	4.00	---	92	57-123%	8	30%	
Benz(a)anthracene	3.86	---	0.0800	ug/L	4	4.00	---	96	58-125%	4	30%	
Benzo(a)pyrene	4.01	---	0.120	ug/L	4	4.00	---	100	54-128%	4	30%	
Benzo(b)fluoranthene	4.09	---	0.120	ug/L	4	4.00	---	102	53-131%	4	30%	
Benzo(k)fluoranthene	4.03	---	0.120	ug/L	4	4.00	---	101	57-129%	8	30%	
Benzo(g,h,i)perylene	4.10	---	0.0800	ug/L	4	4.00	---	103	50-134%	7	30%	
Chrysene	3.77	---	0.0800	ug/L	4	4.00	---	94	59-123%	5	30%	
Dibenz(a,h)anthracene	3.81	---	0.0800	ug/L	4	4.00	---	95	51-134%	6	30%	
Fluoranthene	4.11	---	0.0800	ug/L	4	4.00	---	103	57-128%	6	30%	
Fluorene	2.94	---	0.0800	ug/L	4	4.00	---	74	52-124%	13	30%	
Indeno(1,2,3-cd)pyrene	3.72	---	0.0800	ug/L	4	4.00	---	93	52-134%	7	30%	
1-Methylnaphthalene	1.71	---	0.160	ug/L	4	4.00	---	43	41-120%	16	30%	
2-Methylnaphthalene	1.64	---	0.160	ug/L	4	4.00	---	41	40-121%	16	30%	
Naphthalene	1.70	---	0.160	ug/L	4	4.00	---	42	40-121%	14	30%	
Phenanthrene	3.49	---	0.0800	ug/L	4	4.00	---	87	59-120%	11	30%	
Pyrene	4.05	---	0.0800	ug/L	4	4.00	---	101	57-126%	6	30%	
Carbazole	4.26	---	0.120	ug/L	4	4.00	---	106	60-122%	6	30%	
Dibenzofuran	2.59	---	0.0800	ug/L	4	4.00	---	65	53-120%	13	30%	
2-Chlorophenol	2.91	---	0.400	ug/L	4	4.00	---	73	38-120%	10	30%	
4-Chloro-3-methylphenol	4.00	---	0.800	ug/L	4	4.00	---	100	52-120%	12	30%	
2,4-Dichlorophenol	3.84	---	0.400	ug/L	4	4.00	---	96	47-121%	15	30%	Q-41
2,4-Dimethylphenol	2.51	---	2.00	ug/L	4	4.00	---	63	31-124%	10	30%	
2,4-Dinitrophenol	5.53	---	2.00	ug/L	4	4.00	---	138	23-143%	10	30%	Q-41
4,6-Dinitro-2-methylphenol	4.73	---	2.00	ug/L	4	4.00	---	118	44-137%	7	30%	Q-41
2-Methylphenol	2.74	---	0.200	ug/L	4	4.00	---	69	30-120%	12	30%	
3+4-Methylphenol(s)	2.81	---	0.200	ug/L	4	4.00	---	70	29-120%	13	30%	
2-Nitrophenol	3.61	---	0.800	ug/L	4	4.00	---	90	47-123%	12	30%	
4-Nitrophenol	2.01	---	0.800	ug/L	4	4.00	---	50	10-120%	3	30%	
Pentachlorophenol (PCP)	4.34	---	0.800	ug/L	4	4.00	---	109	35-138%	8	30%	
Phenol	1.26	---	0.800	ug/L	4	4.00	---	31	10-120%	11	30%	
2,3,4,6-Tetrachlorophenol	4.10	---	0.400	ug/L	4	4.00	---	103	50-128%	13	30%	

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## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0053 - EPA 3510C (Acid/Base Neutral)								Water				
LCS Dup (24E0053-BSD1)					Prepared: 05/02/24 04:55 Analyzed: 05/02/24 13:42					Q-19		
2,3,5,6-Tetrachlorophenol	4.37	---	0.400	ug/L	4	4.00	---	109	50-121%	11	30%	
2,4,5-Trichlorophenol	4.65	---	0.400	ug/L	4	4.00	---	116	53-123%	12	30%	Q-41
2,4,6-Trichlorophenol	4.21	---	0.400	ug/L	4	4.00	---	105	50-125%	13	30%	Q-41
Bis(2-ethylhexyl)phthalate	3.98	---	1.60	ug/L	4	4.00	---	100	55-135%	5	30%	
Butyl benzyl phthalate	3.98	---	1.60	ug/L	4	4.00	---	99	53-134%	3	30%	
Diethylphthalate	3.97	---	1.60	ug/L	4	4.00	---	99	56-125%	10	30%	
Dimethylphthalate	4.03	---	1.60	ug/L	4	4.00	---	101	45-127%	12	30%	
Di-n-butylphthalate	4.29	---	1.60	ug/L	4	4.00	---	107	59-127%	5	30%	
Di-n-octyl phthalate	4.17	---	1.60	ug/L	4	4.00	---	104	51-140%	4	30%	
N-Nitrosodimethylamine	1.92	---	0.200	ug/L	4	4.00	---	48	19-120%	11	30%	
N-Nitroso-di-n-propylamine	3.49	---	0.200	ug/L	4	4.00	---	87	49-120%	16	30%	
N-Nitrosodiphenylamine	3.51	---	0.200	ug/L	4	4.00	---	88	51-123%	12	30%	
Bis(2-Chloroethoxy) methane	3.27	---	0.200	ug/L	4	4.00	---	82	48-120%	14	30%	
Bis(2-Chloroethyl) ether	2.95	---	0.200	ug/L	4	4.00	---	74	43-120%	13	30%	B-02
2,2'-Oxybis(1-Chloropropane)	2.38	---	0.200	ug/L	4	4.00	---	60	41-120%	12	30%	
Hexachlorobenzene	3.21	---	0.0800	ug/L	4	4.00	---	80	53-125%	9	30%	
Hexachlorobutadiene	0.911	---	0.200	ug/L	4	4.00	---	23	22-124%	30	30%	
Hexachlorocyclopentadiene	0.797	---	0.400	ug/L	4	4.00	---	20	10-127%	22	30%	Q-41
Hexachloroethane	0.923	---	0.200	ug/L	4	4.00	---	23	21-120%	27	30%	
2-Chloronaphthalene	1.76	---	0.0800	ug/L	4	4.00	---	44	40-120%	13	30%	
1,2,4-Trichlorobenzene	1.17	---	0.200	ug/L	4	4.00	---	29	29-120%	21	30%	
4-Bromophenyl phenyl ether	2.74	---	0.200	ug/L	4	4.00	---	69	55-124%	11	30%	
4-Chlorophenyl phenyl ether	2.21	---	0.200	ug/L	4	4.00	---	55	53-121%	13	30%	
Aniline	2.38	---	0.400	ug/L	4	4.00	---	60	10-120%	13	30%	
4-Chloroaniline	3.03	---	0.200	ug/L	4	4.00	---	76	33-120%	15	30%	
2-Nitroaniline	4.03	---	1.60	ug/L	4	4.00	---	101	55-127%	16	30%	
3-Nitroaniline	3.62	---	1.60	ug/L	4	4.00	---	91	41-128%	13	30%	Q-31
4-Nitroaniline	3.95	---	1.60	ug/L	4	4.00	---	99	25-120%	9	30%	
Nitrobenzene	2.95	---	0.800	ug/L	4	4.00	---	74	45-121%	14	30%	
2,4-Dinitrotoluene	3.85	---	0.800	ug/L	4	4.00	---	96	57-128%	11	30%	
2,6-Dinitrotoluene	3.73	---	0.800	ug/L	4	4.00	---	93	57-124%	14	30%	
Benzoic acid	3.41	---	2.00	ug/L	4	8.00	---	43	10-120%	6	30%	Q-41
Benzyl alcohol	3.09	---	0.800	ug/L	4	4.00	---	77	31-120%	15	30%	
Isophorone	3.58	---	0.200	ug/L	4	4.00	---	89	42-124%	15	30%	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24E0053 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS Dup (24E0053-BSD1)</b>					Prepared: 05/02/24 04:55 Analyzed: 05/02/24 13:42						<b>Q-19</b>	
Azobenzene (1,2-DPH)	2.99	---	0.200	ug/L	4	4.00	---	75	61-120%	13	30%	
Bis(2-Ethylhexyl) adipate	3.93	---	2.00	ug/L	4	4.00	---	98	63-121%	4	30%	
3,3'-Dichlorobenzidine	10.8	---	4.00	ug/L	4	8.00	---	<b>136</b>	<b>27-129%</b>	0.2	30%	Q-29, Q-31, Q-52
1,2-Dinitrobenzene	3.77	---	2.00	ug/L	4	4.00	---	94	59-120%	14	30%	
1,3-Dinitrobenzene	4.00	---	2.00	ug/L	4	4.00	---	100	49-128%	14	30%	
1,4-Dinitrobenzene	3.77	---	2.00	ug/L	4	4.00	---	94	54-120%	15	30%	
Pyridine	2.01	---	0.800	ug/L	4	4.00	---	50	10-120%	16	30%	
1,2-Dichlorobenzene	1.13	---	0.200	ug/L	4	4.00	---	<b>28</b>	<b>32-120%</b>	22	30%	Q-30
1,3-Dichlorobenzene	1.03	---	0.200	ug/L	4	4.00	---	<b>26</b>	<b>28-120%</b>	25	30%	Q-30
1,4-Dichlorobenzene	1.07	---	0.200	ug/L	4	4.00	---	<b>27</b>	<b>29-120%</b>	24	30%	Q-30
<b>Surr: Nitrobenzene-d5 (Surr)</b>												
			Recovery:	85 %	Limits:	44-120 %	Dilution:	4x				
2-Fluorobiphenyl (Surr)				77 %		44-120 %		"				
Phenol-d6 (Surr)				32 %		10-133 %		"				
p-Terphenyl-d14 (Surr)				104 %		50-134 %		"				
2-Fluorophenol (Surr)				45 %		19-120 %		"				
2,4,6-Tribromophenol (Surr)				106 %		43-140 %		"				

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0261 - EPA 3015A						Water						
Blank (24E0261-BLK1)			Prepared: 05/07/24 14:57   Analyzed: 05/08/24 06:33									
EPA 6020B												
Aluminum	ND	---	50.0	ug/L	1	---	---	---	---	---	---	B-02
Antimony	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Beryllium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Calcium	ND	---	600	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Magnesium	ND	---	150	ug/L	1	---	---	---	---	---	---	
Manganese	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Nickel	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Potassium	ND	---	100	ug/L	1	---	---	---	---	---	---	
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Sodium	ND	---	100	ug/L	1	---	---	---	---	---	---	
Thallium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Vanadium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Zinc	ND	---	4.00	ug/L	1	---	---	---	---	---	---	
Blank (24E0261-BLK2)			Prepared: 05/07/24 14:57   Analyzed: 05/08/24 14:01									
EPA 6020B												
Boron	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Lithium	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Strontium	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
LCS (24E0261-BS1)			Prepared: 05/07/24 14:57   Analyzed: 05/08/24 06:39									
EPA 6020B												
Aluminum	3100	---	50.0	ug/L	1	2780	---	112	80-120%	---	---	
Antimony	29.2	---	1.00	ug/L	1	27.8	---	105	80-120%	---	---	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0261 - EPA 3015A						Water						
LCS (24E0261-BS1)				Prepared: 05/07/24 14:57		Analyzed: 05/08/24 06:39						
Arsenic	59.1	---	1.00	ug/L	1	55.6	---	106	80-120%	---	---	B-02
Barium	60.9	---	2.00	ug/L	1	55.6	---	110	80-120%	---	---	
Beryllium	28.2	---	0.200	ug/L	1	27.8	---	102	80-120%	---	---	
Cadmium	58.4	---	0.200	ug/L	1	55.6	---	105	80-120%	---	---	
Chromium	59.2	---	2.00	ug/L	1	55.6	---	107	80-120%	---	---	
Copper	61.2	---	2.00	ug/L	1	55.6	---	110	80-120%	---	---	
Lead	58.0	---	0.200	ug/L	1	55.6	---	104	80-120%	---	---	
Magnesium	3220	---	150	ug/L	1	2780	---	116	80-120%	---	---	
Manganese	59.8	---	1.00	ug/L	1	55.6	---	108	80-120%	---	---	
Mercury	1.13	---	0.0800	ug/L	1	1.11	---	101	80-120%	---	---	
Molybdenum	29.6	---	1.00	ug/L	1	27.8	---	107	80-120%	---	---	
Nickel	65.0	---	2.00	ug/L	1	55.6	---	117	80-120%	---	---	
Potassium	3180	---	100	ug/L	1	2780	---	114	80-120%	---	---	
Selenium	29.0	---	1.00	ug/L	1	27.8	---	104	80-120%	---	---	
Silver	29.9	---	0.200	ug/L	1	27.8	---	107	80-120%	---	---	
Sodium	3120	---	100	ug/L	1	2780	---	112	80-120%	---	---	
Thallium	28.8	---	0.200	ug/L	1	27.8	---	104	80-120%	---	---	
Vanadium	58.4	---	2.00	ug/L	1	55.6	---	105	80-120%	---	---	
Zinc	60.0	---	4.00	ug/L	1	55.6	---	108	80-120%	---	---	
LCS (24E0261-BS2)				Prepared: 05/07/24 14:57		Analyzed: 05/08/24 14:06						
EPA 6020B												
Boron	223	---	10.0	ug/L	1	222	---	100	80-120%	---	---	Q-16
Lithium	220	---	5.00	ug/L	1	222	---	99	80-120%	---	---	
Strontium	223	---	5.00	ug/L	1	222	---	101	80-120%	---	---	
LCS (24E0261-BS3)				Prepared: 05/07/24 14:57		Analyzed: 05/09/24 02:59						
EPA 6020B												
Calcium	3330	---	600	ug/L	1	2780	---	120	80-120%	---	---	
Duplicate (24E0261-DUP1)				Prepared: 05/07/24 14:57		Analyzed: 05/08/24 07:46						
QC Source Sample: Non-SDG (A4D1728-01)												
Aluminum	ND	---	50.0	ug/L	1	---	ND	---	---	---	20%	
Antimony	ND	---	1.00	ug/L	1	---	ND	---	---	---	20%	

Apex Laboratories

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503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0261 - EPA 3015A						Water						
Duplicate (24E0261-DUP1)				Prepared: 05/07/24 14:57    Analyzed: 05/08/24 07:46								
QC Source Sample: Non-SDG (A4D1728-01)												
Arsenic	2.22	---	1.00	ug/L	1	---	2.24	---	---	1	20%	B-02
Barium	268	---	2.00	ug/L	1	---	267	---	---	0.1	20%	
Beryllium	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Cadmium	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Chromium	ND	---	2.00	ug/L	1	---	ND	---	---	---	20%	
Copper	ND	---	2.00	ug/L	1	---	ND	---	---	---	20%	
Lead	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Mercury	ND	---	0.0800	ug/L	1	---	ND	---	---	---	20%	
Molybdenum	ND	---	1.00	ug/L	1	---	ND	---	---	---	20%	
Nickel	ND	---	2.00	ug/L	1	---	2.09	---	---	***	20%	
Potassium	19000	---	100	ug/L	1	---	18800	---	---	0.6	20%	
Selenium	ND	---	1.00	ug/L	1	---	ND	---	---	---	20%	
Silver	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Thallium	ND	---	0.200	ug/L	1	---	ND	---	---	---	20%	
Vanadium	ND	---	2.00	ug/L	1	---	ND	---	---	---	20%	
Zinc	ND	---	4.00	ug/L	1	---	ND	---	---	---	20%	
Duplicate (24E0261-DUP2)				Prepared: 05/07/24 14:57    Analyzed: 05/08/24 09:40								
QC Source Sample: Non-SDG (A4D1728-01)												
Beryllium	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	R-04,Q-16
Magnesium	77100	---	1500	ug/L	10	---	73600	---	---	5	20%	Q-16
Manganese	4290	---	10.0	ug/L	10	---	4220	---	---	1	20%	Q-16
Sodium	447000	---	1000	ug/L	10	---	440000	---	---	2	20%	Q-16
Duplicate (24E0261-DUP3)				Prepared: 05/07/24 14:57    Analyzed: 05/08/24 14:26								
QC Source Sample: Non-SDG (A4D1728-01)												
Boron	886	---	100	ug/L	10	---	851	---	---	4	20%	R-04
Lithium	ND	---	50.0	ug/L	10	---	ND	---	---	---	20%	
Strontium	1430	---	50.0	ug/L	10	---	1420	---	---	0.7	20%	
Duplicate (24E0261-DUP4)				Prepared: 05/07/24 14:57    Analyzed: 05/09/24 12:13								
QC Source Sample: Non-SDG (A4D1728-01RE2)												

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ORELAP ID: OR100062

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55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0261 - EPA 3015A						Water						
Duplicate (24E0261-DUP4)				Prepared: 05/07/24 14:57   Analyzed: 05/09/24 12:13								
QC Source Sample: Non-SDG (A4D1728-01RE2)												
Calcium	198000	---	6000	ug/L	10	---	179000	---	---	10	20%	Q-16
Matrix Spike (24E0261-MS1)				Prepared: 05/07/24 14:57   Analyzed: 05/08/24 08:07								
QC Source Sample: Non-SDG (A4D1728-02)												
EPA 6020B												
Aluminum	3320	---	50.0	ug/L	1	2780	75.8	117	75-125%	---	---	B-02
Antimony	29.5	---	1.00	ug/L	1	27.8	ND	106	75-125%	---	---	
Arsenic	66.0	---	1.00	ug/L	1	55.6	5.47	109	75-125%	---	---	
Barium	174	---	2.00	ug/L	1	55.6	111	113	75-125%	---	---	
Cadmium	58.5	---	0.200	ug/L	1	55.6	ND	105	75-125%	---	---	
Chromium	63.8	---	2.00	ug/L	1	55.6	3.05	109	75-125%	---	---	
Copper	57.6	---	2.00	ug/L	1	55.6	1.47	101	75-125%	---	---	
Lead	55.6	---	0.200	ug/L	1	55.6	ND	100	75-125%	---	---	
Manganese	1990	---	1.00	ug/L	1	55.6	1930	116	75-125%	---	---	
Mercury	1.10	---	0.0800	ug/L	1	1.11	ND	99	75-125%	---	---	
Molybdenum	33.1	---	1.00	ug/L	1	27.8	0.698	117	75-125%	---	---	
Nickel	59.1	---	2.00	ug/L	1	55.6	1.93	103	75-125%	---	---	
Selenium	29.9	---	1.00	ug/L	1	27.8	ND	108	75-125%	---	---	
Silver	28.6	---	0.200	ug/L	1	27.8	ND	103	75-125%	---	---	
Thallium	26.7	---	0.200	ug/L	1	27.8	ND	96	75-125%	---	---	
Vanadium	70.7	---	2.00	ug/L	1	55.6	6.74	115	75-125%	---	---	
Zinc	60.5	---	4.00	ug/L	1	55.6	ND	109	75-125%	---	---	
Matrix Spike (24E0261-MS2)				Prepared: 05/07/24 14:57   Analyzed: 05/08/24 15:39								
QC Source Sample: Non-SDG (A4D1728-03)												
EPA 6020B												
Boron	502	---	10.0	ug/L	1	222	282	99	75-125%	---	---	
Lithium	236	---	5.00	ug/L	1	222	16.2	99	75-125%	---	---	
Strontium	547	---	5.00	ug/L	1	222	281	120	75-125%	---	---	
Matrix Spike (24E0261-MS3)				Prepared: 05/07/24 14:57   Analyzed: 05/08/24 09:53								
OC Source Sample: Non-SDG (A4D1728-02RE1)												

Apex Laboratories

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GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0261 - EPA 3015A						Water						
Matrix Spike (24E0261-MS3)			Prepared: 05/07/24 14:57   Analyzed: 05/08/24 09:53									
QC Source Sample: Non-SDG (A4D1728-02RE1)												
EPA 6020B												
Beryllium	34.0	---	20.0	ug/L	100	27.8	ND	122	75-125%	---	---	Q-16
Magnesium	108000	---	15000	ug/L	100	2780	102000	198	75-125%	---	---	Q-16, Q-65
Potassium	64000	---	10000	ug/L	100	2780	55000	326	75-125%	---	---	Q-16, Q-65
Sodium	1020000	---	10000	ug/L	100	2780	1020000	11	75-125%	---	---	Q-16, Q-65
Matrix Spike (24E0261-MS4)			Prepared: 05/07/24 14:57   Analyzed: 05/09/24 12:38									
QC Source Sample: Non-SDG (A4D1728-02RE2)												
EPA 6020B												
Calcium	99900	---	60000	ug/L	100	2780	101000	-47	75-125%	---	---	Q-16, Q-65

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1073 - Method Prep: Aq						Water						
Blank (24D1073-BLK1)			Prepared: 04/29/24 10:17    Analyzed: 04/29/24 13:05									
<u>SM 4500-NH3 G</u>												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24D1073-BS1)			Prepared: 04/29/24 10:17    Analyzed: 04/29/24 13:06									
<u>SM 4500-NH3 G</u>												
Ammonia as N	2.07	---	0.0200	mg/L	1	2.00	---	104	90-111%	---	---	
Matrix Spike (24D1073-MS1)			Prepared: 04/29/24 10:17    Analyzed: 04/29/24 13:11									
<u>QC Source Sample: Non-SDG (A4D1567-02)</u>												
<u>SM 4500-NH3 G</u>												
Ammonia as N	2.68	---	0.0250	mg/L	1	2.50	0.108	103	90-111%	---	---	
Matrix Spike Dup (24D1073-MSD1)			Prepared: 04/29/24 10:17    Analyzed: 04/29/24 13:12									
<u>QC Source Sample: Non-SDG (A4D1567-02)</u>												
Ammonia as N	2.66	---	0.0250	mg/L	1	2.50	0.108	102	90-111%	0.7	13%	

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1030 - Method Prep: Aq						Water						
Blank (24D1030-BLK1)			Prepared: 04/26/24 11:57    Analyzed: 04/26/24 14:05									
EPA 300.0												
Bromide	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Chloride	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Fluoride	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (24D1030-BS1)			Prepared: 04/26/24 11:57    Analyzed: 04/26/24 14:27									
EPA 300.0												
Bromide	8.32	---	1.00	mg/L	1	8.00	---	104	90-110%	---	---	
Chloride	8.23	---	1.00	mg/L	1	8.00	---	103	90-110%	---	---	
Fluoride	8.23	---	1.00	mg/L	1	8.00	---	103	90-110%	---	---	
Nitrate-Nitrogen	2.05	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Nitrite-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Sulfate	8.34	---	1.00	mg/L	1	8.00	---	104	90-110%	---	---	
Duplicate (24D1030-DUP1)			Prepared: 04/26/24 11:57    Analyzed: 04/26/24 16:36									
QC Source Sample: GM1-MW4-042524 (A4D1585-01)												
EPA 300.0												
Bromide	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	
Chloride	1.84	---	1.00	mg/L	1	---	1.84	---	---	0.1	3%	
Fluoride	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	
Nitrate-Nitrogen	0.701	---	0.250	mg/L	1	---	0.699	---	---	0.3	3%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Sulfate	2.04	---	1.00	mg/L	1	---	2.06	---	---	0.8	4%	
Duplicate (24D1030-DUP2)			Prepared: 04/26/24 11:57    Analyzed: 04/26/24 19:50									
QC Source Sample: Non-SDG (A4D1619-01)												
Bromide	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	CONT
Chloride	1.79	---	1.00	mg/L	1	---	1.79	---	---	0.2	3%	CONT
Fluoride	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	CONT
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	3%	CONT

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062GSI Water Solutions55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: SantiamProject Number: **00464.027**Project Manager: **Jesse Hall**Report ID:**A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1030 - Method Prep: Aq						Water						
Duplicate (24D1030-DUP2)				Prepared: 04/26/24 11:57   Analyzed: 04/26/24 19:50								
<u>QC Source Sample: Non-SDG (A4D1619-01)</u>												
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	CONT
Sulfate	68.5	---	1.00	mg/L	1	---	67.2	---	---	2	4%	CONT,E
Matrix Spike (24D1030-MS1)				Prepared: 04/26/24 11:57   Analyzed: 04/26/24 16:57								
<u>QC Source Sample: GM1-MW4-042524 (A4D1585-01)</u>												
<u>EPA 300.0</u>												
Bromide	10.4	---	1.25	mg/L	1	10.0	ND	104	85-115%	---	---	
Chloride	12.4	---	1.25	mg/L	1	10.0	1.84	106	90-113%	---	---	
Fluoride	10.6	---	1.25	mg/L	1	10.0	ND	106	88-120%	---	---	
Nitrate-Nitrogen	3.26	---	0.312	mg/L	1	2.50	0.699	103	87-112%	---	---	
Nitrite-Nitrogen	2.54	---	0.312	mg/L	1	2.50	ND	102	90-114%	---	---	
Sulfate	12.6	---	1.25	mg/L	1	10.0	2.06	106	88-115%	---	---	
Matrix Spike (24D1030-MS2)				Prepared: 04/26/24 11:57   Analyzed: 04/26/24 20:11								
<u>QC Source Sample: Non-SDG (A4D1619-01)</u>												
<u>EPA 300.0</u>												
Bromide	10.6	---	1.25	mg/L	1	10.0	ND	106	85-115%	---	---	CONT
Chloride	12.3	---	1.25	mg/L	1	10.0	1.79	105	90-113%	---	---	CONT
Fluoride	12.3	---	1.25	mg/L	1	10.0	ND	123	88-120%	---	---	CONT,Q-01
Nitrate-Nitrogen	2.58	---	0.312	mg/L	1	2.50	ND	103	87-112%	---	---	CONT
Nitrite-Nitrogen	2.58	---	0.312	mg/L	1	2.50	ND	103	90-114%	---	---	CONT
Sulfate	79.1	---	1.25	mg/L	1	10.0	67.2	119	88-115%	---	---	CONT,E, Q-01

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: Santiam  
Project Number: 00464.027  
Project Manager: Jesse HallReport ID:  
A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0029 - ASTM D7511-12 (W)						Water						
Blank (24E0029-BLK1)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:18									
<u>D7511-12</u>												
Total Cyanide	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (24E0029-BS1)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:20									
<u>D7511-12</u>												
Total Cyanide	0.0260	---	0.00500	mg/L	1	0.0250	---	104	84-116%	---	---	
Matrix Spike (24E0029-MS1)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:26									
<u>QC Source Sample: GM1-MW4-042524 (A4D1585-01)</u>												
<u>D7511-12</u>												
Total Cyanide	0.0256	---	0.00503	mg/L	1	0.0251	ND	102	64-136%	---	---	
Matrix Spike (24E0029-MS2)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:38									
<u>QC Source Sample: Non-SDG (A4D1621-02)</u>												
<u>D7511-12</u>												
Total Cyanide	0.0361	---	0.00503	mg/L	1	0.0251	0.00970	105	64-136%	---	---	
Matrix Spike Dup (24E0029-MSD1)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:28									
<u>QC Source Sample: GM1-MW4-042524 (A4D1585-01)</u>												
<u>D7511-12</u>												
Total Cyanide	0.0262	---	0.00503	mg/L	1	0.0251	ND	104	64-136%	2	47%	
Matrix Spike Dup (24E0029-MSD2)			Prepared: 05/01/24 12:29   Analyzed: 05/01/24 15:40									
<u>QC Source Sample: Non-SDG (A4D1621-02)</u>												
Total Cyanide	0.0354	---	0.00503	mg/L	1	0.0251	0.00970	102	64-136%	2	47%	

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## ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Phosphorus by Persulfate Digestion/Colorimetric Spectrophotometry

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0080 - Persulfate Digestion						Water						
Blank (24E0080-BLK1)			Prepared: 05/02/24 10:09		Analyzed: 05/02/24 16:36							
<u>SM 4500-P E</u>												
Phosphorus	ND	---	0.100	mg/L	1	---	---	---	---	---	---	
LCS (24E0080-BS1)			Prepared: 05/02/24 10:09		Analyzed: 05/02/24 16:37							
<u>SM 4500-P E</u>												
Phosphorus	0.550	---	0.100	mg/L	1	0.522	---	105	85-118%	---	---	
Matrix Spike (24E0080-MS1)			Prepared: 05/02/24 10:09		Analyzed: 05/02/24 16:47							
<u>QC Source Sample: Non-SDG (A4D1637-11)</u>												
<u>SM 4500-P E</u>												
Phosphorus	0.158	---	0.100	mg/L	1	0.522	ND	30	85-118%	---	---	Q-02
Matrix Spike Dup (24E0080-MSD1)			Prepared: 05/02/24 10:09		Analyzed: 05/02/24 16:47							
<u>QC Source Sample: Non-SDG (A4D1637-11)</u>												
Phosphorus	0.116	---	0.100	mg/L	1	0.522	ND	22	85-118%	31	19%	Q-02

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ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0112 - Total Dissolved Solids - 2022						Water						
Blank (24E0112-BLK1)			Prepared: 05/02/24 19:08		Analyzed: 05/02/24 19:08							
SM 2540 C												
Total Dissolved Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (24E0112-DUP1)			Prepared: 05/02/24 19:08		Analyzed: 05/02/24 19:08							
QC Source Sample: Non-SDG (A4D1588-01RE1)												
Total Dissolved Solids	556	---	5.00	mg/L	1	---	560	---	---	0.717	10%	
Duplicate (24E0112-DUP2)			Prepared: 05/02/24 19:08		Analyzed: 05/02/24 19:08							
QC Source Sample: Non-SDG (A4D1711-01)												
Total Dissolved Solids	70.0	---	5.00	mg/L	1	---	50.0	---	---	33.3	10%	Q-17
Reference (24E0112-SRM1)			Prepared: 05/02/24 19:08		Analyzed: 05/02/24 19:08							
SM 2540 C												
Total Dissolved Solids	2500	---		mg/L	1	2470		101	81.8-118.2%	---	---	

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Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D0950 - Method Prep: Aq						Water						
Duplicate (24D0950-DUP1)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 18:32							
QC Source Sample: Non-SDG (A4D1575-01)												
pH	6.0	---		pH Units	1	---	6.0	---	---	0.2	2%	H-12
pH Temperature (deg C)	19.9	---		pH Units	1	---	20.7	---	---	4	30%	H-12
Reference (24D0950-SRM1)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 11:22							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	21.2	---		pH Units	1	20.0		106	50-200%	---	---	
Reference (24D0950-SRM2)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 11:24							
SM 4500-H+ B												
pH	8.0	---		pH Units	1	8.00		99	99-101%	---	---	
pH Temperature (deg C)	21.2	---		pH Units	1	20.0		106	50-200%	---	---	
Reference (24D0950-SRM3)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 18:29							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	21.5	---		pH Units	1	20.0		108	50-200%	---	---	
Reference (24D0950-SRM4)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 18:45							
SM 4500-H+ B												
pH	8.0	---		pH Units	1	8.00		99	99-101%	---	---	
pH Temperature (deg C)	21.4	---		pH Units	1	20.0		107	50-200%	---	---	
Reference (24D0950-SRM5)			Prepared: 04/25/24 09:42		Analyzed: 04/25/24 18:53							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	21.6	---		pH Units	1	20.0		108	50-200%	---	---	

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ANALYTICAL REPORT

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ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**

Project Number: **00464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Conventional Chemistry Parameters**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1034 - Method Prep: Aq						Water						
Blank (24D1034-BLK1)			Prepared: 04/26/24 13:43    Analyzed: 04/26/24 17:40									
SM 2510 B												
Conductivity	ND	---	2.50	umhos/cm @25degC	1	---	---	---	---	---	---	
Duplicate (24D1034-DUP1)			Prepared: 04/26/24 13:43    Analyzed: 04/26/24 18:01									
QC Source Sample: GM1-MW4-042524 (A4D1585-01)												
SM 2510 B												
Conductivity	145	---	2.50	umhos/cm @25degC	1	---	145	---	---	0.1	3%	
Reference (24D1034-SRM1)			Prepared: 04/26/24 13:43    Analyzed: 04/26/24 17:43									
SM 2510 B												
Conductivity	1440	---		umhos/cm @25degC	1	1410		102	95-105%	---	---	

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## ANALYTICAL REPORT

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Project: Santiam

Project Number: 00464.027

Project Manager: Jesse Hall

Report ID:

A4D1585 - 05 14 24 1516

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D1070 - Method Prep: Aq						Water						
Blank (24D1070-BLK1)			Prepared: 04/29/24 09:43		Analyzed: 04/29/24 11:18							
SM 2320 B												
Total Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Bicarbonate Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Carbonate Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Hydroxide Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
LCS (24D1070-BS1)			Prepared: 04/29/24 09:43		Analyzed: 04/29/24 11:27							
SM 2320 B												
Total Alkalinity	104	---	20.0	mg	1	100	---	104	90-115%	---	---	
				CaCO3/L								
Duplicate (24D1070-DUP1)			Prepared: 04/29/24 09:43		Analyzed: 04/29/24 11:51							
QC Source Sample: Non-SDG (A4D1533-01)												
Total Alkalinity	46.2	---	20.0	mg	1	---	45.9	---	---	0.7	5%	
				CaCO3/L								
Bicarbonate Alkalinity	46.2	---	20.0	mg	1	---	45.9	---	---	0.7	5%	
				CaCO3/L								
Carbonate Alkalinity	ND	---	20.0	mg	1	---	ND	---	---	---	5%	
				CaCO3/L								
Hydroxide Alkalinity	ND	---	20.0	mg	1	---	ND	---	---	---	5%	
				CaCO3/L								

Apex Laboratories

Philip Nerenberg, Lab Director

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**ANALYTICAL REPORT****Apex Laboratories, LLC**6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516****SAMPLE PREPARATION INFORMATION****Volatile Organic Compounds by EPA 8260D****Prep: EPA 5030C**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0144</b>							
A4D1585-01RE1	Water	EPA 8260D	04/25/24 11:50	05/03/24 11:47	5mL/5mL	5mL/5mL	1.00
A4D1585-02RE1	Water	EPA 8260D	04/25/24 14:50	05/03/24 11:47	5mL/5mL	5mL/5mL	1.00

**Semivolatile Organic Compounds by EPA 8270E****Prep: EPA 3510C (Acid/Base Neutral)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0053</b>							
A4D1585-01RE1	Water	EPA 8270E	04/25/24 11:50	05/02/24 04:55	1020mL/1mL	1000mL/1mL	0.98
A4D1585-02RE1	Water	EPA 8270E	04/25/24 14:50	05/02/24 04:55	920mL/1mL	1000mL/1mL	1.09

**Total Metals by EPA 6020B (ICPMS)****Prep: EPA 3015A**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0261</b>							
A4D1585-01	Water	EPA 6020B	04/25/24 11:50	05/07/24 14:57	45mL/50mL	45mL/50mL	1.00
A4D1585-01RE1	Water	EPA 6020B	04/25/24 11:50	05/07/24 14:57	45mL/50mL	45mL/50mL	1.00
A4D1585-02	Water	EPA 6020B	04/25/24 14:50	05/07/24 14:57	45mL/50mL	45mL/50mL	1.00
A4D1585-02RE1	Water	EPA 6020B	04/25/24 14:50	05/07/24 14:57	45mL/50mL	45mL/50mL	1.00

**Ammonia by Gas Diffusion and Colorimetric Detection****Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D1073</b>							
A4D1585-01	Water	SM 4500-NH3 G	04/25/24 11:50	04/29/24 10:17	10mL/10mL	10mL/10mL	1.00
A4D1585-02	Water	SM 4500-NH3 G	04/25/24 14:50	04/29/24 10:17	10mL/10mL	10mL/10mL	1.00

**Anions by Ion Chromatography****Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D1030</b>							
A4D1585-01	Water	EPA 300.0	04/25/24 11:50	04/26/24 11:57	5mL/5mL	5mL/5mL	1.00
A4D1585-02	Water	EPA 300.0	04/25/24 14:50	04/26/24 11:57	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

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ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516**

## SAMPLE PREPARATION INFORMATION

## Anions by Ion Chromatography

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	-------------------------	--------------------------	-------------------

## Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

**Prep: ASTM D7511-12 (W)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	-------------------------	--------------------------	-------------------

**Batch: 24E0029**

A4D1585-01	Water	D7511-12	04/25/24 11:50	05/01/24 12:29	10mL/10mL	10mL/10mL	1.00
A4D1585-02	Water	D7511-12	04/25/24 14:50	05/01/24 12:29	10mL/10mL	10mL/10mL	1.00

## Total Phosphorus by Persulfate Digestion/Colorimetric Spectrophotometry

**Prep: Persulfate Digestion**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	-------------------------	--------------------------	-------------------

**Batch: 24E0080**

A4D1585-01	Water	SM 4500-P E	04/25/24 11:50	05/02/24 10:09	25mL/50mL	25mL/50mL	1.00
A4D1585-02	Water	SM 4500-P E	04/25/24 14:50	05/02/24 10:09	25mL/50mL	25mL/50mL	1.00

## Solid and Moisture Determinations

**Prep: Total Dissolved Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	-------------------------	--------------------------	-------------------

**Batch: 24E0112**

A4D1585-01RE1	Water	SM 2540 C	04/25/24 11:50	05/02/24 19:08			NA
A4D1585-02RE1	Water	SM 2540 C	04/25/24 14:50	05/02/24 19:08			NA

## Conventional Chemistry Parameters

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	-------------------------	--------------------------	-------------------

**Batch: 24D0950**

A4D1585-01	Water	SM 4500-H+ B	04/25/24 11:50	04/25/24 18:08	20mL/20mL	20mL/20mL	NA
A4D1585-02	Water	SM 4500-H+ B	04/25/24 14:50	04/25/24 18:08	20mL/20mL	20mL/20mL	NA

**Batch: 24D1034**

A4D1585-01	Water	SM 2510 B	04/25/24 11:50	04/26/24 13:43	40mL/40mL	40mL/40mL	NA
A4D1585-02	Water	SM 2510 B	04/25/24 14:50	04/26/24 13:43	40mL/40mL	40mL/40mL	NA

**Batch: 24D1070**

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam

Project Number: **00464.027**

Project Manager: **Jesse Hall**

Report ID:

**A4D1585 - 05 14 24 1516**

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4D1585-01	Water	SM 2320 B	04/25/24 11:50	04/29/24 09:43	60mL/60mL	60mL/60mL	NA
A4D1585-02	Water	SM 2320 B	04/25/24 14:50	04/29/24 09:43	60mL/60mL	60mL/60mL	NA

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## ANALYTICAL REPORT

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**A4D1585 - 05 14 24 1516**

## QUALIFIER DEFINITIONS

### **Client Sample and Quality Control (QC) Sample Qualifier Definitions:**

**Apex Laboratories**

- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- CONT** The Sample Container provided for this analysis was not provided by Apex Laboratories, and has not been verified as part of the Apex Quality System.
- E** Estimated Value. The result is above the calibration range of the instrument.
- H-12** Sample Analysis or Filtration was performed >15 minutes after sample collection. Consult regulator or permit manager to determine the usability of data for intended use.
- Q-01** Spike recovery and/or RPD is outside acceptance limits.
- Q-02** Spike recovery is outside of established control limits due to matrix interference.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-17** RPD between original and duplicate sample, or spike duplicates, is outside of established control limits.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-30** Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
- Q-31** Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-52** Due to known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method.
- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +1%. The results are reported as Estimated Values.
- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +12%. The results are reported as Estimated Values.
- Q-54b** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +120%. The results are reported as Estimated Values.
- Q-54c** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +17%. The results are reported as Estimated Values.
- Q-54d** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +2%. The results are reported as Estimated Values.
- Q-54e** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +3%. The results are reported as Estimated Values.

Apex Laboratories

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Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

- Q-54f** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +45%. The results are reported as Estimated Values.
- Q-54g** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +5%. The results are reported as Estimated Values.
- Q-54h** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +67%. The results are reported as Estimated Values.
- Q-54i** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by +75%. The results are reported as Estimated Values.
- Q-54j** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -1%. The results are reported as Estimated Values.
- Q-54k** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -2%. The results are reported as Estimated Values.
- Q-55** Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
- Q-56** Daily CCV/LCS recovery for this analyte was above the +/-20% criteria listed in EPA 8260
- Q-65** Spike recovery is estimated due to the high analyte concentration of the source sample.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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Portland, OR 97209

Project: **Santiam**

Project Number: **00464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

**"dry"** Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

**"wet"** Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

**" "** Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

**" --- "** QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

**" \*\*\* "** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

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Portland, OR 97209

Project: **Santiam**

Project Number: **00464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to  $\frac{1}{2}$  the Reporting Limit (RL).

-For Blank hits falling between  $\frac{1}{2}$  the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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Philip Nerenberg, Lab Director



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Project: **Santiam**

Project Number: **00464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1585 - 05 14 24 1516**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)** -

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
--------	----------	--------	---------	--------	---------------

All reported analytes are included in Apex Laboratories' current ORELAP scope.

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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**GSI Water Solutions**  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**  
Project Number: **00464.027**  
Project Manager: **Jesse Hall**

**Report ID:**  
**A4D1585 - 05 14 24 1516**

APEX LABS		CHAIN OF CUSTODY		Lab # <b>A4D1585</b> coc <b>2</b> of <b>2</b>	
Company: GSI WATER SOLUTIONS		Project Name: 00464.027 SANTIAM		Project #: CANYON	
Address: 6700 SW Sandburg St, Tigard, OR 97223 Ph: 503-718-2323		Project Mgr: ERIK PEDERSEN		PO #	
Sampled by: 06, 91232		Phone: 541-981-0172 Email: jhall@gsws.com			
Site Location:		ANALYSIS REQUEST			
State: OREGON					
County: MARION					
SAMPLE ID					
DATE					
TIME					
MATRIX					
# OF CONTAINERS					
NWTPH-HCD					
NWTPH-DX					
NWTPH-GX					
8260 RTECH					
8260 RBDM VOCs					
8260 Halo VOCs					
8260 VOCs Full List					
8270 SIM PAHs					
8270 Semi-Vols Full List					
8082 PCBs					
8081 Pesticides					
RCRA Metals (8)					
Priority Metals (13)					
Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Ti, V, Zn					
TOTAL DISS. TCLP					
TCLP Metals (8)					
Hold Sample					
Frozen Archive					
SPECIAL INSTRUCTIONS:					
Standard Turn Around Time (TAT) = 10 Business Days					
TAT Requested (circle) <b>1 Day</b> 2 Day 3 Day 5 Day Standard Other:					
SAMPLES ARE HELD FOR 30 DAYS					
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:	
Signature: <i>Wally Norom</i>		Signature: <i>Wally Norom</i>		Signature:	
Date: 04/25/24		Date: 04/25/24		Date:	
Printed Name: Wally Norom		Printed Name: Wally Norom		Printed Name:	
Time: 04/25/24		Time: 04/25/24		Time:	
Company: GSI WATER SOLUTIONS INC.		Company: GSI WATER SOLUTIONS INC.		Company:	



**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516****Philip Nerenberg**

**From:** Jesse Hall [jhall@gsiws.com]  
**Sent:** Thursday, April 25, 2024 2:47 PM  
**To:** Philip Nerenberg  
**Subject:** Santiam PIT Background Sampling

**CAUTION! THIS IS AN EXTERNAL EMAIL:**

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thanks for taking care of this Philip. Would you please print out a list of analytes to attach to the COC when the samples come in?

- **Two (2) groundwater samples for:**
  - General Parameters by Methods SM4500-H/SM2510B/SM2540C/SM2320B including pH, specific conductivity, total dissolved solids (TDS), and alkalinity (total, bicarbonate, carbonate, hydroxide).
  - Total metals and major cations by EPA Methods 6020B/SM4500PE including aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, copper, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus (as phosphate), potassium, selenium, silver, sodium, strontium, thallium, vanadium, and zinc.
  - Anions including bromide, chloride, fluoride, and sulfate by EPA Method 300.0/9056A.
  - Nitrogen species by EPA Method 300.0/9056A including nitrate, nitrite, and ammonia
  - Cyanide by American Society for Testing Materials (ASTM) Method D7511.
  - Volatile Organic Compounds (VOCs) by EPA Method 8260D.
  - Semi-volatile Organic Compounds (SVOCs) by EPA Method 8270E.

The crew had a little trouble getting started this morning and are running late. It looks like they will finish around 4 and have samples to the lab around 5. Apologies for the late drop off.

Thanks,

**Jesse Hall, GIT**  
**Project Hydrogeologist**  
mobile: 541.981.0172  
650 NE Holladay Street, Suite 900, Portland, OR 97232  
GSI Water Solutions, Inc. | [www.gsiws.com](http://www.gsiws.com)







## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

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55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **00464.027**Project Manager: **Jesse Hall****Report ID:****A4D1585 - 05 14 24 1516****APEX LABS COOLER RECEIPT FORM**Client: GSI Water Solutions Element WO#: A4D1585Project/Project #: 00464.027 Santiam Canyon**Delivery Info:**Date/time received: 4/25/24 @ 1647 By: APWDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐From USDA Regulated Origin? Yes ☐ No ☒**Cooler Inspection** Date/time inspected: 4/25/24 @ 1647 By: APWChain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐Contains USDA Reg. Soils? Yes ☐ No ☒ Unsure (email RegSoils) ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>5.9</u>	<u>4.8</u>					
Custody seals? (Y/N)	<u>N</u>	<u>→</u>					
Received on ice? (Y/N)	<u>Y</u>	<u>→</u>					
Temp. blanks? (Y/N)	<u>N</u>	<u>→</u>					
Ice type: (Gel/Real/Other)	<u>Real</u>	<u>→</u>					
Condition (In/Out):	<u>In</u>	<u>→</u>					

Cooler out of temp? (Y/N) ☒ Possible reason why: Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐**Sample Inspection:** Date/time inspected: 4/25/24 @ 17:07 By: ZAMAll samples intact? Yes ☒ No ☐ Comments: Bottle labels/COCs agree? Yes ☒ No ☐ Comments: COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: Do VOA vials have visible headspace? Yes ☐ No ☒ NA ☐Comments: Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐ pH ID: A231112Comments: A244122Labeled by: ZAMWitness: APWCooler Inspected by: ZAM

Form Y-003 R-02

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

## TEST REPORT

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

05/09/2023

CITMILC

PO#:

### Collection Information

Date: 05/02/2023  
Time: 0900  
By: Russ  
Lab #: 20230502-095  
Location: 360 Remine Rd Mill City INF

### Lab Receipt Information

05/02/2023  
1045  
SW

### Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	EPA Limit	Analysis	
								Date	Tech
Alkalinity, Total - 1927	SM2320 B		279.		10.	mg/l CaCO3		05/04/2023	AS
Bicarbonate Alkalinity	SM2320B		340.4		10	HC03		05/04/2023	AS
Hardness as CaCO3	SM2340C		86.		10.	mg/l CaCO3	250	05/04/2023	AS

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

\* Accreditation

A- Waterlab Corporation, ORELAP 100039

The results relate only to the parameters tested or to the sample as received by the laboratory.

This report shall not be reproduced except in full, without the written approval of Waterlab Corporation.

Approved by: 

## TEST REPORT

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

05/22/2023

CITMILC

PO#:

### Collection Information

Date: 05/02/2023  
Time: 0900  
By: Russ  
Lab #: 20230502-096  
Location: 360 Remine Rd Mill City Inf

### Lab Receipt Information

05/02/2023  
1045  
SW

### Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Inorganic Chemicals								
Antimony	SM3113B		ND		0.005	mg/l	05/12/2023	bem
Arsenic	SM3113B		ND		0.002	mg/l	05/08/2023	bem
Barium	SM3113B	B	0.0109		0.0005	mg/l	05/12/2023	1515 cbb
Beryllium	SM3113B		ND		0.001	mg/l	06/05/2023	bem
Cadmium	SM3113B		ND		0.001	mg/l	05/11/2023	bem
Chromium	SM3113B		ND		0.02	mg/l	05/09/2023	bem
Fluoride	EPA300.0		7.41		0.2	mg/l	05/02/2023	bem
Lead	SM3113 B		ND		0.001	mg/l	05/15/2023	bem
Mercury	SM3112B		ND		0.001	mg/l	05/17/2023	bem

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

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\* Accreditation

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B=Neilson Research Corporation, ORELAP ID#OR100016

Approved by: \_\_\_\_\_

## TEST REPORT

LAB #: 20230502-096

(Cont)

CITMILC

Page: 2

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Nickel	SM3113B		ND		0.05	mg/l	05/09/2023	bem
Nitrogen, Nitrate	EPA300.0		ND		0.2	mg/l N	05/02/2023	1640 as
Nitrogen, Nitrite	EPA300.0		ND		0.2	mg/l N	05/02/2023	1640 as
Selenium	SM3113B		ND		0.005	mg/l	05/12/2023	bem
Sodium	SM3111B		50.2		1.0	mg/l	05/09/2023	as
Thallium	SM3113B		ND		0.001	mg/l	05/11/2023	bem
Aluminum	SM3113B		0.275		0.050	mg/l	05/30/2023	bem
Copper	SM3113 B		ND		0.002	mg/l	05/31/2023	bem
Iron	SM3111B		0.286		0.1	mg/l	05/31/2023	as
Manganese	SM3111B		ND		0.05	mg/l	05/31/2023	as
Silver	SM3113B		ND		0.01	mg/l	05/22/2023	bem
Zinc	SM3111 B		0.0547		0.01	mg/l	05/31/2023	bem

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

\* Accreditation

A- Waterlab Corporation, ORELAP 100039

The results relate only to the parameters tested or to the sample as received by the laboratory.

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Approved by: \_\_\_\_\_



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## ANALYTICAL SUMMARY REPORT

June 09, 2023

Waterlab Corp  
2603 12th St SE  
Salem, OR 97302-2154

Work Order: C23050297  
Project Name: Mill City WWTP

Energy Laboratories, Inc. Casper WY received the following 1 sample for Waterlab Corp on 5/8/2023 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C23050297-001	20230502-094 Mill City WWTP	05/02/23 8:30	05/08/23	Waste Water	Metals by ICP/ICPMS, Drinking Water Metals Preparation by EPA 200.2 Gross Alpha, Gross Beta, Total Radium 226 + Radium 228, Total Radium 226, Total Radium 228, Total

The analyses presented in this report were performed by Energy Laboratories, Inc., 2393 Salt Creek Hwy., Casper, WY 82601, unless otherwise noted. Any exceptions or problems with the analyses are noted in the report package. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

*Ashley L. Wilson*  
Project Manager

Digitally signed by  
Ashley L. Wilson  
Date: 2023.06.09 14:46:22 -06:00



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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

**CLIENT:** Waterlab Corp  
**Project:** Mill City WWTP  
**Work Order:** C23050297

**Report Date:** 06/09/23

## **CASE NARRATIVE**

ENERGY LABORATORIES, INC. - CASPER, WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Please verify ELI's certification coverage by visiting [www.energylab.com](http://www.energylab.com).

Tests associated with analyst identified as ELI-B were subcontracted to Energy Laboratories, 1120 S. 27th St., Billings, MT, EPA Number MT00005.



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## LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Waterlab Corp  
Project: Mill City WWTP  
Lab ID: C23050297-001  
Client Sample ID: 20230502-094 Mill City WWTP

Report Date: 06/09/23  
Collection Date: 05/02/23 08:30  
Date Received: 05/08/23  
Matrix: Waste Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
<b>RADIONUCLIDES - TOTAL</b>							
Uranium	ND	mg/L		0.0003	0.03	E200.8	05/17/23 04:23 / eli-b
Uranium, Activity	ND	pCi/L		0.2		E200.8	05/17/23 04:23 / eli-b
<b>RADIONUCLIDES, TOTAL</b>							
Gross Alpha	-5	pCi/L	U			E900.0	05/27/23 02:30 / haw
Gross Alpha precision (±)	1.7	pCi/L				E900.0	05/27/23 02:30 / haw
Gross Alpha MDC	3.1	pCi/L				E900.0	05/27/23 02:30 / haw
Gross Beta	14.8	pCi/L				E900.0	05/27/23 02:30 / haw
Gross Beta precision (±)	3.1	pCi/L				E900.0	05/27/23 02:30 / haw
Gross Beta MDC	3.9	pCi/L				E900.0	05/27/23 02:30 / haw
Radium 226	-0.05	pCi/L	U			E903.0	05/23/23 11:12 / kdk
Radium 226 precision (±)	0.2	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 226 MDC	0.3	pCi/L				E903.0	05/23/23 11:12 / kdk
Radium 228	2.5	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 precision (±)	1.1	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 228 MDC	1.6	pCi/L				RA-05	05/18/23 13:08 / trs
Radium 226 + Radium 228	2.6	pCi/L				A7500-RA	05/24/23 12:54 / dmf
Radium 226 + Radium 228 precision (±)	1.1	pCi/L				A7500-RA	05/24/23 12:54 / dmf
Radium 226 + Radium 228 MDC	1.6	pCi/L				A7500-RA	05/24/23 12:54 / dmf

**Report Definitions:**  
RL - Analyte Reporting Limit  
QCL - Quality Control Limit  
U - Not detected at Minimum Detectable Concentration (MDC)

MCL - Maximum Contaminant Level  
ND - Not detected at the Reporting Limit (RL)





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## QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Waterlab Corp

Work Order: C23050297

Report Date: 05/17/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Analytical Run: ICPMS207-B_230515A
Lab ID: QCS		Initial Calibration Verification Standard								05/17/23 02:09
Uranium		0.0476	mg/L	0.00030	95	90	110			
Lab ID: CCV		Continuing Calibration Verification Standard								05/17/23 03:40
Uranium		0.0476	mg/L	0.00030	95	90	110			
Method: E200.8										Batch: 178689
Lab ID: MB-178689	2	Method Blank								Run: ICPMS207-B_230515A 05/17/23 02:58
Uranium		0.00003	mg/L	0.00002						
Uranium, Activity		0.02	pCi/L	0.01						
Lab ID: LCS4-178689		Laboratory Control Sample								Run: ICPMS207-B_230515A 05/17/23 03:04
Uranium		0.0932	mg/L	0.00030	93	85	115			
Lab ID: B23050597-001AMS4		Sample Matrix Spike								Run: ICPMS207-B_230515A 05/17/23 03:58
Uranium		0.0960	mg/L	0.00030	95	70	130			
Lab ID: B23050597-001AMSD		Sample Matrix Spike Duplicate								Run: ICPMS207-B_230515A 05/17/23 04:04
Uranium		0.102	mg/L	0.00030	101	70	130	6.0	20	

### Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



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## QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Waterlab Corp

Work Order: C23050297

Report Date: 06/01/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
<b>Method: E900.0</b>										
Batch: GrAB-3184										
<b>Lab ID: Th230-GrAB-3184</b>	3	Laboratory Control Sample					Run: G542M-2_230523A			05/27/23 02:30
Gross Alpha		98	pCi/L		98	70	130			
Gross Alpha precision (±)		20	pCi/L							
Gross Alpha MDC		3.8	pCi/L							
<b>Lab ID: Sr90-GrAB-3184</b>	3	Laboratory Control Sample					Run: G542M-2_230523A			05/27/23 02:30
Gross Beta		550	pCi/L		115	70	130			
Gross Beta precision (±)		56	pCi/L							
Gross Beta MDC		3.6	pCi/L							
<b>Lab ID: MB-GrAB-3184</b>	6	Method Blank					Run: G542M-2_230523A			05/27/23 02:30
Gross Alpha		-5	pCi/L							U
Gross Alpha precision (±)		2	pCi/L							
Gross Alpha MDC		3	pCi/L							
Gross Beta		-4	pCi/L							U
Gross Beta precision (±)		2	pCi/L							
Gross Beta MDC		4	pCi/L							
<b>Lab ID: C23050241-001AMS</b>	3	Sample Matrix Spike					Run: G542M-2_230523A			05/27/23 02:30
Gross Alpha		350	pCi/L		87	70	130			
Gross Alpha precision (±)		72	pCi/L							
Gross Alpha MDC		16	pCi/L							
<b>Lab ID: C23050241-001AMSD</b>	3	Sample Matrix Spike Duplicate					Run: G542M-2_230523A			05/27/23 02:30
Gross Alpha		400	pCi/L		99	70	130	12	30	
Gross Alpha precision (±)		81	pCi/L							
Gross Alpha MDC		18	pCi/L							
- The RER result is 0.42.										
<b>Lab ID: C23050585-010AMS1</b>	3	Sample Matrix Spike					Run: G542M-2_230523A			05/31/23 08:46
Gross Beta		3800	pCi/L		118	70	130			
Gross Beta precision (±)		380	pCi/L							
Gross Beta MDC		19	pCi/L							
<b>Lab ID: C23050585-010AMSD</b>	3	Sample Matrix Spike Duplicate					Run: G542M-2_230523A			05/31/23 08:46
Gross Beta		3700	pCi/L		115	70	130	3.1	30	
Gross Beta precision (±)		370	pCi/L							
Gross Beta MDC		20	pCi/L							
- The RER result is 0.22.										

### Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

U - Not detected at Minimum Detectable Concentration (MDC)



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## QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Waterlab Corp

Work Order: C23050297

Report Date: 06/01/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0										Batch: RA226-10894
Lab ID: LCS-RA226-10894	3	Laboratory Control Sample					Run: TENNELEC-3_230512B			05/23/23 11:12
Radium 226		11	pCi/L		114	70	130			
Radium 226 precision ( $\pm$ )		2.3	pCi/L							
Radium 226 MDC		0.22	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank					Run: TENNELEC-3_230512B			05/23/23 11:12
Radium 226		0.1	pCi/L							U
Radium 226 precision ( $\pm$ )		0.2	pCi/L							
Radium 226 MDC		0.2	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate					Run: TENNELEC-3_230512B			05/23/23 11:12
Radium 226		1.9	pCi/L					5.6	30	
Radium 226 precision ( $\pm$ )		0.48	pCi/L							
Radium 226 MDC		0.23	pCi/L							
- The RER result is 0.15.										

### Qualifiers:

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## QA/QC Summary Report

Prepared by Casper, WY Branch

Client: Waterlab Corp

Work Order: C23050297

Report Date: 06/01/23

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RA-05										Batch: RA228-7094
Lab ID: LCS-228-RA226-10894	3	Laboratory Control Sample								
						Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		5.7	pCi/L		81	70	130			
Radium 228 precision (±)		1.4	pCi/L							
Radium 228 MDC		1.2	pCi/L							
Lab ID: MB-RA226-10894	3	Method Blank								
						Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		2	pCi/L							
Radium 228 precision (±)		0.8	pCi/L							
Radium 228 MDC		1	pCi/L							
Lab ID: C23050423-001FDUP	3	Sample Duplicate								
						Run: TENNELEC-3_230512A				05/18/23 13:08
Radium 228		2.2	pCi/L					11	30	
Radium 228 precision (±)		0.91	pCi/L							
Radium 228 MDC		1.3	pCi/L							
- The RER result is 0.19.										

### Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)



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## Work Order Receipt Checklist

Waterlab Corp

C23050297

Login completed by: Hannah R. Johnson

Date Received: 5/8/2023

Reviewed by: cjohnson

Received by: cch

Reviewed Date: 5/10/2023

Carrier name: UPS

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on all sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Not Applicable <input type="checkbox"/>
Container/Temp Blank temperature:	12.8°C No Ice		
Containers requiring zero headspace have no headspace or bubble that is <6mm (1/4").	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Applicable <input type="checkbox"/>

---

### Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as -dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

The reference date for Radon analysis is the sample collection date. The reference date for all other Radiochemical analyses is the analysis date. Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

---

### Contact and Corrective Action Comments:

The sample collection time indicated on the COC is 09:00, the collection time listed on the sample bottles is 08:30, Beth requested we use the collection time on the sample bottles-Chantel S. Johnson



# Chain of Custody & Analytical Request Record

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## Account Information (Billing Information)

Company Name: **Waterlab Corp**  
 Contact: **Beth Myers**  
 Phone: **503-363-0473**  
 Mailing Address: **2603 12th St SE**  
 City, State, Zip: **Salem, OR 97302**  
 Email: **beth@waterlabcorp.com**  
 Receive Invoice: ☐ Hard Copy ☒ Email  
 Purchase Order: ☐ Quote

## Report Information (if different than Account Information)

Company Name: **Waterlab Corp**  
 Contact: **Beth Myers**  
 Phone: **503-363-0473**  
 Mailing Address: **2603 12th St SE**  
 City, State, Zip: **Salem, OR 97302**  
 Email: **beth@waterlabcorp.com**  
 Receive Report: ☐ Hard Copy ☒ Email  
 Special Report/Formula: ☐ LEVEL IV ☐ NELAC ☐ EDD/EDT (excludes laboratory) ☐ Other

## Comments

Please do not return cooler!!!!!!

## Project Information

Project Name: **PWSID, Permit, etc. Mill City WWTP**  
 Sampler Name: **Waterlab Corp**  
 Sample Origin: **State Oregon**  
 EPA/State Compliance: ☐ Yes ☒ No  
 MINING CLIENTS, please indicate sample type:  
☐ Byproduct 11 (e2 material) ☐ Unprocessed ore (NOT ground or refined)\*

Matrix Codes:  
 A- Air  
 W- Water  
 S- Solids  
 V- Vegetation  
 B- Biosolids  
 O- Other  
 DW- Drinking Water

## Analysis Requested

Sample Identification (Name, Location, Interval, etc.)	Collection Date	Time	Matrix (See Codes Above)	Number of Containers	Gross Alpha	Radium 226/228	Uranium	Gross Beta	See Attached
1 20230502-094 Mill City WWTP	5/2/23	9:00 am	W	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2									
3									
4									
5									
6									
7									
8									
9									
10									

All turnaround times are standard unless marked as RUSH.  
 Energy Laboratories MUST be contacted prior to RUSH sample submittal for charges and scheduling - See Instructions Page

Signature: *[Signature]*  
 Date/Time: **5-8-23 9am**  
 Receipt Number (see check only)

Shipped By: **April Erickson**  
 Date/Time: **5/3/23 10:00**  
 Signature: *[Signature]*  
 Receipt Temp: **16.00**  
 Inlet: **Y** N  
 Custody Seals: **Y** N C B  
 Cooler (Die): **Y** N C B  
 Payment Type: **Check**  
 Amount: **\$**

In certain circumstances, samples submitted to Energy Laboratories, Inc. may be subcontracted to other certified laboratories in order to complete the analysis requested. This serves as notice of this possibility. All subcontracted data will be clearly notated on your analytical report.

## TEST REPORT

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

05/22/2023

CITMILC

PO#:

### Collection Information

Date: 05/02/2023  
Time: 0900  
By: Russ  
Lab #: 20230502-097  
Location: 360 Remine Rd. Mills City/ Influent

### Lab Receipt Information

05/02/2023  
1045  
SW

### Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Synthetic Organic Contaminants								
Synthetic Organics, Regulated								
1,2-Dibromo-3-chloropropane	EPA 504.1	B	ND		0.0000	mg/liter	05/04/2023	2017 TJW
Ethylene Dibromide	EPA 504.1	B	ND		0.0000	mg/liter	05/04/2023	2017 TJW
Chlordane	EPA 508	B	ND		0.0002	mg/liter	05/10/2023	0806 TJW
Endrin	EPA 508	B	ND		0.00001	mg/liter	05/10/2023	0806 TJW
BHC-Gamma Lindane	EPA 508	B	ND		0.00001	mg/liter	05/10/2023	0806 TJW

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

\* Accreditation

A- Waterlab Corporation, ORELAP 100039

The results relate only to the parameters tested or to the sample as received by the laboratory.

This report shall not be reproduced except in full, without the written approval of Waterlab Corporation.

B=Neilson Research Corporation, ORELAP ID#OR100016

Approved by: 



## TEST REPORT

LAB # : 20230502-097

(Cont)

CITMILC

Page: 2

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Heptachlor	EPA 508	B	ND		0.00001	mg/liter	05/10/2023	0806 TJW
Heptachlor Epoxide	EPA 508	B	ND		0.00001	mg/liter	05/10/2023	0806 TJW
Methoxychlor	EPA 508	B	ND		0.0000	mg/liter	05/10/2023	0806 TJW
Polychlorinated Biphenyls	EPA 508	B	ND		0.0002	mg/liter	05/10/2023	0806 TJW
Toxaphene	EPA 508	B	ND		0.0003	mg/liter	05/10/2023	0806 TJW
2,4,5-TP Silvex	EPA 515.3	B	ND		0.005	mg/liter	05/16/2023	0026 TJW
Dalapon	EPA 515.3	B	ND		0.005	mg/liter	05/16/2023	0026 TJW
Dinoseb	EPA 515.3	B	ND		0.001	mg/liter	05/16/2023	0026 TJW
Pentachlorophenol	EPA 515.3	B	ND		0.0005	mg/liter	05/16/2023	0026 TJW
Picloram	EPA 515.3	B	ND		0.005	mg/liter	05/16/2023	0026 TJW
Alachlor	EPA 525.2	B	ND		0.0002	mg/liter	05/18/2023	1628 TJW
Atrazine	EPA 525.2	B	ND		0.0003	mg/liter	05/18/2023	1628 TJW
Benzo(a)pyrene	EPA 525.2	B	ND		0.0001	mg/liter	05/18/2023	1628 TJW
Bis(2-ethylhexyl)phthalate	EPA 525.2	B	0.00901		0.002	mg/liter	05/18/2023	1628 TJW
Bis(2-ethylhexyl)adipate	EPA 525.2	B	ND		0.004	mg/liter	05/18/2023	1628 TJW
Hexachlorobenzene	EPA 525.2	B	ND		0.0003	mg/liter	05/18/2023	1628 TJW
Hexachlorocyclopentadiene	EPA 525.2	B	ND		0.005	mg/liter	05/18/2023	1628 TJW
Simazine	EPA 525.2	B	ND		0.0004	mg/liter	05/18/2023	1628 TJW
Carbofuran	EPA 531.2	B	ND		0.004	mg/liter	05/03/2023	1809 TJW
Vydate	EPA 531.2	B	ND		0.004	mg/liter	05/03/2023	1809 TJW
Endothall	EPA 548.1	B	ND		0.01	mg/liter	05/17/2023	1726 TJW
Diquat	EPA 549.2	B	ND		0.01	mg/liter	05/11/2023	1548 TJW
2,4-D	EPA 515.3	B	ND		0.002	mg/liter	05/16/2023	0026 TJW

ND- No Detection at @ MRL

SM- "Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL- "Method Reporting Limit"

\* Accreditation

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B=Neilson Research Corporation, ORELAP ID#OR100016

Approved by: \_\_\_\_\_

## **TEST REPORT**

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

LAB # : 20230502-097 (Cont) CITMILC Page: 3

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Glyphosate	EPA 547	B	ND		0.05	mg/liter	05/08/2023	1220 TJW

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

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MRL-"Method Reporting Limit"

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Approved by: \_\_\_\_\_



## TEST REPORT

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

05/22/2023

CITMILC

PO#:

**Collection Information**

Date: 05/02/2023  
Time: 0900  
By: Russ  
Lab #: 20230502-098  
Location: 360 Remine Rd. Mills City/ Influent

**Lab Receipt Information**

05/02/2023  
1045  
SW

**Case Narrative**

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Volatile Organics, Regulated								
1,1,1-Trichloroethane	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
1,1,2-Trichloroethane	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
1,1-Dichloroethylene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
1,2,4-Trichlorobenzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
1,2-Dichloroethane	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
1,2-Dichloropropane	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Benzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water &amp; Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

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Approved by: 

## TEST REPORT

LAB # : 20230502-098 (Cont) CITMILC Page: 2

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Carbon Tetrachloride	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
cis-1,2-Dichloroethylene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Dichloromethane	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Ethylbenzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Monochlorobenzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
o-Dichlorobenzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
p-Dichlorobenzene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Styrene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Tetrachloroethylene (PCE)	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Toluene	E524.2	B	0.0496		0.0005	mg/liter	05/05/2023	0024 TJW
trans-1,2-Dichloroethylene	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Trichloroethylene (TCE)	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Vinyl Chloride	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW
Xylenes, Total	E524.2	B	ND		0.0005	mg/liter	05/05/2023	0024 TJW

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water &amp; Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

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Approved by: \_\_\_\_\_



## TEST REPORT

2603 - 12th Street, SE  
Salem, OR 97302  
Voice: (503) 363-0473  
FAX: (503) 363-8900

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

10/24/2023

CITMILC

PO#:

### Collection Information

Date: 10/17/2023  
Time: 0855  
By: Russ  
Lab #: 20231017-008  
Location: Influent

### Lab Receipt Information

10/17/2023  
1001  
RD

### Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis		
							Date	Time	Tech
Fluoride	EPA300.0	A	ND		0.2	mg/l	10/17/2023	1752	AS

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

\* Accreditation

A- Waterlab Corporation, ORELAP 100039

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Approved by: \_\_\_\_\_



## TEST REPORT

TO: City of Mill City c/o City Recorder  
P. O. Box 256  
Mill City, OR 97360

10/24/2023

CITMILC

PO#:

### Collection Information

Date: 10/17/2023  
Time: 0855  
By: Russ  
Lab #: 20231017-009  
Location: Influent

### Lab Receipt Information

10/17/2023  
1001  
RD

### Case Narrative

The analyses were performed according to the guidelines in the WATERLAB Corp Quality Assurance Program. This report contains analytical results for the sample(s) as received by the laboratory.

Analyte	Method	Acc*	Results	Qual	MRL	Units	Analysis	
							Date Time	Tech
Fluoride	EPA300.0	A	ND		0.2	mg/l	10/17/2023 1820	as

ND- No Detection at @ MRL

SM-"Standard Methods for the Examination of Water & Wastewater", 19th ed

EPA- "Methods for Chemical Analysis for Water and Wastes", USEPA

MRL-"Method Reporting Limit"

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Approved by: \_\_\_\_\_





ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Thursday, May 23, 2024

Erik Hedberg  
GSI Water Solutions  
650 NE Holladay St, Ste 900  
Portland, OR 97232

RE: A4E0861 - Santiam - 00464.020

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4E0861, which was received by the laboratory on 5/2/2024 at 12:38:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>	
(See Cooler Receipt Form for details)	
Default Cooler	<u>2.4 degC</u>

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

*The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.*





ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW-050124	A4E0861-01	Water	05/01/24 09:10	05/02/24 12:38
SW-1-050124	A4E0861-02	Water	05/01/24 14:50	05/02/24 12:38
SW-2-050124	A4E0861-03	Water	05/01/24 15:40	05/02/24 12:38

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0435</b>			
Acetone	304	---	20.0	ug/L	1	05/13/24 11:33	EPA 8260D	
Acrylonitrile	ND	---	2.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Benzene	ND	---	0.200	ug/L	1	05/13/24 11:33	EPA 8260D	
Bromobenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Bromochloromethane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Bromodichloromethane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Bromoform	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Bromomethane	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	05/13/24 11:33	EPA 8260D	
n-Butylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
sec-Butylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
tert-Butylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Carbon disulfide	ND	---	10.0	ug/L	1	05/13/24 11:33	EPA 8260D	
Carbon tetrachloride	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Chlorobenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Chloroethane	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
<b>Chloroform</b>	<b>1.10</b>	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Chloromethane	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
2-Chlorotoluene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
4-Chlorotoluene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Dibromochloromethane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Dibromomethane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
<b>1,4-Dichlorobenzene</b>	<b>0.630</b>	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	

Apex Laboratories

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Philip Nerenberg, Lab Director

Page 3 of 82



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0435</b>			
1,2-Dichloropropane	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Ethylbenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
2-Hexanone	ND	---	10.0	ug/L	1	05/13/24 11:33	EPA 8260D	
Isopropylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
<b>4-Isopropyltoluene</b>	<b>1.01</b>	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Methylene chloride	ND	---	10.0	ug/L	1	05/13/24 11:33	EPA 8260D	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	05/13/24 11:33	EPA 8260D	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Naphthalene	ND	---	5.00	ug/L	1	05/13/24 11:33	EPA 8260D	
n-Propylbenzene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Styrene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
<b>Toluene</b>	<b>21.0</b>	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	05/13/24 11:33	EPA 8260D	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
Vinyl chloride	ND	---	0.200	ug/L	1	05/13/24 11:33	EPA 8260D	
m,p-Xylene	ND	---	1.00	ug/L	1	05/13/24 11:33	EPA 8260D	
o-Xylene	ND	---	0.500	ug/L	1	05/13/24 11:33	EPA 8260D	

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# ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

### Volatile Organic Compounds by EPA 8260D

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0435</b>		
Surrogate: 1,4-Difluorobenzene (Surr)		Recovery:	105 %	Limits:	80-120 %	1	05/13/24 11:33	EPA 8260D
Toluene-d8 (Surr)			108 %		80-120 %	1	05/13/24 11:33	EPA 8260D
4-Bromofluorobenzene (Surr)			96 %		80-120 %	1	05/13/24 11:33	EPA 8260D

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## ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0302</b>		<b>DCNT</b>
Acenaphthene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Acenaphthylene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Anthracene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Benz(a)anthracene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Benzo(a)pyrene	ND	---	1.25	ug/L	40	05/09/24 14:24	EPA 8270E	
Benzo(b)fluoranthene	ND	---	1.25	ug/L	40	05/09/24 14:24	EPA 8270E	
Benzo(k)fluoranthene	ND	---	1.25	ug/L	40	05/09/24 14:24	EPA 8270E	
Benzo(g,h,i)perylene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Chrysene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Dibenz(a,h)anthracene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Fluoranthene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Fluorene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Indeno(1,2,3-cd)pyrene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
1-Methylnaphthalene	ND	---	1.67	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Methylnaphthalene	ND	---	1.67	ug/L	40	05/09/24 14:24	EPA 8270E	
Naphthalene	ND	---	1.67	ug/L	40	05/09/24 14:24	EPA 8270E	
Phenanthrene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Pyrene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Carbazole	ND	---	1.25	ug/L	40	05/09/24 14:24	EPA 8270E	
Dibenzofuran	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Chlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Chloro-3-methylphenol	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4-Dichlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4-Dimethylphenol	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4-Dinitrophenol	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
4,6-Dinitro-2-methylphenol	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Methylphenol	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
<b>3+4-Methylphenol(s)</b>	<b>180</b>	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Nitrophenol	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Nitrophenol	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
Pentachlorophenol (PCP)	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
<b>Phenol</b>	<b>26.8</b>	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
2,3,4,6-Tetrachlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	

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## ANALYTICAL REPORT

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6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0302</b>		<b>DCNT</b>
2,3,5,6-Tetrachlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4,5-Trichlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4,6-Trichlorophenol	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
Bis(2-ethylhexyl)phthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Butyl benzyl phthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Diethylphthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Dimethylphthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Di-n-butylphthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Di-n-octyl phthalate	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
N-Nitrosodimethylamine	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
N-Nitroso-di-n-propylamine	ND	---	5.00	ug/L	40	05/09/24 14:24	EPA 8270E	R-02
N-Nitrosodiphenylamine	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Bis(2-Chloroethoxy) methane	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Bis(2-Chloroethyl) ether	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
2,2'-Oxybis(1-Chloropropane)	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Hexachlorobenzene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
Hexachlorobutadiene	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Hexachlorocyclopentadiene	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
Hexachloroethane	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Chloronaphthalene	ND	---	0.833	ug/L	40	05/09/24 14:24	EPA 8270E	
1,2,4-Trichlorobenzene	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Bromophenyl phenyl ether	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Chlorophenyl phenyl ether	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Aniline	ND	---	4.17	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Chloroaniline	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
2-Nitroaniline	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
3-Nitroaniline	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
4-Nitroaniline	ND	---	16.7	ug/L	40	05/09/24 14:24	EPA 8270E	
Nitrobenzene	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
2,4-Dinitrotoluene	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
2,6-Dinitrotoluene	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
<b>Benzoic acid</b>	<b>117</b>	---	104	ug/L	40	05/09/24 14:24	EPA 8270E	
Benzyl alcohol	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>		<b>Matrix: Water</b>			<b>Batch: 24E0302</b>		<b>DCNT</b>	
Isophorone	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Azobenzene (1,2-DPH)	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
Bis(2-Ethylhexyl) adipate	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
3,3'-Dichlorobenzidine	ND	---	41.7	ug/L	40	05/09/24 14:24	EPA 8270E	Q-52
1,2-Dinitrobenzene	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
1,3-Dinitrobenzene	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
1,4-Dinitrobenzene	ND	---	20.8	ug/L	40	05/09/24 14:24	EPA 8270E	
Pyridine	ND	---	8.33	ug/L	40	05/09/24 14:24	EPA 8270E	
1,2-Dichlorobenzene	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
1,3-Dichlorobenzene	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
1,4-Dichlorobenzene	ND	---	2.08	ug/L	40	05/09/24 14:24	EPA 8270E	
<i>Surrogate: Nitrobenzene-d5 (Surr)</i>		<i>Recovery:</i>	73 %	<i>Limits:</i>	44-120 %	40	05/09/24 14:24	EPA 8270E S-05
<i>2-Fluorobiphenyl (Surr)</i>			62 %		44-120 %	40	05/09/24 14:24	EPA 8270E S-05
<i>Phenol-d6 (Surr)</i>			29 %		10-133 %	40	05/09/24 14:24	EPA 8270E S-05
<i>p-Terphenyl-d14 (Surr)</i>			54 %		50-134 %	40	05/09/24 14:24	EPA 8270E S-05
<i>2-Fluorophenol (Surr)</i>			37 %		19-120 %	40	05/09/24 14:24	EPA 8270E S-05
<i>2,4,6-Tribromophenol (Surr)</i>			130 %		43-140 %	40	05/09/24 14:24	EPA 8270E S-05

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## ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062GSI Water Solutions650 NE Holladay St, Ste 900  
Portland, OR 97232Project: SantiamProject Number: **00464.020**

Project Manager: Erik Hedberg

Report ID:**A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01) Matrix: Water</b>								
Batch: 24E0554								
Aluminum	189	---	50.0	ug/L	1	05/16/24 17:51	EPA 6020B	
Antimony	ND	---	1.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Arsenic	1.02	---	1.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Barium	9.83	---	2.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Beryllium	ND	---	0.200	ug/L	1	05/16/24 17:51	EPA 6020B	
Cadmium	ND	---	0.200	ug/L	1	05/16/24 17:51	EPA 6020B	
Chromium	2.12	---	2.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Copper	13.1	---	2.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Lead	0.792	---	0.200	ug/L	1	05/16/24 17:51	EPA 6020B	
Manganese	28.7	---	1.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Mercury	ND	---	0.0800	ug/L	1	05/16/24 17:51	EPA 6020B	
Molybdenum	ND	---	1.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Nickel	2.19	---	2.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Potassium	16700	---	100	ug/L	1	05/16/24 17:51	EPA 6020B	
Selenium	ND	---	1.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Silver	ND	---	0.200	ug/L	1	05/16/24 17:51	EPA 6020B	
Sodium	40400	---	100	ug/L	1	05/16/24 17:51	EPA 6020B	
Thallium	ND	---	0.200	ug/L	1	05/16/24 17:51	EPA 6020B	
Boron	274	---	10.0	ug/L	1	05/17/24 17:34	EPA 6020B	
Lithium	ND	---	5.00	ug/L	1	05/17/24 17:34	EPA 6020B	R-04
Strontium	94.9	---	5.00	ug/L	1	05/17/24 17:34	EPA 6020B	B-02
Vanadium	4.09	---	2.00	ug/L	1	05/16/24 17:51	EPA 6020B	
Zinc	61.5	---	4.00	ug/L	1	05/16/24 17:51	EPA 6020B	
<b>WW-050124 (A4E0861-01RE1) Matrix: Water</b>								
Batch: 24E0554								
Magnesium	9140	---	1500	ug/L	10	05/17/24 16:28	EPA 6020B	B-02
<b>WW-050124 (A4E0861-01RE3) Matrix: Water</b>								
Batch: 24E0705								
Calcium	21500	---	600	ug/L	1	05/21/24 13:42	EPA 6020B	

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GSI Water Solutions

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

ANALYTICAL SAMPLE RESULTS

**Ammonia by Gas Diffusion and Colorimetric Detection**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01RE1)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0183</b>		
Ammonia as N	51.8	---	0.400	mg/L	20	05/06/24 13:40	SM 4500-NH3 G	

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## ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WW-050124 (A4E0861-01)		Matrix: Water						
Batch: 24E0116								
Bromide	ND	---	1.00	mg/L	1	05/02/24 22:12	EPA 300.0	
Chloride	37.1	---	1.00	mg/L	1	05/02/24 22:12	EPA 300.0	
Fluoride	ND	---	1.00	mg/L	1	05/02/24 22:12	EPA 300.0	
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	05/02/24 22:12	EPA 300.0	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	05/02/24 22:12	EPA 300.0	
Sulfate	10.9	---	1.00	mg/L	1	05/02/24 22:12	EPA 300.0	

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Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

ANALYTICAL SAMPLE RESULTS

Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WW-050124 (A4E0861-01)				Matrix: Water		Batch: 24E0227		
Total Cyanide	0.0235	---	0.00500	mg/L	1	05/07/24 15:25	D7511-12	

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Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

ANALYTICAL SAMPLE RESULTS

**Demand Parameters**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
SW-1-050124 (A4E0861-02)				Matrix: Water				
Batch: 24E0133								
Biochemical Oxygen Demand	ND	---	2.67	mg/L	1	05/08/24 12:45	SM 5210 B	
SW-2-050124 (A4E0861-03)				Matrix: Water				
Batch: 24E0133								
Biochemical Oxygen Demand	ND	---	2.67	mg/L	1	05/08/24 12:45	SM 5210 B	

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503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

## ANALYTICAL SAMPLE RESULTS

### Orthophosphate by Colorimetric Spectrophotometry

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>WW-050124 (A4E0861-01)</b>				<b>Matrix: Water</b>		<b>Batch: 24E0113</b>		
Orthophosphate Phosphorus	6.01	---	0.200	mg/L	10	05/02/24 19:02	SM 4500-P E	

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Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

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ANALYTICAL SAMPLE RESULTS

**Solid and Moisture Determinations**

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WW-050124 (A4E0861-01)				Matrix: Water				
Batch: 24E0214								
Total Dissolved Solids	307	---	5.00	mg/L	1	05/06/24 19:18	SM 2540 C	
SW-1-050124 (A4E0861-02)				Matrix: Water				
Batch: 24E0206								
Total Suspended Solids	ND	---	5.00	mg/L	1	05/06/24 14:15	SM 2540 D	TSS
Batch: 24E0214								
Total Dissolved Solids	48.0	---	5.00	mg/L	1	05/06/24 19:18	SM 2540 C	
SW-2-050124 (A4E0861-03)				Matrix: Water				
Batch: 24E0206								
Total Suspended Solids	ND	---	5.00	mg/L	1	05/06/24 14:15	SM 2540 D	TSS
Batch: 24E0214								
Total Dissolved Solids	49.0	---	5.00	mg/L	1	05/06/24 19:18	SM 2540 C	

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Philip Nerenberg, Lab Director

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Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## ANALYTICAL SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
WW-050124 (A4E0861-01)				Matrix: Water				
Batch: 24E0066								
pH	7.2	---		pH Units	1	05/02/24 16:44	SM 4500-H+ B	H-12
pH Temperature (deg C)	20.4	---		pH Units	1	05/02/24 16:44	SM 4500-H+ B	H-12
Batch: 24E0090								
Conductivity	788	---	2.50	umhos/cm @25degC	1	05/02/24 18:27	SM 2510 B	
Batch: 24E0292								
Total Alkalinity	296	---	20.0	mg CaCO3/L	1	05/08/24 12:54	SM 2320 B	
Bicarbonate Alkalinity	296	---	20.0	mg CaCO3/L	1	05/08/24 12:54	SM 2320 B	
Carbonate Alkalinity	ND	---	20.0	mg CaCO3/L	1	05/08/24 12:54	SM 2320 B	
Hydroxide Alkalinity	ND	---	20.0	mg CaCO3/L	1	05/08/24 12:54	SM 2320 B	
SW-1-050124 (A4E0861-02)				Matrix: Water				
Batch: 24E0066								
pH	7.5	---		pH Units	1	05/02/24 16:54	SM 4500-H+ B	H-12
pH Temperature (deg C)	23.2	---		pH Units	1	05/02/24 16:54	SM 4500-H+ B	H-12
SW-2-050124 (A4E0861-03)				Matrix: Water				
Batch: 24E0066								
pH	7.5	---		pH Units	1	05/02/24 16:58	SM 4500-H+ B	H-12
pH Temperature (deg C)	21.3	---		pH Units	1	05/02/24 16:58	SM 4500-H+ B	H-12

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**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Blank (24E0375-BLK1)			Prepared: 05/10/24 06:06		Analyzed: 05/10/24 12:14							
EPA 8260D												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Blank (24E0375-BLK1)						Prepared: 05/10/24 06:06 Analyzed: 05/10/24 12:14						
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr) Recovery: 106 % Limits: 80-120 % Dilution: 1x												

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## ANALYTICAL REPORT

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ORELAP ID: OR100062

**GSI Water Solutions**

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Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Blank (24E0375-BLK1)			Prepared: 05/10/24 06:06		Analyzed: 05/10/24 12:14							
Surr: Toluene-d8 (Surr)		Recovery: 102 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		101 %		80-120 %		"						
LCS (24E0375-BS1)			Prepared: 05/10/24 06:06		Analyzed: 05/10/24 11:05							
EPA 8260D												
Acetone	45.6	---	20.0	ug/L	1	40.0	---	114	80-120%	---	---	
Acrylonitrile	18.9	---	2.00	ug/L	1	20.0	---	94	80-120%	---	---	
Benzene	20.1	---	0.200	ug/L	1	20.0	---	100	80-120%	---	---	
Bromobenzene	18.4	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
Bromochloromethane	20.1	---	1.00	ug/L	1	20.0	---	101	80-120%	---	---	
Bromodichloromethane	20.1	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
Bromoform	22.1	---	1.00	ug/L	1	20.0	---	111	80-120%	---	---	
Bromomethane	16.9	---	5.00	ug/L	1	20.0	---	85	80-120%	---	---	
2-Butanone (MEK)	39.1	---	10.0	ug/L	1	40.0	---	98	80-120%	---	---	
n-Butylbenzene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
sec-Butylbenzene	19.5	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
tert-Butylbenzene	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Carbon disulfide	19.4	---	10.0	ug/L	1	20.0	---	97	80-120%	---	---	
Carbon tetrachloride	23.5	---	1.00	ug/L	1	20.0	---	118	80-120%	---	---	
Chlorobenzene	19.9	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Chloroethane	20.2	---	5.00	ug/L	1	20.0	---	101	80-120%	---	---	
Chloroform	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
Chloromethane	17.0	---	5.00	ug/L	1	20.0	---	85	80-120%	---	---	
2-Chlorotoluene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
4-Chlorotoluene	20.4	---	1.00	ug/L	1	20.0	---	102	80-120%	---	---	
Dibromochloromethane	22.0	---	1.00	ug/L	1	20.0	---	110	80-120%	---	---	
1,2-Dibromo-3-chloropropane	19.1	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Dibromomethane	19.5	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
1,2-Dichlorobenzene	21.1	---	0.500	ug/L	1	20.0	---	106	80-120%	---	---	
1,3-Dichlorobenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
1,4-Dichlorobenzene	18.8	---	0.500	ug/L	1	20.0	---	94	80-120%	---	---	
Dichlorodifluoromethane	19.4	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,1-Dichloroethane	18.8	---	0.400	ug/L	1	20.0	---	94	80-120%	---	---	

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Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
LCS (24E0375-BS1)						Prepared: 05/10/24 06:06 Analyzed: 05/10/24 11:05						
1,2-Dichloroethane (EDC)	19.6	---	0.400	ug/L	1	20.0	---	98	80-120%	---	---	
1,1-Dichloroethene	21.2	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,2-Dichloroethene	19.2	---	0.400	ug/L	1	20.0	---	96	80-120%	---	---	
trans-1,2-Dichloroethene	19.9	---	0.400	ug/L	1	20.0	---	99	80-120%	---	---	
1,2-Dichloropropane	18.4	---	0.500	ug/L	1	20.0	---	92	80-120%	---	---	
1,3-Dichloropropane	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
2,2-Dichloropropane	22.3	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
1,1-Dichloropropene	21.1	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
cis-1,3-Dichloropropene	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
trans-1,3-Dichloropropene	21.2	---	1.00	ug/L	1	20.0	---	106	80-120%	---	---	
Ethylbenzene	21.6	---	0.500	ug/L	1	20.0	---	108	80-120%	---	---	
Hexachlorobutadiene	21.0	---	5.00	ug/L	1	20.0	---	105	80-120%	---	---	
2-Hexanone	32.6	---	10.0	ug/L	1	40.0	---	82	80-120%	---	---	
Isopropylbenzene	19.3	---	1.00	ug/L	1	20.0	---	97	80-120%	---	---	
4-Isopropyltoluene	19.0	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
Methylene chloride	20.1	---	10.0	ug/L	1	20.0	---	100	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	35.4	---	10.0	ug/L	1	40.0	---	88	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Naphthalene	16.0	---	5.00	ug/L	1	20.0	---	80	80-120%	---	---	
n-Propylbenzene	20.4	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
Styrene	19.7	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,1,1,2-Tetrachloroethane	23.2	---	0.400	ug/L	1	20.0	---	116	80-120%	---	---	
1,1,2,2-Tetrachloroethane	20.0	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Tetrachloroethene (PCE)	22.4	---	0.400	ug/L	1	20.0	---	112	80-120%	---	---	
Toluene	19.3	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,2,3-Trichlorobenzene	19.8	---	2.00	ug/L	1	20.0	---	99	80-120%	---	---	
1,2,4-Trichlorobenzene	17.9	---	2.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1,1-Trichloroethane	20.6	---	0.400	ug/L	1	20.0	---	103	80-120%	---	---	
1,1,2-Trichloroethane	20.1	---	0.500	ug/L	1	20.0	---	100	80-120%	---	---	
Trichloroethene (TCE)	18.0	---	0.400	ug/L	1	20.0	---	90	80-120%	---	---	
Trichlorofluoromethane	21.3	---	2.00	ug/L	1	20.0	---	106	80-120%	---	---	
1,2,3-Trichloropropane	18.0	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,2,4-Trimethylbenzene	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
1,3,5-Trimethylbenzene	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24E0375 - EPA 5030C</b>						<b>Water</b>						
<b>LCS (24E0375-BS1)</b>						Prepared: 05/10/24 06:06 Analyzed: 05/10/24 11:05						
Vinyl chloride	16.6	---	0.200	ug/L	1	20.0	---	83	80-120%	---	---	
m,p-Xylene	41.0	---	1.00	ug/L	1	40.0	---	103	80-120%	---	---	
o-Xylene	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
<i>Surr: 1,4-Difluorobenzene (Surr)</i>		<i>Recovery: 98 %</i>		<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>		<i>97 %</i>		<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>		<i>93 %</i>		<i>80-120 %</i>		<i>"</i>						

**Duplicate (24E0375-DUP1)**

Prepared: 05/10/24 06:06 Analyzed: 05/10/24 19:01

**QC Source Sample: Non-SDG (A4E0920-11RE1)**

Acetone	ND	---	200	ug/L	10	---	ND	---	---	---	30%
Acrylonitrile	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%
Benzene	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%
n-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
sec-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
tert-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Carbon disulfide	ND	---	100	ug/L	10	---	ND	---	---	---	30%
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Duplicate (24E0375-DUP1)			Prepared: 05/10/24 06:06    Analyzed: 05/10/24 19:01									
QC Source Sample: Non-SDG (A4E0920-11RE1)												
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	202	---	4.00	ug/L	10	---	204	---	---	1	30%	
Toluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C							Water					
Duplicate (24E0375-DUP1)			Prepared: 05/10/24 06:06   Analyzed: 05/10/24 19:01									
QC Source Sample: Non-SDG (A4E0920-11RE1)												
Trichloroethene (TCE)	8.40	---	4.00	ug/L	10	---	9.50	---	---	12	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 109 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		101 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		101 %		80-120 %		"						

**Matrix Spike (24E0375-MS1)**

Prepared: 05/10/24 06:06 Analyzed: 05/10/24 12:58

**QC Source Sample: Non-SDG (A4E1095-02)****EPA 8260D**

Acetone	231	---	100	ug/L	5	200	ND	115	39-160%	---	---
Acrylonitrile	95.6	---	10.0	ug/L	5	100	ND	96	63-135%	---	---
Benzene	107	---	1.00	ug/L	5	100	ND	107	79-120%	---	---
Bromobenzene	101	---	2.50	ug/L	5	100	ND	101	80-120%	---	---
Bromochloromethane	102	---	5.00	ug/L	5	100	ND	102	78-123%	---	---
Bromodichloromethane	107	---	5.00	ug/L	5	100	ND	107	79-125%	---	---
Bromoform	116	---	5.00	ug/L	5	100	ND	116	66-130%	---	---
Bromomethane	90.8	---	25.0	ug/L	5	100	ND	91	53-141%	---	---
2-Butanone (MEK)	197	---	50.0	ug/L	5	200	ND	98	56-143%	---	---
n-Butylbenzene	108	---	5.00	ug/L	5	100	ND	108	75-128%	---	---
sec-Butylbenzene	111	---	5.00	ug/L	5	100	ND	111	77-126%	---	---
tert-Butylbenzene	105	---	5.00	ug/L	5	100	ND	105	78-124%	---	---
Carbon disulfide	108	---	50.0	ug/L	5	100	ND	108	64-133%	---	---
Carbon tetrachloride	133	---	5.00	ug/L	5	100	ND	133	72-136%	---	---
Chlorobenzene	106	---	2.50	ug/L	5	100	ND	106	80-120%	---	---
Chloroethane	109	---	25.0	ug/L	5	100	ND	109	60-138%	---	---
Chloroform	103	---	5.00	ug/L	5	100	3.10	100	79-124%	---	---
Chloromethane	91.4	---	25.0	ug/L	5	100	ND	91	50-139%	---	---

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Philip Nerenberg, Lab Director



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ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Matrix Spike (24E0375-MS1)			Prepared: 05/10/24 06:06    Analyzed: 05/10/24 12:58									
QC Source Sample: Non-SDG (A4E1095-02)												
2-Chlorotoluene	112	---	5.00	ug/L	5	100	ND	112	79-122%	---	---	
4-Chlorotoluene	113	---	5.00	ug/L	5	100	ND	113	78-122%	---	---	
Dibromochloromethane	114	---	5.00	ug/L	5	100	ND	114	74-126%	---	---	
1,2-Dibromo-3-chloropropane	98.8	---	25.0	ug/L	5	100	ND	99	62-128%	---	---	
1,2-Dibromoethane (EDB)	113	---	2.50	ug/L	5	100	ND	113	77-121%	---	---	
Dibromomethane	102	---	5.00	ug/L	5	100	ND	102	79-123%	---	---	
1,2-Dichlorobenzene	112	---	2.50	ug/L	5	100	ND	112	80-120%	---	---	
1,3-Dichlorobenzene	116	---	2.50	ug/L	5	100	ND	116	80-120%	---	---	
1,4-Dichlorobenzene	100	---	2.50	ug/L	5	100	ND	100	79-120%	---	---	
Dichlorodifluoromethane	106	---	5.00	ug/L	5	100	ND	106	32-152%	---	---	
1,1-Dichloroethane	97.9	---	2.00	ug/L	5	100	ND	98	77-125%	---	---	
1,2-Dichloroethane (EDC)	99.3	---	2.00	ug/L	5	100	ND	99	73-128%	---	---	
1,1-Dichloroethene	118	---	2.00	ug/L	5	100	ND	118	71-131%	---	---	
cis-1,2-Dichloroethene	102	---	2.00	ug/L	5	100	ND	102	78-123%	---	---	
trans-1,2-Dichloroethene	105	---	2.00	ug/L	5	100	ND	105	75-124%	---	---	
1,2-Dichloropropane	98.2	---	2.50	ug/L	5	100	2.50	96	78-122%	---	---	
1,3-Dichloropropane	101	---	5.00	ug/L	5	100	ND	101	80-120%	---	---	
2,2-Dichloropropane	128	---	5.00	ug/L	5	100	ND	128	60-139%	---	---	
1,1-Dichloropropene	117	---	5.00	ug/L	5	100	ND	117	79-125%	---	---	
cis-1,3-Dichloropropene	102	---	5.00	ug/L	5	100	ND	102	75-124%	---	---	
trans-1,3-Dichloropropene	112	---	5.00	ug/L	5	100	ND	112	73-127%	---	---	
Ethylbenzene	119	---	2.50	ug/L	5	100	ND	119	79-121%	---	---	
Hexachlorobutadiene	119	---	25.0	ug/L	5	100	ND	119	66-134%	---	---	
2-Hexanone	171	---	50.0	ug/L	5	200	ND	86	57-139%	---	---	
Isopropylbenzene	109	---	5.00	ug/L	5	100	ND	109	72-131%	---	---	
4-Isopropyltoluene	107	---	5.00	ug/L	5	100	ND	107	77-127%	---	---	
Methylene chloride	104	---	50.0	ug/L	5	100	ND	104	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	183	---	50.0	ug/L	5	200	ND	91	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	98.4	---	5.00	ug/L	5	100	ND	98	71-124%	---	---	
Naphthalene	86.9	---	25.0	ug/L	5	100	ND	87	61-128%	---	---	
n-Propylbenzene	114	---	2.50	ug/L	5	100	ND	114	76-126%	---	---	
Styrene	106	---	5.00	ug/L	5	100	ND	106	78-123%	---	---	
1,1,1,2-Tetrachloroethane	123	---	2.00	ug/L	5	100	ND	123	78-124%	---	---	

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Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0375 - EPA 5030C						Water						
Matrix Spike (24E0375-MS1)			Prepared: 05/10/24 06:06		Analyzed: 05/10/24 12:58							
QC Source Sample: Non-SDG (A4E1095-02)												
1,1,2,2-Tetrachloroethane	103	---	2.50	ug/L	5	100	ND	103	71-121%	---	---	
Tetrachloroethene (PCE)	122	---	2.00	ug/L	5	100	ND	122	74-129%	---	---	
Toluene	105	---	5.00	ug/L	5	100	ND	105	80-121%	---	---	
1,2,3-Trichlorobenzene	105	---	10.0	ug/L	5	100	ND	105	69-129%	---	---	
1,2,4-Trichlorobenzene	98.0	---	10.0	ug/L	5	100	ND	98	69-130%	---	---	
1,1,1-Trichloroethane	112	---	2.00	ug/L	5	100	ND	112	74-131%	---	---	
1,1,2-Trichloroethane	104	---	2.50	ug/L	5	100	ND	104	80-120%	---	---	
Trichloroethene (TCE)	97.3	---	2.00	ug/L	5	100	ND	97	79-123%	---	---	
Trichlorofluoromethane	116	---	10.0	ug/L	5	100	ND	116	65-141%	---	---	
1,2,3-Trichloropropane	103	---	5.00	ug/L	5	100	12.1	91	73-122%	---	---	
1,2,4-Trimethylbenzene	104	---	5.00	ug/L	5	100	ND	104	76-124%	---	---	
1,3,5-Trimethylbenzene	105	---	5.00	ug/L	5	100	ND	105	75-124%	---	---	
Vinyl chloride	93.4	---	1.00	ug/L	5	100	ND	93	58-137%	---	---	
m,p-Xylene	222	---	5.00	ug/L	5	200	ND	111	80-121%	---	---	
o-Xylene	100	---	2.50	ug/L	5	100	ND	100	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery:		95 %		Limits:		80-120 %		Dilution: 1x		
Toluene-d8 (Surr)				96 %				80-120 %		"		
4-Bromofluorobenzene (Surr)				94 %				80-120 %		"		

Apex Laboratories

Philip Nerenberg, Lab Director

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ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Blank (24E0435-BLK1)			Prepared: 05/13/24 09:13		Analyzed: 05/13/24 10:27							
EPA 8260D												
Acetone	ND	---	20.0	ug/L	1	---	---	---	---	---	---	
Acrylonitrile	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Bromobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Bromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromodichloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromoform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Bromomethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Butanone (MEK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
n-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
sec-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
tert-Butylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Carbon disulfide	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Carbon tetrachloride	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chloroethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Chloroform	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Chloromethane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Chlorotoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Dibromochloromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dibromomethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	---	0.400	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900  
Portland, OR 97232Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Blank (24E0435-BLK1)						Prepared: 05/13/24 09:13 Analyzed: 05/13/24 10:27						
1,2-Dichloropropane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
2,2-Dichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Ethylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
2-Hexanone	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Isopropylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
4-Isopropyltoluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Methylene chloride	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	---	10.0	ug/L	1	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
n-Propylbenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Styrene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Toluene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Trichlorofluoromethane	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Vinyl chloride	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
m,p-Xylene	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
o-Xylene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: 1,4-Difluorobenzene (Surr) Recovery: 104 % Limits: 80-120 % Dilution: 1x												

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Blank (24E0435-BLK1)			Prepared: 05/13/24 09:13		Analyzed: 05/13/24 10:27							
Surr: Toluene-d8 (Surr)		Recovery: 103 %		Limits: 80-120 %		Dilution: 1x						
4-Bromofluorobenzene (Surr)		104 %		80-120 %		"						
LCS (24E0435-BS1)			Prepared: 05/13/24 09:13		Analyzed: 05/13/24 09:43							
EPA 8260D												
Acetone	42.2	---	20.0	ug/L	1	40.0	---	105	80-120%	---	---	
Acrylonitrile	17.4	---	2.00	ug/L	1	20.0	---	87	80-120%	---	---	
Benzene	19.1	---	0.200	ug/L	1	20.0	---	95	80-120%	---	---	
Bromobenzene	18.5	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Bromochloromethane	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Bromodichloromethane	19.2	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
Bromoform	21.7	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
Bromomethane	17.7	---	5.00	ug/L	1	20.0	---	89	80-120%	---	---	
2-Butanone (MEK)	33.7	---	10.0	ug/L	1	40.0	---	84	80-120%	---	---	
n-Butylbenzene	18.3	---	1.00	ug/L	1	20.0	---	91	80-120%	---	---	
sec-Butylbenzene	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
tert-Butylbenzene	17.8	---	1.00	ug/L	1	20.0	---	89	80-120%	---	---	
Carbon disulfide	19.1	---	10.0	ug/L	1	20.0	---	96	80-120%	---	---	
Carbon tetrachloride	22.5	---	1.00	ug/L	1	20.0	---	112	80-120%	---	---	
Chlorobenzene	19.0	---	0.500	ug/L	1	20.0	---	95	80-120%	---	---	
Chloroethane	19.3	---	5.00	ug/L	1	20.0	---	96	80-120%	---	---	
Chloroform	18.8	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Chloromethane	16.4	---	5.00	ug/L	1	20.0	---	82	80-120%	---	---	
2-Chlorotoluene	20.0	---	1.00	ug/L	1	20.0	---	100	80-120%	---	---	
4-Chlorotoluene	19.8	---	1.00	ug/L	1	20.0	---	99	80-120%	---	---	
Dibromochloromethane	21.8	---	1.00	ug/L	1	20.0	---	109	80-120%	---	---	
1,2-Dibromo-3-chloropropane	17.5	---	5.00	ug/L	1	20.0	---	88	80-120%	---	---	
1,2-Dibromoethane (EDB)	21.0	---	0.500	ug/L	1	20.0	---	105	80-120%	---	---	
Dibromomethane	19.1	---	1.00	ug/L	1	20.0	---	95	80-120%	---	---	
1,2-Dichlorobenzene	20.5	---	0.500	ug/L	1	20.0	---	102	80-120%	---	---	
1,3-Dichlorobenzene	21.4	---	0.500	ug/L	1	20.0	---	107	80-120%	---	---	
1,4-Dichlorobenzene	18.6	---	0.500	ug/L	1	20.0	---	93	80-120%	---	---	
Dichlorodifluoromethane	18.1	---	1.00	ug/L	1	20.0	---	90	80-120%	---	---	
1,1-Dichloroethane	18.2	---	0.400	ug/L	1	20.0	---	91	80-120%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
LCS (24E0435-BS1)						Prepared: 05/13/24 09:13 Analyzed: 05/13/24 09:43						
1,2-Dichloroethane (EDC)	18.5	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,1-Dichloroethene	20.3	---	0.400	ug/L	1	20.0	---	102	80-120%	---	---	
cis-1,2-Dichloroethene	18.3	---	0.400	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,2-Dichloroethene	18.6	---	0.400	ug/L	1	20.0	---	93	80-120%	---	---	
1,2-Dichloropropane	16.9	---	0.500	ug/L	1	20.0	---	84	80-120%	---	---	
1,3-Dichloropropane	19.1	---	1.00	ug/L	1	20.0	---	96	80-120%	---	---	
2,2-Dichloropropane	22.9	---	1.00	ug/L	1	20.0	---	115	80-120%	---	---	
1,1-Dichloropropene	19.7	---	1.00	ug/L	1	20.0	---	98	80-120%	---	---	
cis-1,3-Dichloropropene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
trans-1,3-Dichloropropene	20.8	---	1.00	ug/L	1	20.0	---	104	80-120%	---	---	
Ethylbenzene	20.8	---	0.500	ug/L	1	20.0	---	104	80-120%	---	---	
Hexachlorobutadiene	20.8	---	5.00	ug/L	1	20.0	---	104	80-120%	---	---	
2-Hexanone	30.4	---	10.0	ug/L	1	40.0	---	76	80-120%	---	---	Q-55
Isopropylbenzene	18.6	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
4-Isopropyltoluene	18.5	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
Methylene chloride	19.8	---	10.0	ug/L	1	20.0	---	99	80-120%	---	---	
4-Methyl-2-pentanone (MiBK)	32.2	---	10.0	ug/L	1	40.0	---	80	80-120%	---	---	
Methyl tert-butyl ether (MTBE)	18.7	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
Naphthalene	15.5	---	5.00	ug/L	1	20.0	---	77	80-120%	---	---	Q-55
n-Propylbenzene	19.8	---	0.500	ug/L	1	20.0	---	99	80-120%	---	---	
Styrene	18.9	---	1.00	ug/L	1	20.0	---	94	80-120%	---	---	
1,1,1,2-Tetrachloroethane	22.9	---	0.400	ug/L	1	20.0	---	114	80-120%	---	---	
1,1,2,2-Tetrachloroethane	19.2	---	0.500	ug/L	1	20.0	---	96	80-120%	---	---	
Tetrachloroethene (PCE)	21.2	---	0.400	ug/L	1	20.0	---	106	80-120%	---	---	
Toluene	18.7	---	1.00	ug/L	1	20.0	---	93	80-120%	---	---	
1,2,3-Trichlorobenzene	19.3	---	2.00	ug/L	1	20.0	---	97	80-120%	---	---	
1,2,4-Trichlorobenzene	17.7	---	2.00	ug/L	1	20.0	---	88	80-120%	---	---	
1,1,1-Trichloroethane	20.0	---	0.400	ug/L	1	20.0	---	100	80-120%	---	---	
1,1,2-Trichloroethane	19.5	---	0.500	ug/L	1	20.0	---	97	80-120%	---	---	
Trichloroethene (TCE)	17.2	---	0.400	ug/L	1	20.0	---	86	80-120%	---	---	
Trichlorofluoromethane	20.8	---	2.00	ug/L	1	20.0	---	104	80-120%	---	---	
1,2,3-Trichloropropane	16.9	---	1.00	ug/L	1	20.0	---	84	80-120%	---	---	
1,2,4-Trimethylbenzene	18.4	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	
1,3,5-Trimethylbenzene	18.5	---	1.00	ug/L	1	20.0	---	92	80-120%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24E0435 - EPA 5030C</b>						<b>Water</b>						
<b>LCS (24E0435-BS1)</b>						Prepared: 05/13/24 09:13 Analyzed: 05/13/24 09:43						
Vinyl chloride	16.6	---	0.200	ug/L	1	20.0	---	83	80-120%	---	---	
m,p-Xylene	39.2	---	1.00	ug/L	1	40.0	---	98	80-120%	---	---	
o-Xylene	17.5	---	0.500	ug/L	1	20.0	---	88	80-120%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 97 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		97 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		95 %		80-120 %		"						

**Duplicate (24E0435-DUP1)**

Prepared: 05/13/24 10:13 Analyzed: 05/13/24 18:07

**QC Source Sample: Non-SDG (A4E0889-03RE1)**

Acetone	ND	---	200	ug/L	10	---	ND	---	---	---	30%
Acrylonitrile	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%
Benzene	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%
Bromobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Bromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromodichloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromoform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Bromomethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
2-Butanone (MEK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%
n-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
sec-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
tert-Butylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Carbon disulfide	ND	---	100	ug/L	10	---	ND	---	---	---	30%
Carbon tetrachloride	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Chlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Chloroethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
Chloroform	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Chloromethane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
2-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
4-Chlorotoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
Dibromochloromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dibromo-3-chloropropane	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dibromoethane (EDB)	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%
Dibromomethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%
1,2-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%

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Philip Nerenberg, Lab Director

Page 30 of 82



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Duplicate (24E0435-DUP1)			Prepared: 05/13/24 10:13    Analyzed: 05/13/24 18:07									
QC Source Sample: Non-SDG (A4E0889-03RE1)												
1,3-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	11.9	---	4.00	ug/L	10	---	10.9	---	---	9	30%	
trans-1,2-Dichloroethene	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
2,2-Dichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Ethylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
2-Hexanone	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Isopropylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
4-Isopropyltoluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Methylene chloride	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	---	100	ug/L	10	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Naphthalene	ND	---	50.0	ug/L	10	---	ND	---	---	---	30%	
n-Propylbenzene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Styrene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	10.9	---	4.00	ug/L	10	---	9.80	---	---	11	30%	
Toluene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	---	4.00	ug/L	10	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C							Water					
Duplicate (24E0435-DUP1)			Prepared: 05/13/24 10:13   Analyzed: 05/13/24 18:07									
QC Source Sample: Non-SDG (A4E0889-03RE1)												
Trichloroethene (TCE)	274	---	4.00	ug/L	10	---	243	---	---	12	30%	
Trichlorofluoromethane	ND	---	20.0	ug/L	10	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
Vinyl chloride	ND	---	2.00	ug/L	10	---	ND	---	---	---	30%	
m,p-Xylene	ND	---	10.0	ug/L	10	---	ND	---	---	---	30%	
o-Xylene	ND	---	5.00	ug/L	10	---	ND	---	---	---	30%	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 118 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		102 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		99 %		80-120 %		"						

**Matrix Spike (24E0435-MS1)**

Prepared: 05/13/24 10:13 Analyzed: 05/13/24 11:54

**QC Source Sample: Non-SDG (A4E1139-01)**

<b>EPA 8260D</b>												
Acetone	50.7	---	20.0	ug/L	1	40.0	ND	127	39-160%	---	---	
Acrylonitrile	19.0	---	2.00	ug/L	1	20.0	ND	95	63-135%	---	---	
Benzene	21.3	---	0.200	ug/L	1	20.0	ND	106	79-120%	---	---	
Bromobenzene	20.0	---	0.500	ug/L	1	20.0	ND	100	80-120%	---	---	
Bromochloromethane	20.9	---	1.00	ug/L	1	20.0	ND	104	78-123%	---	---	
Bromodichloromethane	21.9	---	1.00	ug/L	1	20.0	ND	110	79-125%	---	---	
Bromoform	25.1	---	1.00	ug/L	1	20.0	ND	126	66-130%	---	---	
Bromomethane	15.0	---	5.00	ug/L	1	20.0	ND	75	53-141%	---	---	
2-Butanone (MEK)	39.5	---	10.0	ug/L	1	40.0	ND	99	56-143%	---	---	
n-Butylbenzene	20.5	---	1.00	ug/L	1	20.0	ND	103	75-128%	---	---	
sec-Butylbenzene	21.1	---	1.00	ug/L	1	20.0	ND	106	77-126%	---	---	
tert-Butylbenzene	19.8	---	1.00	ug/L	1	20.0	ND	99	78-124%	---	---	
Carbon disulfide	23.0	---	10.0	ug/L	1	20.0	ND	115	64-133%	---	---	
Carbon tetrachloride	28.4	---	1.00	ug/L	1	20.0	ND	142	72-136%	---	---	Q-01
Chlorobenzene	21.2	---	0.500	ug/L	1	20.0	ND	106	80-120%	---	---	
Chloroethane	21.7	---	5.00	ug/L	1	20.0	ND	109	60-138%	---	---	
Chloroform	20.7	---	1.00	ug/L	1	20.0	ND	104	79-124%	---	---	
Chloromethane	17.0	---	5.00	ug/L	1	20.0	ND	85	50-139%	---	---	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Matrix Spike (24E0435-MS1)			Prepared: 05/13/24 10:13		Analyzed: 05/13/24 11:54							
QC Source Sample: Non-SDG (A4E1139-01)												
2-Chlorotoluene	21.6	---	1.00	ug/L	1	20.0	ND	108	79-122%	---	---	
4-Chlorotoluene	21.6	---	1.00	ug/L	1	20.0	ND	108	78-122%	---	---	
Dibromochloromethane	24.4	---	1.00	ug/L	1	20.0	ND	122	74-126%	---	---	
1,2-Dibromo-3-chloropropane	19.5	---	5.00	ug/L	1	20.0	ND	98	62-128%	---	---	
1,2-Dibromoethane (EDB)	22.4	---	0.500	ug/L	1	20.0	ND	112	77-121%	---	---	
Dibromomethane	20.8	---	1.00	ug/L	1	20.0	ND	104	79-123%	---	---	
1,2-Dichlorobenzene	22.4	---	0.500	ug/L	1	20.0	ND	112	80-120%	---	---	
1,3-Dichlorobenzene	23.0	---	0.500	ug/L	1	20.0	ND	115	80-120%	---	---	
1,4-Dichlorobenzene	20.0	---	0.500	ug/L	1	20.0	ND	100	79-120%	---	---	
Dichlorodifluoromethane	20.4	---	1.00	ug/L	1	20.0	ND	102	32-152%	---	---	
1,1-Dichloroethane	19.8	---	0.400	ug/L	1	20.0	ND	99	77-125%	---	---	
1,2-Dichloroethane (EDC)	20.3	---	0.400	ug/L	1	20.0	ND	101	73-128%	---	---	
1,1-Dichloroethene	23.5	---	0.400	ug/L	1	20.0	ND	118	71-131%	---	---	
cis-1,2-Dichloroethene	20.3	---	0.400	ug/L	1	20.0	ND	102	78-123%	---	---	
trans-1,2-Dichloroethene	21.4	---	0.400	ug/L	1	20.0	ND	107	75-124%	---	---	
1,2-Dichloropropane	19.2	---	0.500	ug/L	1	20.0	ND	96	78-122%	---	---	
1,3-Dichloropropane	20.0	---	1.00	ug/L	1	20.0	ND	100	80-120%	---	---	
2,2-Dichloropropane	26.4	---	1.00	ug/L	1	20.0	ND	132	60-139%	---	---	
1,1-Dichloropropene	23.3	---	1.00	ug/L	1	20.0	ND	116	79-125%	---	---	
cis-1,3-Dichloropropene	16.6	---	1.00	ug/L	1	20.0	ND	83	75-124%	---	---	
trans-1,3-Dichloropropene	22.4	---	1.00	ug/L	1	20.0	ND	112	73-127%	---	---	
Ethylbenzene	23.4	---	0.500	ug/L	1	20.0	ND	117	79-121%	---	---	
Hexachlorobutadiene	23.8	---	5.00	ug/L	1	20.0	ND	119	66-134%	---	---	
2-Hexanone	33.8	---	10.0	ug/L	1	40.0	ND	84	57-139%	---	---	Q-54a
Isopropylbenzene	21.3	---	1.00	ug/L	1	20.0	ND	107	72-131%	---	---	
4-Isopropyltoluene	20.7	---	1.00	ug/L	1	20.0	ND	104	77-127%	---	---	
Methylene chloride	21.1	---	10.0	ug/L	1	20.0	ND	106	74-124%	---	---	
4-Methyl-2-pentanone (MiBK)	36.2	---	10.0	ug/L	1	40.0	ND	90	67-130%	---	---	
Methyl tert-butyl ether (MTBE)	20.4	---	1.00	ug/L	1	20.0	ND	102	71-124%	---	---	
Naphthalene	17.0	---	5.00	ug/L	1	20.0	ND	85	61-128%	---	---	Q-54
n-Propylbenzene	22.1	---	0.500	ug/L	1	20.0	ND	111	76-126%	---	---	
Styrene	21.2	---	1.00	ug/L	1	20.0	ND	106	78-123%	---	---	
1,1,1,2-Tetrachloroethane	25.6	---	0.400	ug/L	1	20.0	ND	128	78-124%	---	---	Q-01

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Volatile Organic Compounds by EPA 8260D

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0435 - EPA 5030C						Water						
Matrix Spike (24E0435-MS1)			Prepared: 05/13/24 10:13    Analyzed: 05/13/24 11:54									
QC Source Sample: Non-SDG (A4E1139-01)												
1,1,2,2-Tetrachloroethane	20.2	---	0.500	ug/L	1	20.0	ND	101	71-121%	---	---	
Tetrachloroethene (PCE)	24.6	---	0.400	ug/L	1	20.0	ND	123	74-129%	---	---	
Toluene	20.6	---	1.00	ug/L	1	20.0	ND	103	80-121%	---	---	
1,2,3-Trichlorobenzene	20.7	---	2.00	ug/L	1	20.0	ND	103	69-129%	---	---	
1,2,4-Trichlorobenzene	19.1	---	2.00	ug/L	1	20.0	ND	96	69-130%	---	---	
1,1,1-Trichloroethane	22.3	---	0.400	ug/L	1	20.0	ND	111	74-131%	---	---	
1,1,2-Trichloroethane	20.6	---	0.500	ug/L	1	20.0	ND	103	80-120%	---	---	
Trichloroethene (TCE)	19.8	---	0.400	ug/L	1	20.0	ND	99	79-123%	---	---	
Trichlorofluoromethane	23.7	---	2.00	ug/L	1	20.0	ND	119	65-141%	---	---	
1,2,3-Trichloropropane	18.7	---	1.00	ug/L	1	20.0	ND	94	73-122%	---	---	
1,2,4-Trimethylbenzene	20.2	---	1.00	ug/L	1	20.0	ND	101	76-124%	---	---	
1,3,5-Trimethylbenzene	20.4	---	1.00	ug/L	1	20.0	ND	102	75-124%	---	---	
Vinyl chloride	18.2	---	0.200	ug/L	1	20.0	ND	91	58-137%	---	---	
m,p-Xylene	44.4	---	1.00	ug/L	1	40.0	ND	111	80-121%	---	---	
o-Xylene	19.7	---	0.500	ug/L	1	20.0	ND	99	78-122%	---	---	
Surr: 1,4-Difluorobenzene (Surr)		Recovery: 98 %		Limits: 80-120 %		Dilution: 1x						
Toluene-d8 (Surr)		94 %		80-120 %		"						
4-Bromofluorobenzene (Surr)		93 %		80-120 %		"						

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ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0175-BLK1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 14:17							
EPA 8270E												
Acenaphthene	0.0306	---	0.0200	ug/L	1	---	---	---	---	---	---	B, Q-30
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	Q-30
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---		
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---		
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	B-02, Q-30
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	Q-30
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	Q-30
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---		
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---		
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	Q-30
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---		
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	Q-30
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---		
2-Chlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---		
4-Chloro-3-methylphenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-30
2,4-Dichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---		
2,4-Dimethylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---		
2,4-Dinitrophenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	Q-30
4,6-Dinitro-2-methylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---		
2-Methylphenol	ND	---	0.0500	ug/L	1	---	---	---	---	---		
3+4-Methylphenol(s)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
2-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---		
4-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---		
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-30
Phenol	ND	---	0.400	ug/L	1	---	---	---	---	---		
2,3,4,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---		

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Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0175-BLK1)						Prepared: 05/06/24 06:20 Analyzed: 05/06/24 14:17						
2,3,5,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
N-Nitrosodiphenylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
2,2'-Oxybis(1-Chloropropane)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Hexachlorobenzene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Hexachlorocyclopentadiene	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
2-Chloronaphthalene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	Q-30
1,2,4-Trichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
4-Bromophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Aniline	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	Q-30
Benzoic acid	ND	---	2.50	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

Page 36 of 82





## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0175-BLK1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 14:17							
Azobenzene (1,2-DPH)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Bis(2-Ethylhexyl) adipate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	---	1.00	ug/L	1	---	---	---	---	---	---	Q-52
1,2-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,3-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
1,4-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-30
Surr: Nitrobenzene-d5 (Surr)			Recovery:	65 %	Limits:	44-120 %	Dilution:		1x	Q-41		
2-Fluorobiphenyl (Surr)				59 %		44-120 %			"			
Phenol-d6 (Surr)				29 %		10-133 %			"	Q-41		
p-Terphenyl-d14 (Surr)				89 %		50-134 %			"			
2-Fluorophenol (Surr)				35 %		19-120 %			"			
2,4,6-Tribromophenol (Surr)				68 %		43-140 %			"			

## LCS (24E0175-BS1)

Prepared: 05/06/24 06:20 Analyzed: 05/06/24 14:54

<b>EPA 8270E</b>												
Acenaphthene	1.63	---	0.0800	ug/L	4	4.00	---	41	47-122%	---	---	Q-30, B
Acenaphthylene	1.84	---	0.0800	ug/L	4	4.00	---	46	41-130%	---	---	
Anthracene	2.71	---	0.0800	ug/L	4	4.00	---	68	57-123%	---	---	
Benz(a)anthracene	3.10	---	0.0800	ug/L	4	4.00	---	78	58-125%	---	---	
Benzo(a)pyrene	3.37	---	0.120	ug/L	4	4.00	---	84	54-128%	---	---	
Benzo(b)fluoranthene	3.24	---	0.120	ug/L	4	4.00	---	81	53-131%	---	---	
Benzo(k)fluoranthene	3.26	---	0.120	ug/L	4	4.00	---	82	57-129%	---	---	
Benzo(g,h,i)perylene	3.14	---	0.0800	ug/L	4	4.00	---	78	50-134%	---	---	
Chrysene	3.22	---	0.0800	ug/L	4	4.00	---	80	59-123%	---	---	
Dibenz(a,h)anthracene	3.10	---	0.0800	ug/L	4	4.00	---	77	51-134%	---	---	
Fluoranthene	3.15	---	0.0800	ug/L	4	4.00	---	79	57-128%	---	---	
Fluorene	2.04	---	0.0800	ug/L	4	4.00	---	51	52-124%	---	---	Q-30
Indeno(1,2,3-cd)pyrene	3.01	---	0.0800	ug/L	4	4.00	---	75	52-134%	---	---	
1-Methylnaphthalene	1.30	---	0.160	ug/L	4	4.00	---	33	41-120%	---	---	B-02, Q-30
2-Methylnaphthalene	1.22	---	0.160	ug/L	4	4.00	---	30	40-121%	---	---	Q-30

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)							Water					
LCS (24E0175-BS1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 14:54							
Naphthalene	1.05	---	0.160	ug/L	4	4.00	---	26	40-121%	---	---	Q-30, B-02
Phenanthrene	2.67	---	0.0800	ug/L	4	4.00	---	67	59-120%	---	---	
Pyrene	3.09	---	0.0800	ug/L	4	4.00	---	77	57-126%	---	---	
Carbazole	3.24	---	0.120	ug/L	4	4.00	---	81	60-122%	---	---	
Dibenzofuran	1.86	---	0.0800	ug/L	4	4.00	---	47	53-120%	---	---	Q-30
2-Chlorophenol	1.76	---	0.400	ug/L	4	4.00	---	44	38-120%	---	---	
4-Chloro-3-methylphenol	2.48	---	0.800	ug/L	4	4.00	---	62	52-120%	---	---	
2,4-Dichlorophenol	2.36	---	0.400	ug/L	4	4.00	---	59	47-121%	---	---	Q-41
2,4-Dimethylphenol	1.98	---	1.00	ug/L	4	4.00	---	50	31-124%	---	---	
2,4-Dinitrophenol	1.65	---	1.00	ug/L	4	4.00	---	41	23-143%	---	---	
4,6-Dinitro-2-methylphenol	2.44	---	2.00	ug/L	4	4.00	---	61	44-137%	---	---	
2-Methylphenol	1.84	---	0.200	ug/L	4	4.00	---	46	30-120%	---	---	Q-41
3+4-Methylphenol(s)	1.99	---	0.200	ug/L	4	4.00	---	50	29-120%	---	---	Q-41
2-Nitrophenol	2.44	---	0.800	ug/L	4	4.00	---	61	47-123%	---	---	
4-Nitrophenol	0.983	---	0.800	ug/L	4	4.00	---	25	10-120%	---	---	
Pentachlorophenol (PCP)	2.24	---	0.800	ug/L	4	4.00	---	56	35-138%	---	---	
Phenol	0.884	---	0.800	ug/L	4	4.00	---	22	10-120%	---	---	Q-41
2,3,4,6-Tetrachlorophenol	2.74	---	0.400	ug/L	4	4.00	---	68	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	2.63	---	0.400	ug/L	4	4.00	---	66	50-121%	---	---	
2,4,5-Trichlorophenol	2.43	---	0.400	ug/L	4	4.00	---	61	53-123%	---	---	
2,4,6-Trichlorophenol	2.08	---	0.400	ug/L	4	4.00	---	52	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.30	---	1.60	ug/L	4	4.00	---	82	55-135%	---	---	
Butyl benzyl phthalate	3.26	---	1.60	ug/L	4	4.00	---	82	53-134%	---	---	
Diethylphthalate	2.64	---	1.60	ug/L	4	4.00	---	66	56-125%	---	---	
Dimethylphthalate	2.30	---	1.60	ug/L	4	4.00	---	58	45-127%	---	---	
Di-n-butylphthalate	3.18	---	1.60	ug/L	4	4.00	---	80	59-127%	---	---	
Di-n-octyl phthalate	3.11	---	1.60	ug/L	4	4.00	---	78	51-140%	---	---	
N-Nitrosodimethylamine	0.804	---	0.200	ug/L	4	4.00	---	20	19-120%	---	---	
N-Nitroso-di-n-propylamine	1.88	---	0.200	ug/L	4	4.00	---	47	49-120%	---	---	Q-30
N-Nitrosodiphenylamine	2.77	---	0.200	ug/L	4	4.00	---	69	51-123%	---	---	
Bis(2-Chloroethoxy) methane	2.16	---	0.200	ug/L	4	4.00	---	54	48-120%	---	---	
Bis(2-Chloroethyl) ether	1.48	---	0.200	ug/L	4	4.00	---	37	43-120%	---	---	Q-30
2,2'-Oxybis(1-Chloropropane)	1.47	---	0.200	ug/L	4	4.00	---	37	41-120%	---	---	Q-30
Hexachlorobenzene	2.47	---	0.0800	ug/L	4	4.00	---	62	53-125%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
LCS (24E0175-BS1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 14:54							
Hexachlorobutadiene	0.307	---	0.200	ug/L	4	4.00	---	8	22-124%	---	---	Q-30
Hexachlorocyclopentadiene	0.419	---	0.400	ug/L	4	4.00	---	10	10-127%	---	---	
Hexachloroethane	0.308	---	0.200	ug/L	4	4.00	---	8	21-120%	---	---	Q-30
2-Chloronaphthalene	1.43	---	0.0800	ug/L	4	4.00	---	36	40-120%	---	---	Q-30
1,2,4-Trichlorobenzene	0.646	---	0.200	ug/L	4	4.00	---	16	29-120%	---	---	Q-30
4-Bromophenyl phenyl ether	2.33	---	0.200	ug/L	4	4.00	---	58	55-124%	---	---	
4-Chlorophenyl phenyl ether	1.91	---	0.200	ug/L	4	4.00	---	48	53-121%	---	---	Q-30
Aniline	1.68	---	0.400	ug/L	4	4.00	---	42	10-120%	---	---	
4-Chloroaniline	2.51	---	0.200	ug/L	4	4.00	---	63	33-120%	---	---	
2-Nitroaniline	2.34	---	1.60	ug/L	4	4.00	---	59	55-127%	---	---	
3-Nitroaniline	2.51	---	1.60	ug/L	4	4.00	---	63	41-128%	---	---	
4-Nitroaniline	3.13	---	1.60	ug/L	4	4.00	---	78	25-120%	---	---	
Nitrobenzene	1.81	---	0.800	ug/L	4	4.00	---	45	45-121%	---	---	Q-41
2,4-Dinitrotoluene	2.85	---	0.800	ug/L	4	4.00	---	71	57-128%	---	---	
2,6-Dinitrotoluene	2.26	---	0.800	ug/L	4	4.00	---	56	57-124%	---	---	Q-30
Benzoic acid	1.28	---	0.400	ug/L	4	8.00	---	16	10-120%	---	---	Q-31
Benzyl alcohol	1.83	---	0.800	ug/L	4	4.00	---	46	31-120%	---	---	Q-41
Isophorone	1.95	---	0.200	ug/L	4	4.00	---	49	42-124%	---	---	
Azobenzene (1,2-DPH)	2.23	---	0.200	ug/L	4	4.00	---	56	61-120%	---	---	Q-30
Bis(2-Ethylhexyl) adipate	3.14	---	2.00	ug/L	4	4.00	---	78	63-121%	---	---	
3,3'-Dichlorobenzidine	13.9	---	4.00	ug/L	4	8.00	---	174	27-129%	---	---	Q-29, Q-52
1,2-Dinitrobenzene	2.50	---	2.00	ug/L	4	4.00	---	62	59-120%	---	---	
1,3-Dinitrobenzene	2.41	---	2.00	ug/L	4	4.00	---	60	49-128%	---	---	
1,4-Dinitrobenzene	2.22	---	2.00	ug/L	4	4.00	---	55	54-120%	---	---	
Pyridine	0.658	---	0.400	ug/L	4	4.00	---	16	10-120%	---	---	Q-31
1,2-Dichlorobenzene	0.513	---	0.200	ug/L	4	4.00	---	13	32-120%	---	---	Q-30
1,3-Dichlorobenzene	0.435	---	0.200	ug/L	4	4.00	---	11	28-120%	---	---	Q-30
1,4-Dichlorobenzene	0.480	---	0.200	ug/L	4	4.00	---	12	29-120%	---	---	Q-30
Surr: Nitrobenzene-d5 (Surr)		Recovery: 48 %		Limits: 44-120 %		Dilution: 4x		Q-41				
2-Fluorobiphenyl (Surr)		39 %		44-120 %		"		S-06				
Phenol-d6 (Surr)		20 %		10-133 %		"		Q-41				
p-Terphenyl-d14 (Surr)		80 %		50-134 %		"						
2-Fluorophenol (Surr)		23 %		19-120 %		"						
2,4,6-Tribromophenol (Surr)		74 %		43-140 %		"						



## ANALYTICAL REPORT

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
Matrix Spike (24E0175-MS1)						Prepared: 05/06/24 06:20    Analyzed: 05/06/24 16:10						
QC Source Sample: Non-SDG (A4E0805-06)												
EPA 8270E												
Acenaphthene	152	---	0.385	ug/L	20	3.85	155	-65	47-122%	---	---	Q-03, B
Acenaphthylene	5.99	---	2.31	ug/L	20	3.85	ND	90	41-130%	---	---	
Anthracene	21.7	---	0.385	ug/L	20	3.85	18.4	85	57-123%	---	---	
Benz(a)anthracene	9.88	---	0.385	ug/L	20	3.85	6.49	88	58-125%	---	---	
Benzo(a)pyrene	6.27	---	0.577	ug/L	20	3.85	2.35	102	54-128%	---	---	
Benzo(b)fluoranthene	6.77	---	0.577	ug/L	20	3.85	3.29	91	53-131%	---	---	
Benzo(k)fluoranthene	5.21	---	0.577	ug/L	20	3.85	1.24	103	57-129%	---	---	
Benzo(g,h,i)perylene	4.02	---	0.385	ug/L	20	3.85	0.504	92	50-134%	---	---	
Chrysene	10.1	---	0.385	ug/L	20	3.85	6.62	92	59-123%	---	---	
Dibenz(a,h)anthracene	3.61	---	0.385	ug/L	20	3.85	ND	94	51-134%	---	---	
Fluoranthene	50.4	---	0.385	ug/L	20	3.85	48.5	50	57-128%	---	---	Q-03
Fluorene	83.7	---	0.385	ug/L	20	3.85	82.8	24	52-124%	---	---	Q-03
Indeno(1,2,3-cd)pyrene	4.06	---	0.385	ug/L	20	3.85	0.674	88	52-134%	---	---	
1-Methylnaphthalene	95.1	---	0.769	ug/L	20	3.85	110	-399	41-120%	---	---	Q-03, B-02
2-Methylnaphthalene	7.08	---	0.769	ug/L	20	3.85	20.4	-347	40-121%	---	---	Q-03
Naphthalene	3.74	---	0.962	ug/L	20	3.85	ND	97	40-121%	---	---	B-02
Phenanthrene	116	---	0.385	ug/L	20	3.85	123	-169	59-120%	---	---	Q-03
Pyrene	40.2	---	0.385	ug/L	20	3.85	37.8	60	57-126%	---	---	
Carbazole	4.54	---	0.962	ug/L	20	3.85	ND	118	60-122%	---	---	
Dibenzofuran	58.7	---	0.385	ug/L	20	3.85	59.6	-25	53-120%	---	---	Q-03
2-Chlorophenol	2.81	---	1.92	ug/L	20	3.85	ND	73	38-120%	---	---	
4-Chloro-3-methylphenol	6.43	---	3.85	ug/L	20	3.85	ND	167	52-120%	---	---	Q-11
2,4-Dichlorophenol	3.45	---	1.92	ug/L	20	3.85	ND	50	47-121%	---	---	Q-41
2,4-Dimethylphenol	ND	---	9.62	ug/L	20	3.85	ND	146	31-124%	---	---	Q-01
2,4-Dinitrophenol	ND	---	9.62	ug/L	20	3.85	ND	163	23-143%	---	---	Q-11
4,6-Dinitro-2-methylphenol	ND	---	9.62	ug/L	20	3.85	ND		44-137%	---	---	Q-11
2-Methylphenol	3.62	---	0.962	ug/L	20	3.85	ND	68	30-120%	---	---	Q-41
3+4-Methylphenol(s)	4.42	---	1.73	ug/L	20	3.85	ND	69	29-120%	---	---	Q-41
2-Nitrophenol	5.16	---	3.85	ug/L	20	3.85	ND	83	47-123%	---	---	
4-Nitrophenol	4.35	---	3.85	ug/L	20	3.85	ND	-8	10-120%	---	---	Q-11
Pentachlorophenol (PCP)	18.1	---	3.85	ug/L	20	3.85	12.8	137	35-138%	---	---	

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Page 40 of 82



## ANALYTICAL REPORT

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**GSI Water Solutions**

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Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water						
Matrix Spike (24E0175-MS1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 16:10							
QC Source Sample: Non-SDG (A4E0805-06)												
Phenol	ND	---	7.69	ug/L	20	3.85	ND		10-120%	---	---	Q-41, Q-11
2,3,4,6-Tetrachlorophenol	4.78	---	1.92	ug/L	20	3.85	ND	124	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	4.74	---	1.92	ug/L	20	3.85	ND	123	50-121%	---	---	Q-01
2,4,5-Trichlorophenol	4.23	---	1.92	ug/L	20	3.85	ND	110	53-123%	---	---	
2,4,6-Trichlorophenol	4.06	---	1.92	ug/L	20	3.85	ND	106	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	13.9	---	7.69	ug/L	20	3.85	10.2	95	55-135%	---	---	
Butyl benzyl phthalate	ND	---	7.69	ug/L	20	3.85	ND		53-134%	---	---	Q-11
Diethylphthalate	ND	---	7.69	ug/L	20	3.85	ND		56-125%	---	---	Q-11
Dimethylphthalate	ND	---	7.69	ug/L	20	3.85	ND	101	45-127%	---	---	
Di-n-butylphthalate	ND	---	7.69	ug/L	20	3.85	ND	100	59-127%	---	---	
Di-n-octyl phthalate	ND	---	7.69	ug/L	20	3.85	ND	104	51-140%	---	---	
N-Nitrosodimethylamine	0.974	---	0.962	ug/L	20	3.85	ND	25	19-120%	---	---	
N-Nitroso-di-n-propylamine	4.25	---	0.962	ug/L	20	3.85	ND	111	49-120%	---	---	
N-Nitrosodiphenylamine	13.0	---	9.04	ug/L	20	3.85	ND	73	51-123%	---	---	
Bis(2-Chloroethoxy) methane	5.86	---	2.12	ug/L	20	3.85	ND	93	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.64	---	0.962	ug/L	20	3.85	ND	69	43-120%	---	---	
2,2'-Oxybis(1-Chloropropane)	2.59	---	0.962	ug/L	20	3.85	ND	67	41-120%	---	---	
Hexachlorobenzene	3.97	---	0.385	ug/L	20	3.85	ND	103	53-125%	---	---	
Hexachlorobutadiene	2.39	---	0.962	ug/L	20	3.85	ND	62	22-124%	---	---	
Hexachlorocyclopentadiene	4.19	---	1.92	ug/L	20	3.85	ND	109	10-127%	---	---	
Hexachloroethane	1.67	---	0.962	ug/L	20	3.85	ND	43	21-120%	---	---	
2-Chloronaphthalene	4.30	---	0.769	ug/L	20	3.85	ND	112	40-120%	---	---	
1,2,4-Trichlorobenzene	2.55	---	0.962	ug/L	20	3.85	ND	66	29-120%	---	---	
4-Bromophenyl phenyl ether	3.86	---	0.962	ug/L	20	3.85	ND	100	55-124%	---	---	
4-Chlorophenyl phenyl ether	3.69	---	0.962	ug/L	20	3.85	ND	96	53-121%	---	---	
Aniline	2.32	---	1.92	ug/L	20	3.85	ND	60	10-120%	---	---	
4-Chloroaniline	3.83	---	0.962	ug/L	20	3.85	ND	73	33-120%	---	---	
2-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		55-127%	---	---	Q-11
3-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		41-128%	---	---	Q-11
4-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		25-120%	---	---	Q-11
Nitrobenzene	4.93	---	3.85	ug/L	20	3.85	ND	72	45-121%	---	---	Q-41
2,4-Dinitrotoluene	6.15	---	3.85	ug/L	20	3.85	ND	160	57-128%	---	---	Q-11
2,6-Dinitrotoluene	6.02	---	3.85	ug/L	20	3.85	ND	156	57-124%	---	---	Q-11

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes	
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)						Water							
Matrix Spike (24E0175-MS1)			Prepared: 05/06/24 06:20    Analyzed: 05/06/24 16:10										
QC Source Sample: Non-SDG (A4E0805-06)													
Benzoic acid	ND	---	48.1	ug/L	20	7.69	ND	-11	10-120%	---	---	Q-11, Q-31	
Benzyl alcohol	ND	---	3.85	ug/L	20	3.85	ND	66	31-120%	---	---	Q-41	
Isophorone	4.14	---	0.962	ug/L	20	3.85	ND	81	42-124%	---	---		
Azobenzene (1,2-DPH)	4.00	---	0.962	ug/L	20	3.85	ND	78	61-120%	---	---		
Bis(2-Ethylhexyl) adipate	ND	---	9.62	ug/L	20	3.85	ND		63-121%	---	---	Q-11	
3,3'-Dichlorobenzidine	ND	---	19.2	ug/L	20	7.69	ND		27-129%	---	---	Q-11, Q-52	
1,2-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND		59-120%	---	---	Q-11	
1,3-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND		49-128%	---	---	Q-11	
1,4-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND	-12	54-120%	---	---	Q-11	
Pyridine	ND	---	3.85	ug/L	20	3.85	ND		10-120%	---	---	Q-01, Q-31	
1,2-Dichlorobenzene	1.81	---	0.962	ug/L	20	3.85	ND	47	32-120%	---	---		
1,3-Dichlorobenzene	1.67	---	0.962	ug/L	20	3.85	ND	43	28-120%	---	---		
1,4-Dichlorobenzene	1.78	---	0.962	ug/L	20	3.85	ND	46	29-120%	---	---		
Surr: Nitrobenzene-d5 (Surr)		Recovery:		74 %		Limits:		44-120 %		Dilution:		20x	Q-41
2-Fluorobiphenyl (Surr)				86 %				44-120 %				"	
Phenol-d6 (Surr)				23 %				10-133 %				"	Q-41
p-Terphenyl-d14 (Surr)				84 %				50-134 %				"	
2-Fluorophenol (Surr)				29 %				19-120 %				"	
2,4,6-Tribromophenol (Surr)				115 %				43-140 %				"	

**Matrix Spike Dup (24E0175-MSD1)**

Prepared: 05/06/24 06:20 Analyzed: 05/06/24 16:46

**QC Source Sample: Non-SDG (A4E0805-06)**

Acenaphthene	156	---	0.385	ug/L	20	3.85	155	31	47-122%	2	30%	Q-03, B
Acenaphthylene	5.81	---	2.31	ug/L	20	3.85	ND	85	41-130%	3	30%	
Anthracene	21.2	---	0.385	ug/L	20	3.85	18.4	73	57-123%	2	30%	
Benz(a)anthracene	9.54	---	0.385	ug/L	20	3.85	6.49	79	58-125%	4	30%	
Benzo(a)pyrene	5.89	---	0.577	ug/L	20	3.85	2.35	92	54-128%	6	30%	
Benzo(b)fluoranthene	6.33	---	0.577	ug/L	20	3.85	3.29	79	53-131%	7	30%	
Benzo(k)fluoranthene	4.78	---	0.577	ug/L	20	3.85	1.24	92	57-129%	9	30%	
Benzo(g,h,i)perylene	3.75	---	0.385	ug/L	20	3.85	0.504	84	50-134%	7	30%	
Chrysene	9.58	---	0.385	ug/L	20	3.85	6.62	77	59-123%	6	30%	
Dibenz(a,h)anthracene	3.47	---	0.385	ug/L	20	3.85	ND	90	51-134%	4	30%	
Fluoranthene	48.5	---	0.385	ug/L	20	3.85	48.5	-1	57-128%	4	30%	Q-03

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)							Water					
Matrix Spike Dup (24E0175-MSD1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 16:46							
QC Source Sample: Non-SDG (A4E0805-06)												
Fluorene	83.2	---	0.385	ug/L	20	3.85	82.8	10	52-124%	0.6	30%	Q-03
Indeno(1,2,3-cd)pyrene	3.78	---	0.385	ug/L	20	3.85	0.674	81	52-134%	7	30%	
1-Methylnaphthalene	114	---	0.769	ug/L	20	3.85	110	80	41-120%	18	30%	B-02
2-Methylnaphthalene	8.36	---	0.769	ug/L	20	3.85	20.4	-314	40-121%	17	30%	Q-03
Naphthalene	3.59	---	0.962	ug/L	20	3.85	ND	93	40-121%	4	30%	B-02
Phenanthrene	112	---	0.385	ug/L	20	3.85	123	-274	59-120%	4	30%	Q-03
Pyrene	38.6	---	0.385	ug/L	20	3.85	37.8	21	57-126%	4	30%	Q-03
Carbazole	4.98	---	0.962	ug/L	20	3.85	ND	130	60-122%	9	30%	Q-02
Dibenzofuran	61.5	---	0.385	ug/L	20	3.85	59.6	49	53-120%	5	30%	Q-03
2-Chlorophenol	2.75	---	1.92	ug/L	20	3.85	ND	71	38-120%	2	30%	
4-Chloro-3-methylphenol	6.71	---	3.85	ug/L	20	3.85	ND	175	52-120%	4	30%	Q-11
2,4-Dichlorophenol	3.16	---	1.92	ug/L	20	3.85	ND	82	47-121%	9	30%	Q-41
2,4-Dimethylphenol	ND	---	9.62	ug/L	20	3.85	ND	148	31-124%	2	30%	Q-01
2,4-Dinitrophenol	ND	---	9.62	ug/L	20	3.85	ND	159	23-143%	2	30%	Q-11
4,6-Dinitro-2-methylphenol	ND	---	9.62	ug/L	20	3.85	ND		44-137%		30%	Q-11
2-Methylphenol	3.58	---	0.962	ug/L	20	3.85	ND	67	30-120%	1	30%	Q-41
3+4-Methylphenol(s)	4.42	---	4.23	ug/L	20	3.85	ND	115	29-120%	0.07	30%	Q-41
2-Nitrophenol	6.85	---	3.85	ug/L	20	3.85	ND	127	47-123%	28	30%	Q-11
4-Nitrophenol	4.16	---	3.85	ug/L	20	3.85	ND	-13	10-120%	200	30%	Q-11
Pentachlorophenol (PCP)	17.6	---	3.85	ug/L	20	3.85	12.8	124	35-138%	3	30%	
Phenol	ND	---	7.69	ug/L	20	3.85	ND		10-120%		30%	Q-11, Q-41
2,3,4,6-Tetrachlorophenol	4.58	---	1.92	ug/L	20	3.85	ND	119	50-128%	4	30%	
2,3,5,6-Tetrachlorophenol	4.63	---	1.92	ug/L	20	3.85	ND	120	50-121%	2	30%	
2,4,5-Trichlorophenol	4.16	---	1.92	ug/L	20	3.85	ND	108	53-123%	2	30%	
2,4,6-Trichlorophenol	3.99	---	1.92	ug/L	20	3.85	ND	104	50-125%	2	30%	
Bis(2-ethylhexyl)phthalate	13.1	---	7.69	ug/L	20	3.85	10.2	75	55-135%	6	30%	
Butyl benzyl phthalate	ND	---	7.69	ug/L	20	3.85	ND		53-134%		30%	Q-11
Diethylphthalate	ND	---	7.69	ug/L	20	3.85	ND		56-125%		30%	Q-11
Dimethylphthalate	ND	---	7.69	ug/L	20	3.85	ND		45-127%		30%	Q-11
Di-n-butylphthalate	ND	---	7.69	ug/L	20	3.85	ND		59-127%		30%	Q-11
Di-n-octyl phthalate	ND	---	7.69	ug/L	20	3.85	ND		51-140%		30%	Q-11
N-Nitrosodimethylamine	ND	---	0.962	ug/L	20	3.85	ND	25	19-120%	1	30%	
N-Nitroso-di-n-propylamine	4.28	---	0.962	ug/L	20	3.85	ND	111	49-120%	0.6	30%	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)							Water					
Matrix Spike Dup (24E0175-MSD1)			Prepared: 05/06/24 06:20		Analyzed: 05/06/24 16:46							
QC Source Sample: Non-SDG (A4E0805-06)												
N-Nitrosodiphenylamine	19.2	---	9.04	ug/L	20	3.85	ND	233	51-123%	38	30%	Q-02
Bis(2-Chloroethoxy) methane	5.97	---	0.769	ug/L	20	3.85	ND	96	48-120%	2	30%	
Bis(2-Chloroethyl) ether	2.52	---	0.962	ug/L	20	3.85	ND	65	43-120%	5	30%	
2,2'-Oxybis(1-Chloropropane)	2.48	---	0.962	ug/L	20	3.85	ND	65	41-120%	4	30%	
Hexachlorobenzene	3.69	---	0.385	ug/L	20	3.85	ND	96	53-125%	7	30%	
Hexachlorobutadiene	1.92	---	0.962	ug/L	20	3.85	ND	50	22-124%	22	30%	
Hexachlorocyclopentadiene	3.41	---	1.92	ug/L	20	3.85	ND	89	10-127%	21	30%	
Hexachloroethane	1.60	---	0.962	ug/L	20	3.85	ND	42	21-120%	4	30%	
2-Chloronaphthalene	3.94	---	0.769	ug/L	20	3.85	ND	103	40-120%	9	30%	
1,2,4-Trichlorobenzene	2.19	---	0.962	ug/L	20	3.85	ND	57	29-120%	15	30%	
4-Bromophenyl phenyl ether	3.84	---	0.962	ug/L	20	3.85	ND	100	55-124%	0.6	30%	
4-Chlorophenyl phenyl ether	3.45	---	0.962	ug/L	20	3.85	ND	90	53-121%	7	30%	
Aniline	2.14	---	1.92	ug/L	20	3.85	ND	56	10-120%	8	30%	
4-Chloroaniline	3.41	---	0.962	ug/L	20	3.85	ND	62	33-120%	12	30%	
2-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		55-127%		30%	Q-11
3-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		41-128%		30%	Q-11
4-Nitroaniline	ND	---	7.69	ug/L	20	3.85	ND		25-120%		30%	Q-11
Nitrobenzene	5.18	---	3.85	ug/L	20	3.85	ND	79	45-121%	5	30%	Q-41
2,4-Dinitrotoluene	6.16	---	3.85	ug/L	20	3.85	ND	160	57-128%	0.2	30%	Q-11
2,6-Dinitrotoluene	5.92	---	3.85	ug/L	20	3.85	ND	154	57-124%	2	30%	Q-11
Benzoic acid	ND	---	48.1	ug/L	20	7.69	ND	7	10-120%	200	30%	Q-11, Q-31
Benzyl alcohol	ND	---	3.85	ug/L	20	3.85	ND	77	31-120%	16	30%	Q-41
Isophorone	3.86	---	0.962	ug/L	20	3.85	ND	74	42-124%	7	30%	
Azobenzene (1,2-DPH)	3.63	---	0.962	ug/L	20	3.85	ND	69	61-120%	10	30%	
Bis(2-Ethylhexyl) adipate	ND	---	9.62	ug/L	20	3.85	ND		63-121%		30%	Q-11
3,3'-Dichlorobenzidine	ND	---	19.2	ug/L	20	7.69	ND		27-129%		30%	Q-11, Q-52
1,2-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND		59-120%		30%	Q-11
1,3-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND		49-128%		30%	Q-11
1,4-Dinitrobenzene	ND	---	9.62	ug/L	20	3.85	ND		54-120%		30%	Q-11
Pyridine	ND	---	3.85	ug/L	20	3.85	ND		10-120%		30%	Q-01, Q-31
1,2-Dichlorobenzene	1.68	---	0.962	ug/L	20	3.85	ND	44	32-120%	7	30%	
1,3-Dichlorobenzene	1.56	---	0.962	ug/L	20	3.85	ND	41	28-120%	6	30%	
1,4-Dichlorobenzene	1.66	---	0.962	ug/L	20	3.85	ND	43	29-120%	7	30%	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Semivolatile Organic Compounds by EPA 8270E**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0175 - EPA 3510C (Acid/Base Neutral)							Water					
Matrix Spike Dup (24E0175-MSD1)			Prepared: 05/06/24 06:20    Analyzed: 05/06/24 16:46									
QC Source Sample: Non-SDG (A4E0805-06)												
Surr: Nitrobenzene-d5 (Surr)		Recovery: 85 %		Limits: 44-120 %		Dilution: 20x		Q-41				
2-Fluorobiphenyl (Surr)		84 %		44-120 %		"						
Phenol-d6 (Surr)		24 %		10-133 %		"		Q-41				
p-Terphenyl-d14 (Surr)		83 %		50-134 %		"						
2-Fluorophenol (Surr)		32 %		19-120 %		"						
2,4,6-Tribromophenol (Surr)		119 %		43-140 %		"						

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*Philip Nerenberg*

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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503-718-2323  
ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0302-BLK1)			Prepared: 05/08/24 11:45		Analyzed: 05/09/24 12:40							
EPA 8270E												
Acenaphthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benz(a)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Benzo(a)pyrene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Chrysene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluoranthene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Fluorene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
2-Methylnaphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Naphthalene	ND	---	0.0400	ug/L	1	---	---	---	---	---	---	
Phenanthrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Pyrene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Carbazole	ND	---	0.0300	ug/L	1	---	---	---	---	---	---	
Dibenzofuran	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
2-Chlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
2-Methylphenol	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
4-Nitrophenol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Phenol	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0302-BLK1)						Prepared: 05/08/24 11:45 Analyzed: 05/09/24 12:40						
2,3,5,6-Tetrachlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,5-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Diethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Dimethylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-butylphthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	B-02
2,2'-Oxybis(1-Chloropropane)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorobenzene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
Hexachlorobutadiene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
Hexachloroethane	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Chloronaphthalene	ND	---	0.0200	ug/L	1	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Aniline	ND	---	0.100	ug/L	1	---	---	---	---	---	---	
4-Chloroaniline	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
2-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
3-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
4-Nitroaniline	ND	---	0.400	ug/L	1	---	---	---	---	---	---	
Nitrobenzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Benzoic acid	ND	---	2.50	ug/L	1	---	---	---	---	---	---	
Benzyl alcohol	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Isophorone	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
Blank (24E0302-BLK1)			Prepared: 05/08/24 11:45		Analyzed: 05/09/24 12:40							
Azobenzene (1,2-DPH)	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	Q-52
Bis(2-Ethylhexyl) adipate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
3,3'-Dichlorobenzidine	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,3-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Pyridine	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	---	0.0500	ug/L	1	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			Recovery: 80 %	Limits: 44-120 %		Dilution: 1x						
2-Fluorobiphenyl (Surr)			67 %	44-120 %		"						
Phenol-d6 (Surr)			22 %	10-133 %		"						
p-Terphenyl-d14 (Surr)			95 %	50-134 %		"						
2-Fluorophenol (Surr)			34 %	19-120 %		"						
2,4,6-Tribromophenol (Surr)			58 %	43-140 %		"						

## LCS (24E0302-BS1)

Prepared: 05/08/24 11:45 Analyzed: 05/09/24 13:15

## EPA 8270E

Acenaphthene	2.64	---	0.0800	ug/L	4	4.00	---	66	47-122%	---	---
Acenaphthylene	3.07	---	0.0800	ug/L	4	4.00	---	77	41-130%	---	---
Anthracene	3.53	---	0.0800	ug/L	4	4.00	---	88	57-123%	---	---
Benz(a)anthracene	3.70	---	0.0800	ug/L	4	4.00	---	93	58-125%	---	---
Benzo(a)pyrene	3.59	---	0.120	ug/L	4	4.00	---	90	54-128%	---	---
Benzo(b)fluoranthene	3.77	---	0.120	ug/L	4	4.00	---	94	53-131%	---	---
Benzo(k)fluoranthene	3.62	---	0.120	ug/L	4	4.00	---	90	57-129%	---	---
Benzo(g,h,i)perylene	3.72	---	0.0800	ug/L	4	4.00	---	93	50-134%	---	---
Chrysene	3.63	---	0.0800	ug/L	4	4.00	---	91	59-123%	---	---
Dibenz(a,h)anthracene	3.49	---	0.0800	ug/L	4	4.00	---	87	51-134%	---	---
Fluoranthene	3.83	---	0.0800	ug/L	4	4.00	---	96	57-128%	---	---
Fluorene	3.34	---	0.0800	ug/L	4	4.00	---	84	52-124%	---	---
Indeno(1,2,3-cd)pyrene	3.39	---	0.0800	ug/L	4	4.00	---	85	52-134%	---	---
1-Methylnaphthalene	2.24	---	0.160	ug/L	4	4.00	---	56	41-120%	---	---
2-Methylnaphthalene	2.14	---	0.160	ug/L	4	4.00	---	54	40-121%	---	---

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
LCS (24E0302-BS1)			Prepared: 05/08/24 11:45		Analyzed: 05/09/24 13:15							
Naphthalene	2.14	---	0.160	ug/L	4	4.00	---	53	40-121%	---	---	
Phenanthrene	3.52	---	0.0800	ug/L	4	4.00	---	88	59-120%	---	---	
Pyrene	3.77	---	0.0800	ug/L	4	4.00	---	94	57-126%	---	---	
Carbazole	3.99	---	0.120	ug/L	4	4.00	---	100	60-122%	---	---	
Dibenzofuran	3.08	---	0.0800	ug/L	4	4.00	---	77	53-120%	---	---	
2-Chlorophenol	2.40	---	0.400	ug/L	4	4.00	---	60	38-120%	---	---	
4-Chloro-3-methylphenol	3.46	---	0.800	ug/L	4	4.00	---	86	52-120%	---	---	Q-41
2,4-Dichlorophenol	3.13	---	0.400	ug/L	4	4.00	---	78	47-121%	---	---	
2,4-Dimethylphenol	1.94	---	1.00	ug/L	4	4.00	---	48	31-124%	---	---	
2,4-Dinitrophenol	4.47	---	2.00	ug/L	4	4.00	---	112	23-143%	---	---	Q-41
4,6-Dinitro-2-methylphenol	4.22	---	2.00	ug/L	4	4.00	---	105	44-137%	---	---	Q-41
2-Methylphenol	2.10	---	0.200	ug/L	4	4.00	---	52	30-120%	---	---	
3+4-Methylphenol(s)	2.10	---	0.200	ug/L	4	4.00	---	53	29-120%	---	---	
2-Nitrophenol	3.31	---	0.800	ug/L	4	4.00	---	83	47-123%	---	---	
4-Nitrophenol	1.43	---	0.800	ug/L	4	4.00	---	36	10-120%	---	---	Q-41
Pentachlorophenol (PCP)	3.22	---	0.800	ug/L	4	4.00	---	81	35-138%	---	---	
Phenol	0.874	---	0.800	ug/L	4	4.00	---	22	10-120%	---	---	
2,3,4,6-Tetrachlorophenol	3.45	---	0.400	ug/L	4	4.00	---	86	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	3.73	---	0.400	ug/L	4	4.00	---	93	50-121%	---	---	
2,4,5-Trichlorophenol	4.07	---	0.400	ug/L	4	4.00	---	102	53-123%	---	---	Q-41
2,4,6-Trichlorophenol	3.59	---	0.400	ug/L	4	4.00	---	90	50-125%	---	---	Q-41
Bis(2-ethylhexyl)phthalate	3.77	---	1.60	ug/L	4	4.00	---	94	55-135%	---	---	
Butyl benzyl phthalate	3.76	---	1.60	ug/L	4	4.00	---	94	53-134%	---	---	
Diethylphthalate	3.66	---	1.60	ug/L	4	4.00	---	92	56-125%	---	---	
Dimethylphthalate	3.69	---	1.60	ug/L	4	4.00	---	92	45-127%	---	---	
Di-n-butylphthalate	3.94	---	1.60	ug/L	4	4.00	---	99	59-127%	---	---	
Di-n-octyl phthalate	3.61	---	1.60	ug/L	4	4.00	---	90	51-140%	---	---	
N-Nitrosodimethylamine	1.46	---	0.200	ug/L	4	4.00	---	36	19-120%	---	---	
N-Nitroso-di-n-propylamine	3.25	---	0.200	ug/L	4	4.00	---	81	49-120%	---	---	
N-Nitrosodiphenylamine	3.38	---	0.200	ug/L	4	4.00	---	84	51-123%	---	---	
Bis(2-Chloroethoxy) methane	3.07	---	0.200	ug/L	4	4.00	---	77	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.91	---	0.200	ug/L	4	4.00	---	73	43-120%	---	---	B-02
2,2'-Oxybis(1-Chloropropane)	2.65	---	0.200	ug/L	4	4.00	---	66	41-120%	---	---	
Hexachlorobenzene	3.21	---	0.0800	ug/L	4	4.00	---	80	53-125%	---	---	

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## ANALYTICAL REPORT

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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
LCS (24E0302-BS1)			Prepared: 05/08/24 11:45		Analyzed: 05/09/24 13:15							
Hexachlorobutadiene	1.26	---	0.200	ug/L	4	4.00	---	31	22-124%	---	---	Q-41
Hexachlorocyclopentadiene	0.986	---	0.400	ug/L	4	4.00	---	25	10-127%	---	---	
Hexachloroethane	1.34	---	0.200	ug/L	4	4.00	---	33	21-120%	---	---	
2-Chloronaphthalene	2.39	---	0.0800	ug/L	4	4.00	---	60	40-120%	---	---	
1,2,4-Trichlorobenzene	1.54	---	0.200	ug/L	4	4.00	---	39	29-120%	---	---	Q-29, Q-52
4-Bromophenyl phenyl ether	3.09	---	0.200	ug/L	4	4.00	---	77	55-124%	---	---	
4-Chlorophenyl phenyl ether	2.85	---	0.200	ug/L	4	4.00	---	71	53-121%	---	---	
Aniline	1.82	---	0.400	ug/L	4	4.00	---	46	10-120%	---	---	
4-Chloroaniline	2.47	---	0.200	ug/L	4	4.00	---	62	33-120%	---	---	
2-Nitroaniline	3.69	---	1.60	ug/L	4	4.00	---	92	55-127%	---	---	
3-Nitroaniline	3.39	---	1.60	ug/L	4	4.00	---	85	41-128%	---	---	
4-Nitroaniline	3.77	---	1.60	ug/L	4	4.00	---	94	25-120%	---	---	
Nitrobenzene	2.83	---	0.800	ug/L	4	4.00	---	71	45-121%	---	---	
2,4-Dinitrotoluene	3.63	---	0.800	ug/L	4	4.00	---	91	57-128%	---	---	
2,6-Dinitrotoluene	3.46	---	0.800	ug/L	4	4.00	---	86	57-124%	---	---	
Benzoic acid	3.68	---	3.20	ug/L	4	8.00	---	46	10-120%	---	---	
Benzyl alcohol	2.25	---	0.800	ug/L	4	4.00	---	56	31-120%	---	---	
Isophorone	3.33	---	0.200	ug/L	4	4.00	---	83	42-124%	---	---	
Azobenzene (1,2-DPH)	3.21	---	0.200	ug/L	4	4.00	---	80	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.58	---	2.00	ug/L	4	4.00	---	90	63-121%	---	---	
3,3'-Dichlorobenzidine	10.6	---	4.00	ug/L	4	8.00	---	133	27-129%	---	---	
1,2-Dinitrobenzene	3.51	---	2.00	ug/L	4	4.00	---	88	59-120%	---	---	
1,3-Dinitrobenzene	3.81	---	2.00	ug/L	4	4.00	---	95	49-128%	---	---	
1,4-Dinitrobenzene	3.75	---	2.00	ug/L	4	4.00	---	94	54-120%	---	---	
Pyridine	1.65	---	0.800	ug/L	4	4.00	---	41	10-120%	---	---	
1,2-Dichlorobenzene	1.49	---	0.200	ug/L	4	4.00	---	37	32-120%	---	---	
1,3-Dichlorobenzene	1.38	---	0.200	ug/L	4	4.00	---	35	28-120%	---	---	
1,4-Dichlorobenzene	1.44	---	0.200	ug/L	4	4.00	---	36	29-120%	---	---	
Surr: Nitrobenzene-d5 (Surr)			Recovery: 76 %		Limits: 44-120 %		Dilution: 4x					
2-Fluorobiphenyl (Surr)			71 %		44-120 %		"					
Phenol-d6 (Surr)			21 %		10-133 %		"					
p-Terphenyl-d14 (Surr)			94 %		50-134 %		"					
2-Fluorophenol (Surr)			33 %		19-120 %		"					
2,4,6-Tribromophenol (Surr)			87 %		43-140 %		"					

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A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)							Water					
LCS Dup (24E0302-BSD1)			Prepared: 05/08/24 11:45    Analyzed: 05/09/24 13:50					Q-19				
EPA 8270E												
Acenaphthene	2.46	---	0.0800	ug/L	4	4.00	---	62	47-122%	7	30%	
Acenaphthylene	2.87	---	0.0800	ug/L	4	4.00	---	72	41-130%	7	30%	
Anthracene	3.52	---	0.0800	ug/L	4	4.00	---	88	57-123%	0.1	30%	
Benz(a)anthracene	3.59	---	0.0800	ug/L	4	4.00	---	90	58-125%	3	30%	
Benzo(a)pyrene	3.56	---	0.120	ug/L	4	4.00	---	89	54-128%	1	30%	
Benzo(b)fluoranthene	3.75	---	0.120	ug/L	4	4.00	---	94	53-131%	0.7	30%	
Benzo(k)fluoranthene	3.71	---	0.120	ug/L	4	4.00	---	93	57-129%	2	30%	
Benzo(g,h,i)perylene	3.67	---	0.0800	ug/L	4	4.00	---	92	50-134%	1	30%	
Chrysene	3.56	---	0.0800	ug/L	4	4.00	---	89	59-123%	2	30%	
Dibenz(a,h)anthracene	3.45	---	0.0800	ug/L	4	4.00	---	86	51-134%	1	30%	
Fluoranthene	3.79	---	0.0800	ug/L	4	4.00	---	95	57-128%	1	30%	
Fluorene	3.17	---	0.0800	ug/L	4	4.00	---	79	52-124%	5	30%	
Indeno(1,2,3-cd)pyrene	3.42	---	0.0800	ug/L	4	4.00	---	85	52-134%	0.8	30%	
1-Methylnaphthalene	1.97	---	0.160	ug/L	4	4.00	---	49	41-120%	13	30%	
2-Methylnaphthalene	1.87	---	0.160	ug/L	4	4.00	---	47	40-121%	13	30%	
Naphthalene	1.91	---	0.160	ug/L	4	4.00	---	48	40-121%	11	30%	
Phenanthrene	3.47	---	0.0800	ug/L	4	4.00	---	87	59-120%	1	30%	
Pyrene	3.72	---	0.0800	ug/L	4	4.00	---	93	57-126%	1	30%	
Carbazole	3.96	---	0.120	ug/L	4	4.00	---	99	60-122%	0.8	30%	
Dibenzofuran	2.89	---	0.0800	ug/L	4	4.00	---	72	53-120%	7	30%	
2-Chlorophenol	2.45	---	0.400	ug/L	4	4.00	---	61	38-120%	2	30%	
4-Chloro-3-methylphenol	3.37	---	0.800	ug/L	4	4.00	---	84	52-120%	3	30%	Q-41
2,4-Dichlorophenol	3.17	---	0.400	ug/L	4	4.00	---	79	47-121%	1	30%	
2,4-Dimethylphenol	1.91	---	1.00	ug/L	4	4.00	---	48	31-124%	1	30%	
2,4-Dinitrophenol	4.32	---	2.00	ug/L	4	4.00	---	108	23-143%	3	30%	Q-41
4,6-Dinitro-2-methylphenol	4.19	---	2.00	ug/L	4	4.00	---	105	44-137%	0.6	30%	Q-41
2-Methylphenol	2.04	---	0.200	ug/L	4	4.00	---	51	30-120%	3	30%	
3+4-Methylphenol(s)	2.01	---	0.200	ug/L	4	4.00	---	50	29-120%	5	30%	
2-Nitrophenol	3.26	---	0.800	ug/L	4	4.00	---	81	47-123%	2	30%	
4-Nitrophenol	1.21	---	0.800	ug/L	4	4.00	---	30	10-120%	17	30%	Q-41
Pentachlorophenol (PCP)	3.25	---	0.800	ug/L	4	4.00	---	81	35-138%	0.7	30%	
Phenol	0.782	---	0.600	ug/L	4	4.00	---	20	10-120%	11	30%	
2,3,4,6-Tetrachlorophenol	3.42	---	0.400	ug/L	4	4.00	---	86	50-128%	0.7	30%	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0302 - EPA 3510C (Acid/Base Neutral)						Water						
LCS Dup (24E0302-BSD1)						Prepared: 05/08/24 11:45 Analyzed: 05/09/24 13:50						Q-19
2,3,5,6-Tetrachlorophenol	3.70	---	0.400	ug/L	4	4.00	---	92	50-121%	0.7	30%	
2,4,5-Trichlorophenol	4.04	---	0.400	ug/L	4	4.00	---	101	53-123%	0.8	30%	Q-41
2,4,6-Trichlorophenol	3.57	---	0.400	ug/L	4	4.00	---	89	50-125%	0.5	30%	Q-41
Bis(2-ethylhexyl)phthalate	3.74	---	1.60	ug/L	4	4.00	---	93	55-135%	0.8	30%	
Butyl benzyl phthalate	3.80	---	1.60	ug/L	4	4.00	---	95	53-134%	1	30%	
Diethylphthalate	3.68	---	1.60	ug/L	4	4.00	---	92	56-125%	0.4	30%	
Dimethylphthalate	3.62	---	1.60	ug/L	4	4.00	---	91	45-127%	2	30%	
Di-n-butylphthalate	4.00	---	1.60	ug/L	4	4.00	---	100	59-127%	1	30%	
Di-n-octyl phthalate	3.70	---	1.60	ug/L	4	4.00	---	92	51-140%	2	30%	
N-Nitrosodimethylamine	1.37	---	0.200	ug/L	4	4.00	---	34	19-120%	6	30%	
N-Nitroso-di-n-propylamine	3.42	---	0.200	ug/L	4	4.00	---	85	49-120%	5	30%	
N-Nitrosodiphenylamine	3.35	---	0.200	ug/L	4	4.00	---	84	51-123%	0.8	30%	
Bis(2-Chloroethoxy) methane	3.12	---	0.200	ug/L	4	4.00	---	78	48-120%	2	30%	
Bis(2-Chloroethyl) ether	2.93	---	0.200	ug/L	4	4.00	---	73	43-120%	0.7	30%	B-02
2,2'-Oxybis(1-Chloropropane)	2.67	---	0.200	ug/L	4	4.00	---	67	41-120%	1	30%	
Hexachlorobenzene	3.20	---	0.0800	ug/L	4	4.00	---	80	53-125%	0.2	30%	
Hexachlorobutadiene	0.995	---	0.200	ug/L	4	4.00	---	25	22-124%	23	30%	
Hexachlorocyclopentadiene	0.679	---	0.400	ug/L	4	4.00	---	17	10-127%	37	30%	Q-41, Q-24
Hexachloroethane	1.09	---	0.200	ug/L	4	4.00	---	27	21-120%	20	30%	
2-Chloronaphthalene	2.09	---	0.0800	ug/L	4	4.00	---	52	40-120%	13	30%	
1,2,4-Trichlorobenzene	1.30	---	0.200	ug/L	4	4.00	---	32	29-120%	17	30%	
4-Bromophenyl phenyl ether	3.01	---	0.200	ug/L	4	4.00	---	75	55-124%	3	30%	
4-Chlorophenyl phenyl ether	2.67	---	0.200	ug/L	4	4.00	---	67	53-121%	7	30%	
Aniline	1.85	---	0.400	ug/L	4	4.00	---	46	10-120%	1	30%	
4-Chloroaniline	2.42	---	0.200	ug/L	4	4.00	---	61	33-120%	2	30%	
2-Nitroaniline	3.72	---	1.60	ug/L	4	4.00	---	93	55-127%	0.8	30%	
3-Nitroaniline	3.29	---	1.60	ug/L	4	4.00	---	82	41-128%	3	30%	
4-Nitroaniline	3.66	---	1.60	ug/L	4	4.00	---	92	25-120%	3	30%	
Nitrobenzene	2.90	---	0.800	ug/L	4	4.00	---	72	45-121%	2	30%	
2,4-Dinitrotoluene	3.60	---	0.800	ug/L	4	4.00	---	90	57-128%	0.7	30%	
2,6-Dinitrotoluene	3.51	---	0.800	ug/L	4	4.00	---	88	57-124%	2	30%	
Benzoic acid	3.57	---	3.20	ug/L	4	8.00	---	45	10-120%	3	30%	
Benzyl alcohol	2.26	---	0.800	ug/L	4	4.00	---	56	31-120%	0.2	30%	
Isophorone	3.38	---	0.200	ug/L	4	4.00	---	84	42-124%	2	30%	

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Semivolatile Organic Compounds by EPA 8270E

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
<b>Batch 24E0302 - EPA 3510C (Acid/Base Neutral)</b>						<b>Water</b>						
<b>LCS Dup (24E0302-BSD1)</b>					Prepared: 05/08/24 11:45 Analyzed: 05/09/24 13:50						<b>Q-19</b>	
Azobenzene (1,2-DPH)	3.22	---	0.200	ug/L	4	4.00	---	80	61-120%	0.2	30%	
Bis(2-Ethylhexyl) adipate	3.57	---	2.00	ug/L	4	4.00	---	89	63-121%	0.4	30%	
3,3'-Dichlorobenzidine	10.1	---	4.00	ug/L	4	8.00	---	126	27-129%	5	30%	Q-52
1,2-Dinitrobenzene	3.50	---	2.00	ug/L	4	4.00	---	87	59-120%	0.4	30%	
1,3-Dinitrobenzene	3.78	---	2.00	ug/L	4	4.00	---	95	49-128%	0.6	30%	
1,4-Dinitrobenzene	3.84	---	2.00	ug/L	4	4.00	---	96	54-120%	2	30%	
Pyridine	1.63	---	0.800	ug/L	4	4.00	---	41	10-120%	1	30%	
1,2-Dichlorobenzene	1.27	---	0.200	ug/L	4	4.00	---	32	32-120%	16	30%	
1,3-Dichlorobenzene	1.16	---	0.200	ug/L	4	4.00	---	29	28-120%	18	30%	
1,4-Dichlorobenzene	1.20	---	0.200	ug/L	4	4.00	---	30	29-120%	18	30%	
<i>Surr: Nitrobenzene-d5 (Surr)</i>												
		<i>Recovery: 81 %</i>		<i>Limits: 44-120 %</i>		<i>Dilution: 4x</i>						
<i>2-Fluorobiphenyl (Surr)</i>		<i>74 %</i>		<i>44-120 %</i>		<i>"</i>						
<i>Phenol-d6 (Surr)</i>		<i>19 %</i>		<i>10-133 %</i>		<i>"</i>						
<i>p-Terphenyl-d14 (Surr)</i>		<i>96 %</i>		<i>50-134 %</i>		<i>"</i>						
<i>2-Fluorophenol (Surr)</i>		<i>32 %</i>		<i>19-120 %</i>		<i>"</i>						
<i>2,4,6-Tribromophenol (Surr)</i>		<i>90 %</i>		<i>43-140 %</i>		<i>"</i>						

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0554 - EPA 3015A						Water						
Blank (24E0554-BLK1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 16:58							
EPA 6020B												
Aluminum	ND	---	50.0	ug/L	1	---	---	---	---	---	---	B-02
Antimony	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Beryllium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Cadmium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	B-02
Calcium	ND	---	600	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Copper	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Lead	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Magnesium	ND	---	150	ug/L	1	---	---	---	---	---	---	
Manganese	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Mercury	ND	---	0.0800	ug/L	1	---	---	---	---	---	---	
Molybdenum	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Nickel	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Potassium	ND	---	100	ug/L	1	---	---	---	---	---	---	
Selenium	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Silver	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Sodium	ND	---	100	ug/L	1	---	---	---	---	---	---	
Thallium	ND	---	0.200	ug/L	1	---	---	---	---	---	---	
Vanadium	ND	---	2.00	ug/L	1	---	---	---	---	---	---	
Zinc	ND	---	4.00	ug/L	1	---	---	---	---	---	---	
Blank (24E0554-BLK3)			Prepared: 05/15/24 10:21		Analyzed: 05/17/24 16:13							
EPA 6020B												
Boron	ND	---	10.0	ug/L	1	---	---	---	---	---	---	B-02
Lithium	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
Strontium	ND	---	5.00	ug/L	1	---	---	---	---	---	---	
LCS (24E0554-BS1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 17:18							
EPA 6020B												
Aluminum	3000	---	50.0	ug/L	1	2780	---	108	80-120%	---	---	
Antimony	28.9	---	1.00	ug/L	1	27.8	---	104	80-120%	---	---	

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0554 - EPA 3015A						Water						
LCS (24E0554-BS1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 17:18							
Arsenic	56.9	---	1.00	ug/L	1	55.6	---	102	80-120%	---	---	Q-29
Barium	58.4	---	2.00	ug/L	1	55.6	---	105	80-120%	---	---	
Beryllium	28.4	---	0.200	ug/L	1	27.8	---	102	80-120%	---	---	
Cadmium	56.8	---	0.200	ug/L	1	55.6	---	102	80-120%	---	---	
Calcium	3430	---	600	ug/L	1	2780	---	124	80-120%	---	---	
Chromium	59.7	---	2.00	ug/L	1	55.6	---	107	80-120%	---	---	
Copper	63.8	---	2.00	ug/L	1	55.6	---	115	80-120%	---	---	
Lead	53.0	---	0.200	ug/L	1	55.6	---	95	80-120%	---	---	
Magnesium	3030	---	150	ug/L	1	2780	---	109	80-120%	---	---	
Manganese	60.2	---	1.00	ug/L	1	55.6	---	108	80-120%	---	---	
Mercury	1.01	---	0.0800	ug/L	1	1.11	---	91	80-120%	---	---	B-02, Q-41
Molybdenum	29.7	---	1.00	ug/L	1	27.8	---	107	80-120%	---	---	
Nickel	60.0	---	2.00	ug/L	1	55.6	---	108	80-120%	---	---	
Potassium	2930	---	100	ug/L	1	2780	---	106	80-120%	---	---	
Selenium	27.7	---	1.00	ug/L	1	27.8	---	100	80-120%	---	---	
Silver	29.1	---	0.200	ug/L	1	27.8	---	105	80-120%	---	---	
Sodium	2980	---	100	ug/L	1	2780	---	107	80-120%	---	---	
Thallium	28.9	---	0.200	ug/L	1	27.8	---	104	80-120%	---	---	
Vanadium	60.7	---	2.00	ug/L	1	55.6	---	109	80-120%	---	---	
Zinc	60.1	---	4.00	ug/L	1	55.6	---	108	80-120%	---	---	
LCS (24E0554-BS2)			Prepared: 05/15/24 10:21		Analyzed: 05/17/24 17:53							
EPA 6020B												
Boron	234	---	10.0	ug/L	1	222	---	105	80-120%	---	---	B-02
Lithium	228	---	5.00	ug/L	1	222	---	103	80-120%	---	---	
Strontium	229	---	5.00	ug/L	1	222	---	103	80-120%	---	---	
Duplicate (24E0554-DUP1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 17:31							
QC Source Sample: Non-SDG (A4D1691-01)												
Aluminum	ND	---	500	ug/L	10	---	ND	---	---	---	20%	R-04, CONT
Antimony	ND	---	10.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Arsenic	ND	---	10.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Barium	ND	---	20.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Beryllium	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	CONT, R-04

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: SantiamProject Number: **00464.020**

Project Manager: Erik Hedberg

Report ID:**A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0554 - EPA 3015A						Water						
Duplicate (24E0554-DUP1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 17:31							
QC Source Sample: Non-SDG (A4D1691-01)												
Cadmium	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Calcium	41600	---	6000	ug/L	10	---	40600	---	---	3	20%	CONT,B-02, Q-29
Chromium	ND	---	20.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Copper	ND	---	20.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Lead	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Magnesium	5030	---	1500	ug/L	10	---	4790	---	---	5	20%	CONT,B-02, Q-41
Manganese	89.6	---	10.0	ug/L	10	---	87.3	---	---	3	20%	CONT
Mercury	ND	---	0.800	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Molybdenum	ND	---	10.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Nickel	ND	---	20.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Potassium	8300	---	1000	ug/L	10	---	7840	---	---	6	20%	CONT
Selenium	ND	---	10.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Silver	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Sodium	17000	---	1000	ug/L	10	---	16000	---	---	6	20%	CONT
Thallium	ND	---	2.00	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Vanadium	ND	---	20.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Zinc	ND	---	40.0	ug/L	10	---	ND	---	---	---	20%	R-04, CONT

## Duplicate (24E0554-DUP2)

Prepared: 05/15/24 10:21 Analyzed: 05/17/24 16:23

<u>QC Source Sample: Non-SDG (A4D1691-01)</u>												
Boron	ND	---	100	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Lithium	ND	---	50.0	ug/L	10	---	ND	---	---	---	20%	CONT, R-04
Strontium	<b>165</b>	---	50.0	ug/L	10	---	161	---	---	3	20%	CONT,B-02

## Matrix Spike (24E0554-MS1)

Prepared: 05/15/24 10:21 Analyzed: 05/16/24 17:44

<u>QC Source Sample: Non-SDG (A4D1691-03)</u>												
<u>EPA 6020B</u>												
Aluminum	3060	---	500	ug/L	10	2780	ND	110	75-125%	---	---	CONT
Antimony	30.7	---	10.0	ug/L	10	27.8	ND	111	75-125%	---	---	CONT
Arsenic	61.2	---	10.0	ug/L	10	55.6	ND	110	75-125%	---	---	CONT
Barium	62.1	---	20.0	ug/L	10	55.6	ND	112	75-125%	---	---	CONT

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0554 - EPA 3015A						Water						
Matrix Spike (24E0554-MS1)			Prepared: 05/15/24 10:21		Analyzed: 05/16/24 17:44							
QC Source Sample: Non-SDG (A4D1691-03)												
Beryllium	30.0	---	2.00	ug/L	10	27.8	ND	108	75-125%	---	---	CONT
Cadmium	60.0	---	2.00	ug/L	10	55.6	ND	108	75-125%	---	---	CONT
Calcium	41600	---	6000	ug/L	10	2780	37500	148	75-125%	---	---	CONT,B-02, Q-65, Q-29
Chromium	62.5	---	20.0	ug/L	10	55.6	ND	113	75-125%	---	---	CONT
Copper	66.5	---	20.0	ug/L	10	55.6	ND	120	75-125%	---	---	CONT
Lead	54.8	---	2.00	ug/L	10	55.6	ND	99	75-125%	---	---	CONT
Magnesium	9890	---	1500	ug/L	10	2780	6890	108	75-125%	---	---	CONT,B-02, Q-41
Manganese	198	---	10.0	ug/L	10	55.6	133	116	75-125%	---	---	CONT
Mercury	1.12	---	0.800	ug/L	10	1.11	ND	100	75-125%	---	---	CONT
Molybdenum	32.8	---	10.0	ug/L	10	27.8	ND	118	75-125%	---	---	CONT
Nickel	62.8	---	20.0	ug/L	10	55.6	ND	113	75-125%	---	---	CONT
Potassium	9830	---	1000	ug/L	10	2780	6740	112	75-125%	---	---	CONT
Selenium	29.6	---	10.0	ug/L	10	27.8	ND	107	75-125%	---	---	CONT
Silver	30.0	---	2.00	ug/L	10	27.8	ND	108	75-125%	---	---	CONT
Sodium	18100	---	1000	ug/L	10	2780	14900	116	75-125%	---	---	CONT
Thallium	30.1	---	2.00	ug/L	10	27.8	ND	108	75-125%	---	---	CONT
Vanadium	64.7	---	20.0	ug/L	10	55.6	ND	117	75-125%	---	---	CONT
Zinc	65.0	---	40.0	ug/L	10	55.6	ND	117	75-125%	---	---	CONT

## Matrix Spike (24E0554-MS2)

Prepared: 05/15/24 10:21 Analyzed: 05/17/24 17:58

<u>QC Source Sample: Non-SDG (A4D1722-01)</u>												
<u>EPA 6020B</u>												
Boron	606	---	100	ug/L	10	222	366	108	75-125%	---	---	
Lithium	236	---	50.0	ug/L	10	222	ND	106	75-125%	---	---	
Strontium	999	---	50.0	ug/L	10	222	766	105	75-125%	---	---	B-02

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ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0705 - EPA 3015A						Water						
Blank (24E0705-BLK2)			Prepared: 05/20/24 14:27   Analyzed: 05/21/24 11:31									
EPA 6020B												
Calcium	ND	---	600	ug/L	1	---	---	---	---	---	---	Q-16
LCS (24E0705-BS2)			Prepared: 05/20/24 14:27   Analyzed: 05/21/24 13:25									
EPA 6020B												
Calcium	2970	---	600	ug/L	1	2780	---	107	80-120%	---	---	Q-16
Duplicate (24E0705-DUP2)			Prepared: 05/20/24 14:27   Analyzed: 05/21/24 13:54									
QC Source Sample: Non-SDG (A4E1046-01RE1)												
Calcium	16200	---	600	ug/L	1	---	16100	---	---	0.6	20%	Q-16
Matrix Spike (24E0705-MS2)			Prepared: 05/20/24 14:27   Analyzed: 05/21/24 14:33									
QC Source Sample: Non-SDG (A4E1314-01RE1)												
EPA 6020B												
Calcium	126000	---	600	ug/L	1	2780	124000	57	75-125%	---	---	E, Q-16, Q-65

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Portland, OR 97232

Project: SantiamProject Number: **00464.020**

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0140 - Method Prep: Aq						Water						
Blank (24E0140-BLK1)			Prepared: 05/03/24 09:16   Analyzed: 05/03/24 13:09									
<u>SM 4500-NH3 G</u>												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24E0140-BS1)			Prepared: 05/03/24 09:16   Analyzed: 05/03/24 13:10									
<u>SM 4500-NH3 G</u>												
Ammonia as N	2.07	---	0.0200	mg/L	1	2.00	---	103	90-111%	---	---	
Matrix Spike (24E0140-MS1)			Prepared: 05/03/24 09:16   Analyzed: 05/03/24 13:15									
<u>QC Source Sample: Non-SDG (A4D1624-01)</u>												
<u>SM 4500-NH3 G</u>												
Ammonia as N	2.60	---	0.0250	mg/L	1	2.50	ND	104	90-111%	---	---	
Matrix Spike Dup (24E0140-MSD1)			Prepared: 05/03/24 09:16   Analyzed: 05/03/24 13:16									
<u>QC Source Sample: Non-SDG (A4D1624-01)</u>												
Ammonia as N	2.55	---	0.0250	mg/L	1	2.50	ND	102	90-111%	2	13%	

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**GSI Water Solutions**

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Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Ammonia by Gas Diffusion and Colorimetric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0183 - Method Prep: Aq						Water						
Blank (24E0183-BLK1)			Prepared: 05/06/24 09:27		Analyzed: 05/06/24 12:55							
SM 4500-NH3 G												
Ammonia as N	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24E0183-BS1)			Prepared: 05/06/24 09:27		Analyzed: 05/06/24 12:57							
SM 4500-NH3 G												
Ammonia as N	1.98	---	0.0200	mg/L	1	2.00	---	99	90-111%	---	---	
Matrix Spike (24E0183-MS1)			Prepared: 05/06/24 09:27		Analyzed: 05/06/24 13:01							
QC Source Sample: Non-SDG (A4E0800-01)												
SM 4500-NH3 G												
Ammonia as N	2.88	---	0.0250	mg/L	1	2.50	0.328	102	90-111%	---	---	
Matrix Spike Dup (24E0183-MSD1)			Prepared: 05/06/24 09:27		Analyzed: 05/06/24 13:03							
QC Source Sample: Non-SDG (A4E0800-01)												
Ammonia as N	2.90	---	0.0250	mg/L	1	2.50	0.328	103	90-111%	0.5	13%	

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650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0116 - Method Prep: Aq						Water						
Blank (24E0116-BLK1)			Prepared: 05/02/24 17:52    Analyzed: 05/02/24 20:24									
EPA 300.0												
Bromide	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Chloride	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Fluoride	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Sulfate	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (24E0116-BS1)			Prepared: 05/02/24 17:52    Analyzed: 05/02/24 20:46									
EPA 300.0												
Bromide	8.25	---	1.00	mg/L	1	8.00	---	103	90-110%	---	---	
Chloride	8.21	---	1.00	mg/L	1	8.00	---	103	90-110%	---	---	
Fluoride	8.09	---	1.00	mg/L	1	8.00	---	101	90-110%	---	---	
Nitrate-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Nitrite-Nitrogen	2.04	---	0.250	mg/L	1	2.00	---	102	90-110%	---	---	
Sulfate	8.28	---	1.00	mg/L	1	8.00	---	103	90-110%	---	---	
Duplicate (24E0116-DUP1)			Prepared: 05/02/24 17:52    Analyzed: 05/02/24 23:38									
QC Source Sample: Non-SDG (A4E0874-01)												
Bromide	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	
Chloride	7.62	---	1.00	mg/L	1	---	7.72	---	---	1	3%	
Fluoride	ND	---	1.00	mg/L	1	---	ND	---	---	---	10%	
Nitrate-Nitrogen	0.908	---	0.250	mg/L	1	---	0.912	---	---	0.5	3%	
Nitrite-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	10%	
Sulfate	1.37	---	1.00	mg/L	1	---	1.43	---	---	4	4%	
Matrix Spike (24E0116-MS1)			Prepared: 05/02/24 17:52    Analyzed: 05/03/24 00:43									
QC Source Sample: Non-SDG (A4E0874-01)												
EPA 300.0												
Bromide	10.3	---	1.25	mg/L	1	10.0	ND	103	85-115%	---	---	
Chloride	18.0	---	1.25	mg/L	1	10.0	7.72	103	90-113%	---	---	
Fluoride	10.3	---	1.25	mg/L	1	10.0	ND	103	88-120%	---	---	
Nitrate-Nitrogen	3.45	---	0.312	mg/L	1	2.50	0.912	102	87-112%	---	---	

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503-718-2323

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**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

**QUALITY CONTROL (QC) SAMPLE RESULTS**

**Anions by Ion Chromatography**

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0116 - Method Prep: Aq							Water					
Matrix Spike (24E0116-MS1)			Prepared: 05/02/24 17:52    Analyzed: 05/03/24 00:43									
QC Source Sample: Non-SDG (A4E0874-01)												
Nitrite-Nitrogen	2.54	---	0.312	mg/L	1	2.50	ND	101	90-114%	---	---	
Sulfate	11.7	---	1.25	mg/L	1	10.0	1.43	103	88-115%	---	---	

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Philip Nerenberg, Lab Director

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Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0227 - ASTM D7511-12 (W)						Water						
Blank (24E0227-BLK1)			Prepared: 05/07/24 09:13		Analyzed: 05/07/24 15:11							
<u>D7511-12</u>												
Total Cyanide	ND	---	0.00500	mg/L	1	---	---	---	---	---	---	
LCS (24E0227-BS1)			Prepared: 05/07/24 09:13		Analyzed: 05/07/24 15:13							
<u>D7511-12</u>												
Total Cyanide	0.0268	---	0.00500	mg/L	1	0.0250	---	107	84-116%	---	---	
Matrix Spike (24E0227-MS1)			Prepared: 05/07/24 09:13		Analyzed: 05/07/24 15:19							
<u>QC Source Sample: Non-SDG (A4E0858-01)</u>												
<u>D7511-12</u>												
Total Cyanide	0.0248	---	0.00503	mg/L	1	0.0251	ND	99	64-136%	---	---	
Matrix Spike Dup (24E0227-MSD1)			Prepared: 05/07/24 09:13		Analyzed: 05/07/24 15:21							
<u>QC Source Sample: Non-SDG (A4E0858-01)</u>												
Total Cyanide	0.0250	---	0.00503	mg/L	1	0.0251	ND	99	64-136%	0.9	47%	

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QUALITY CONTROL (QC) SAMPLE RESULTS

Demand Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0133 - Method Prep: Aq						Water						
Blank (24E0133-BLK1)			Prepared: 05/03/24 10:17   Analyzed: 05/08/24 12:45									
<u>SM 5210 B</u>												
Biochemical Oxygen Demand	ND	---	0.200	mg/L	1	---	---	---	---	---	---	
Duplicate (24E0133-DUP1)			Prepared: 05/03/24 10:17   Analyzed: 05/08/24 12:45									
<u>QC Source Sample: Non-SDG (A4E0855-01)</u>												
Biochemical Oxygen Demand	6.67	---	2.67	mg/L	1	---	7.23	---	---	8	20%	
Duplicate (24E0133-DUP2)			Prepared: 05/03/24 14:57   Analyzed: 05/08/24 12:45									
<u>QC Source Sample: Non-SDG (A4E0906-01)</u>												
Biochemical Oxygen Demand	10.1	---	2.67	mg/L	1	---	9.84	---	---	3	20%	
Reference (24E0133-SRM1)			Prepared: 05/03/24 10:17   Analyzed: 05/08/24 12:45									
<u>SM 5210 B</u>												
Biochemical Oxygen Demand	214	---		mg/L	1	198		108	85-115%	---	---	

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Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Orthophosphate by Colorimetric Spectrophotometry

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0113 - Method Prep: Aq						Water						
Blank (24E0113-BLK1)			Prepared: 05/02/24 17:09		Analyzed: 05/02/24 18:55							
SM 4500-P E												
Orthophosphate Phosphorus	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (24E0113-BS1)			Prepared: 05/02/24 17:09		Analyzed: 05/02/24 18:55							
SM 4500-P E												
Orthophosphate Phosphorus	0.265	---	0.0200	mg/L	1	0.261	---	102	90-110%	---	---	
Matrix Spike (24E0113-MS1)			Prepared: 05/02/24 17:09		Analyzed: 05/02/24 19:04							
QC Source Sample: Non-SDG (A4E0866-07)												
SM 4500-P E												
Orthophosphate Phosphorus	0.277	---	0.0202	mg/L	1	0.261	0.0103	102	90-110%	---	---	
Matrix Spike Dup (24E0113-MSD1)			Prepared: 05/02/24 17:09		Analyzed: 05/02/24 19:04							
QC Source Sample: Non-SDG (A4E0866-07)												
Orthophosphate Phosphorus	0.278	---	0.0202	mg/L	1	0.261	0.0103	103	90-110%	0.2	4%	

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0206 - Total Suspended Solids - 2022						Water						
Blank (24E0206-BLK1)			Prepared: 05/06/24 14:15		Analyzed: 05/06/24 14:15							
SM 2540 D												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (24E0206-DUP1)			Prepared: 05/06/24 14:15		Analyzed: 05/06/24 14:15							
QC Source Sample: SW-1-050124 (A4E0861-02)												
SM 2540 D												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	ND	---	---	---	10%	
Duplicate (24E0206-DUP2)			Prepared: 05/06/24 14:15		Analyzed: 05/06/24 14:15							
QC Source Sample: Non-SDG (A4E0906-01)												
Total Suspended Solids	8.00	---	5.00	mg/L	1	---	10.0	---	---	22.2	10%	Q-05
Reference (24E0206-SRM1)			Prepared: 05/06/24 14:15		Analyzed: 05/06/24 14:15							
SM 2540 D												
Total Suspended Solids	1010	---		mg/L	1	875		115	85-115.4%	---	---	

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Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0214 - Total Dissolved Solids - 2022						Water						
Blank (24E0214-BLK1)			Prepared: 05/06/24 19:18		Analyzed: 05/06/24 19:18							
SM 2540 C												
Total Dissolved Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (24E0214-DUP1)			Prepared: 05/06/24 19:18		Analyzed: 05/06/24 19:18							
QC Source Sample: Non-SDG (A4D1728-06)												
Total Dissolved Solids	11900	---	500	mg/L	1	---	12100	---	---	1.67	10%	
Duplicate (24E0214-DUP2)			Prepared: 05/06/24 19:18		Analyzed: 05/06/24 19:18							
QC Source Sample: WW-050124 (A4E0861-01)												
SM 2540 C												
Total Dissolved Solids	316	---	5.00	mg/L	1	---	307	---	---	2.89	10%	
Reference (24E0214-SRM1)			Prepared: 05/06/24 19:18		Analyzed: 05/06/24 19:18							
SM 2540 C												
Total Dissolved Solids	2550	---		mg/L	1	2470		103	82-118%	---	---	

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Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: Santiam

Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0066 - Method Prep: Aq						Water						
Duplicate (24E0066-DUP1)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 12:00							
QC Source Sample: Non-SDG (A4E0811-01)												
pH	8.1	---		pH Units	1	---	8.1	---	---	0.5	2%	H-12
pH Temperature (deg C)	25.1	---		pH Units	1	---	25.7	---	---	2	30%	H-12
Duplicate (24E0066-DUP2)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 17:10							
QC Source Sample: Non-SDG (A4E0866-12)												
pH	7.4	---		pH Units	1	---	7.3	---	---	0.4	2%	H-12
pH Temperature (deg C)	18.8	---		pH Units	1	---	18.8	---	---	0	30%	H-12
Reference (24E0066-SRM1)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 09:54							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		101	98.33-101.33%	---	---	
pH Temperature (deg C)	21.3	---		pH Units	1	20.0		106	50-200%	---	---	
Reference (24E0066-SRM2)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 09:55							
SM 4500-H+ B												
pH	8.0	---		pH Units	1	8.00		100	99-101%	---	---	
pH Temperature (deg C)	21.3	---		pH Units	1	20.0		106	50-200%	---	---	
Reference (24E0066-SRM3)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 11:55							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	21.8	---		pH Units	1	20.0		109	50-200%	---	---	
Reference (24E0066-SRM4)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 12:24							
SM 4500-H+ B												
pH	8.0	---		pH Units	1	8.00		100	99-101%	---	---	
pH Temperature (deg C)	22.1	---		pH Units	1	20.0		110	50-200%	---	---	
Reference (24E0066-SRM5)			Prepared: 05/02/24 09:42		Analyzed: 05/02/24 16:41							
SM 4500-H+ B												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	22.0	---		pH Units	1	20.0		110	50-200%	---	---	

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**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0066 - Method Prep: Aq							Water					
Reference (24E0066-SRM6)			Prepared: 05/02/24 09:42   Analyzed: 05/02/24 17:13									
SM 4500-H+ B												
pH	8.0	---		pH Units	1	8.00	99	99-101%	---	---		
pH Temperature (deg C)	22.0	---		pH Units	1	20.0	110	50-200%	---	---		

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Project Number: 00464.020

Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0090 - Method Prep: Aq						Water						
Blank (24E0090-BLK1)			Prepared: 05/02/24 12:16   Analyzed: 05/02/24 18:10									
<u>SM 2510 B</u>												
Conductivity	ND	---	2.50	umhos/cm @25degC	1	---	---	---	---	---	---	
Duplicate (24E0090-DUP1)			Prepared: 05/02/24 12:16   Analyzed: 05/02/24 18:19									
<u>QC Source Sample: Non-SDG (A4E0804-01)</u>												
Conductivity	507	---	2.50	umhos/cm @25degC	1	---	506	---	---	0.1	3%	
Reference (24E0090-SRM1)			Prepared: 05/02/24 12:16   Analyzed: 05/02/24 18:11									
<u>SM 2510 B</u>												
Conductivity	1440	---		umhos/cm @25degC	1	1410		102	95-105%	---	---	

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Project Manager: Erik Hedberg

Report ID:

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## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24E0292 - Method Prep: Aq						Water						
Blank (24E0292-BLK1)			Prepared: 05/08/24 09:08		Analyzed: 05/08/24 10:48							
SM 2320 B												
Total Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Bicarbonate Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Carbonate Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
Hydroxide Alkalinity	ND	---	20.0	mg	1	---	---	---	---	---	---	
				CaCO3/L								
LCS (24E0292-BS1)			Prepared: 05/08/24 09:08		Analyzed: 05/08/24 10:55							
SM 2320 B												
Total Alkalinity	105	---	20.0	mg	1	100	---	105	90-115%	---	---	
				CaCO3/L								
Duplicate (24E0292-DUP1)			Prepared: 05/08/24 09:08		Analyzed: 05/08/24 12:25							
QC Source Sample: Non-SDG (A4E0807-01)												
Total Alkalinity	126	---	20.0	mg	1	---	126	---	---	0.2	5%	
				CaCO3/L								
Bicarbonate Alkalinity	126	---	20.0	mg	1	---	126	---	---	0.2	5%	
				CaCO3/L								
Carbonate Alkalinity	ND	---	20.0	mg	1	---	ND	---	---	---	5%	
				CaCO3/L								
Hydroxide Alkalinity	ND	---	20.0	mg	1	---	ND	---	---	---	5%	
				CaCO3/L								

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Portland, OR 97232

Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## SAMPLE PREPARATION INFORMATION

## Volatile Organic Compounds by EPA 8260D

Prep: EPA 5030C

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E0435							
A4E0861-01RE1	Water	EPA 8260D	05/01/24 09:10	05/13/24 10:13	5mL/5mL	5mL/5mL	1.00

## Semivolatile Organic Compounds by EPA 8270E

Prep: EPA 3510C (Acid/Base Neutral)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E0302							
A4E0861-01RE1	Water	EPA 8270E	05/01/24 09:10	05/08/24 11:45	960mL/1mL	1000mL/1mL	1.04

## Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E0554							
A4E0861-01	Water	EPA 6020B	05/01/24 09:10	05/15/24 10:21	45mL/50mL	45mL/50mL	1.00
A4E0861-01RE1	Water	EPA 6020B	05/01/24 09:10	05/15/24 10:21	45mL/50mL	45mL/50mL	1.00
Batch: 24E0705							
A4E0861-01RE3	Water	EPA 6020B	05/01/24 09:10	05/20/24 14:27	45mL/50mL	45mL/50mL	1.00

## Ammonia by Gas Diffusion and Colorimetric Detection

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E0183							
A4E0861-01RE1	Water	SM 4500-NH3 G	05/01/24 09:10	05/06/24 09:27	10mL/10mL	10mL/10mL	1.00

## Anions by Ion Chromatography

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 24E0116							
A4E0861-01	Water	EPA 300.0	05/01/24 09:10	05/02/24 17:52	5mL/5mL	5mL/5mL	1.00

## Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

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ORELAP ID: OR100062**GSI Water Solutions**650 NE Holladay St, Ste 900  
Portland, OR 97232Project: **Santiam**Project Number: **00464.020**Project Manager: **Erik Hedberg****Report ID:****A4E0861 - 05 23 24 1220**

## SAMPLE PREPARATION INFORMATION

## Total Cyanide by UV Digestion/Gas Diffusion/Amperometric Detection

**Prep: ASTM D7511-12 (W)**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0227</b>							
A4E0861-01	Water	D7511-12	05/01/24 09:10	05/07/24 09:13	10mL/10mL	10mL/10mL	1.00

## Demand Parameters

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0133</b>							
A4E0861-02	Water	SM 5210 B	05/01/24 14:50	05/03/24 10:17	150mL/300mL	150mL/300mL	NA
A4E0861-03	Water	SM 5210 B	05/01/24 15:40	05/03/24 10:17	150mL/300mL	150mL/300mL	NA

## Orthophosphate by Colorimetric Spectrophotometry

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0113</b>							
A4E0861-01	Water	SM 4500-P E	05/01/24 09:10	05/02/24 17:09	25mL/25mL	25mL/25mL	1.00

## Solid and Moisture Determinations

**Prep: Total Dissolved Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0214</b>							
A4E0861-01	Water	SM 2540 C	05/01/24 09:10	05/06/24 19:18			NA
A4E0861-02	Water	SM 2540 C	05/01/24 14:50	05/06/24 19:18			NA
A4E0861-03	Water	SM 2540 C	05/01/24 15:40	05/06/24 19:18			NA

**Prep: Total Suspended Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24E0206</b>							
A4E0861-02	Water	SM 2540 D	05/01/24 14:50	05/06/24 14:15			NA
A4E0861-03	Water	SM 2540 D	05/01/24 15:40	05/06/24 14:15			NA

## Conventional Chemistry Parameters

**Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
------------	--------	--------	---------	----------	----------------------	-----------------------	----------------

Apex Laboratories

Philip Nerenberg, Lab Director

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503-718-2323  
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**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

**SAMPLE PREPARATION INFORMATION**

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<u>Batch: 24E0066</u>							
A4E0861-01	Water	SM 4500-H+ B	05/01/24 09:10	05/02/24 11:42	20mL/20mL	20mL/20mL	NA
A4E0861-02	Water	SM 4500-H+ B	05/01/24 14:50	05/02/24 11:42	20mL/20mL	20mL/20mL	NA
A4E0861-03	Water	SM 4500-H+ B	05/01/24 15:40	05/02/24 11:42	20mL/20mL	20mL/20mL	NA
<u>Batch: 24E0090</u>							
A4E0861-01	Water	SM 2510 B	05/01/24 09:10	05/02/24 12:16	40mL/40mL	40mL/40mL	NA
<u>Batch: 24E0292</u>							
A4E0861-01	Water	SM 2320 B	05/01/24 09:10	05/08/24 09:08	60mL/60mL	60mL/60mL	NA

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**A4E0861 - 05 23 24 1220**

## QUALIFIER DEFINITIONS

### **Client Sample and Quality Control (QC) Sample Qualifier Definitions:**

**Apex Laboratories**

- B** Analyte detected in an associated blank at a level above the MRL. (See Notes and Conventions below.)
- B-02** Analyte detected in an associated blank at a level between one-half the MRL and the MRL. (See Notes and Conventions below.)
- CONT** The Sample Container provided for this analysis was not provided by Apex Laboratories, and has not been verified as part of the Apex Quality System.
- DCNT** Sample decanted due to the presence of sediment. Sample bottle not rinsed with solvent.
- E** Estimated Value. The result is above the calibration range of the instrument.
- H-12** Sample Analysis or Filtration was performed >15 minutes after sample collection. Consult regulator or permit manager to determine the usability of data for intended use.
- Q-01** Spike recovery and/or RPD is outside acceptance limits.
- Q-02** Spike recovery is outside of established control limits due to matrix interference.
- Q-03** Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
- Q-05** Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
- Q-11** Spike recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- Q-16** Reanalysis of an original Batch QC sample.
- Q-19** Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
- Q-24** The RPD for this spike and spike duplicate is above established control limits. Recoveries for both the spike and spike duplicate are within control limits.
- Q-29** Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
- Q-30** Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
- Q-31** Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
- Q-41** Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
- Q-52** Due to known erratic recoveries, the result and reporting levels for this analyte are reported as Estimated Values. This analyte may not have passed all QC requirements for this method.
- Q-54** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -3%. The results are reported as Estimated Values.
- Q-54a** Daily Continuing Calibration Verification recovery for this analyte failed the +/-20% criteria listed in EPA method 8260/8270 by -4%. The results are reported as Estimated Values.

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Project Manager: **Erik Hedberg**

Report ID:

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- Q-55** Daily CCV/LCS recovery for this analyte was below the +/-20% criteria listed in EPA 8260, however there is adequate sensitivity to ensure detection at the reporting level.
- Q-65** Spike recovery is estimated due to the high analyte concentration of the source sample.
- R-02** The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- R-04** Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.
- S-05** Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
- S-06** Surrogate recovery is outside of established control limits.
- TSS** Dried residue was less than 2.5mg as specified in the method. Results meet regulatory requirements.

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### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

**"dry"** Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

**"wet"** Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

**" "** Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

**" --- "** QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

**" \*\*\* "** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to  $\frac{1}{2}$  the Reporting Limit (RL).

-For Blank hits falling between  $\frac{1}{2}$  the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

*The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.*

Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)** -

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
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All reported analytes are included in Apex Laboratories' current ORELAP scope.

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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**GSI Water Solutions**

650 NE Holladay St, Ste 900  
Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

**APEX LABS**

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

**CHAIN OF CUSTODY**

Lab # A4E0861 COC 1 of 1

Company: <b>GSI WATER SOLUTIONS</b>		Project Mgr: <b>ERIK HEDBERG</b>		Project Name: <b>SANTIAM CANYON INFILTRATION</b>		Project # <b>00464-020</b>	
Address: <b>650 NE HOLLADAY STREET, PORTLAND, OR</b>		Phone: <b>503-981-0172</b>		Fax: <b>503-981-0172</b>		Email: <b>jng11@gsiws.com</b>	
Sampled by: <b>HOWY NOLAN</b>		Project Mgr: <b>ERIK HEDBERG</b>		Project Name: <b>SANTIAM CANYON INFILTRATION</b>		Project # <b>00464-020</b>	

LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST	
					YES	NO
1	05/02/14	10:10	WW	10	SEE PHILIP FOR ANALYSIS	
2	05/02/14	14:50	SW	2		
3	05/02/14	15:40	SW	2		
4						
5						
6						
7						
8						
9						
10						

**RELINQUISHED BY:**

Signature: Howy Nolan Date: 05/02/14

Printed Name: Howy Nolan Time: 12:35

Company: GSI WATER SOLUTIONS

**RECEIVED BY:**

Signature: [Signature] Date: 05/02/14

Printed Name: [Name] Time: 12:35

Company: Apex

**SPECIAL INSTRUCTIONS:**

SEE ATTACHMENT FOR - SW SAMPLES ANALYSIS TSS, TDS, BOD, PH

EMAIL FROM JESSE HALL @ 10:48 am 05/10 FOR WW-050124 - SEE PHILIP FOR ANALYSIS

Apex Laboratories

*Philip Nerenberg*

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## ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: **Santiam**

Project Number: **00464.020**

Project Manager: **Erik Hedberg**

**Report ID:**

**A4E0861 - 05 23 24 1220**

**Anissa Kepa**

A4E0861

**From:** Philip Nerenberg  
**Sent:** Thursday, May 2, 2024 3:09 PM  
**To:** Anissa Kepa  
**Subject:** FW: Santiam Wastewater COC

**From:** Jesse Hall [mailto:jhall@gsiws.com]  
**Sent:** Thursday, May 2, 2024 10:48 AM  
**To:** Philip Nerenberg  
**Cc:** Holly Norcom  
**Subject:** Santiam Wastewater COC

**CAUTION! THIS IS AN EXTERNAL EMAIL:**

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning, Philip. Yesterday we collected a wastewater sample for analysis of:

- General Parameters by Methods SM4500-H/SM2510B/SM2540C/SM2320B including pH, specific conductivity, total dissolved solids (TDS), and alkalinity (total, bicarbonate, carbonate, hydroxide).
- Total metals and major cations by EPA Methods 6020B/SM4500PE including aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, calcium, chromium, copper, lead, lithium, magnesium, manganese, mercury, molybdenum, nickel, phosphorus (as phosphate), potassium, selenium, silver, sodium, strontium, thallium, vanadium, and zinc.
- Anions including bromide, chloride, fluoride, and sulfate by EPA Method 300.0/9056A.
- Nitrogen species by EPA Method 300.0/9056A including nitrate, nitrite, and ammonia
- Cyanide by American Society for Testing Materials (ASTM) Method D7511.
- Volatile Organic Compounds (VOCs) by EPA Method 8260D.
- Semi-volatile Organic Compounds (SVOCs) by EPA Method 8270E.

We are planning on sending this over to you today via courier, but we do not have a COC for this bottle set. Can you please forward me one and we will get it sent over asap?

Thanks,

**Jesse Hall, GIT**  
Project Hydrogeologist  
mobile: 541.981.0172  
650 NE Holladay Street, Suite 900, Portland, OR 97232  
GSI Water Solutions, Inc. | [www.gsiws.com](http://www.gsiws.com)



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

650 NE Holladay St, Ste 900

Portland, OR 97232

Project: SantiamProject Number: 00464.020Project Manager: Erik Hedberg

Report ID:

A4E0861 - 05 23 24 1220

## APEX LABS COOLER RECEIPT FORM

Client: GSI Water Solutions Element WO#: A4 E0861Project/Project #: Santiam Canyon Infiltration 00464.020

## Delivery Info:

Date/time received: 5/24/11 @ 12:28 By: J8Delivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐From USDA Regulated Origin? Yes ☐ No ☒Cooler Inspection Date/time inspected: 5/24/11 @ 12:29 By: J8Chain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐Contains USDA Reg. Soils? Yes ☐ No ☒ Unsure (email RegSoils) ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>2.4</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>-1</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) ☒ Possible reason why:Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection Date/time inspected: 5/24/11 @ 14:00 By: J8All samples intact? Yes ☒ No ☐ Comments: Bottle labels/COCs agree? Yes ☐ No ☒ Comments: Dates on COC reads 05/02 &Dates on conts. read 5/1, times listed for SW-1 & 2 are takenCOC/container discrepancies form initiated? Yes ☐ No ☒ after received in lab.Containers/volumes received appropriate for analysis? Yes ☒ No ☐ 1 on 31.10 conts. for MW reads 1210.Do VOA vials have visible headspace? Yes ☐ No ☒ NA ☐Comments: Water samples: pH checked: Yes ☒ No ☐ NA ☐ pH appropriate? Yes ☒ No ☐ NA ☐ pH ID: A205172Comments: 

Transcribed for J8-IAAW - AHC 5/24/11

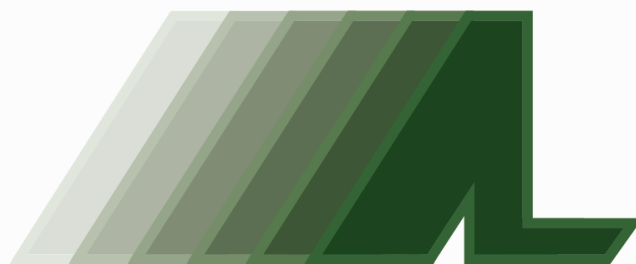
Labeled by: J8Witness: AAWCooler Inspected by: J8

Form Y-003 R-02

Apex Laboratories

Philip Nerenberg, Lab Director

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**ANATEK LABS**

Analytical Results Report For:

**GSI Water Solutions, Inc.**

Project Number:

**Santiam Canyon Infiltration Investigation**

Anatek Work Order:

**MEE0128**

# Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - email moscow@anateklabs.com  
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - email spokane@anateklabs.com

**Client:** GSI Water Solutions, Inc.  
**Address:** 650 NE Holladay Street, Suite 900  
Portland, OR 97232  
**Attn:** Erik Hedberg

**Work Order:** MEE0128  
**Project:** Santiam Canyon Infiltration Investigation  
**Reported:** 5/20/2024 12:52

## Analytical Results Report

**Sample Location:** MW-1-050124  
**Lab/Sample Number:** MEE0128-01 **Collect Date:** 05/01/24 00:00  
**Date Received:** 05/06/24 10:20 **Collected By:** Holly  
**Matrix:** Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	5/8/24 23:19	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	5/8/24 23:19	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	5/8/24 23:19	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	5/8/24 23:19	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	5/8/24 23:19	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	5/8/24 23:19	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	5/8/24 23:19	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	5/8/24 23:19	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	5/8/24 23:19	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	5/8/24 23:19	MER	EPA 1633	U
NETFOSA	ND	ug/L	0.00178	0.0100	5/8/24 23:19	MER	EPA 1633	U
NETFOSE	ND	ug/L	0.00150	0.0100	5/8/24 23:19	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	5/8/24 23:19	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	5/8/24 23:19	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	5/8/24 23:19	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	5/8/24 23:19	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFBA	ND	ug/L	0.0147	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFBS	0.00414	ug/L	0.000660	0.0100	5/8/24 23:19	MER	EPA 1633	J
PFDA	ND	ug/L	0.00238	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFDoA	ND	ug/L	0.00192	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFFHpA	0.00151	ug/L	0.00120	0.0100	5/8/24 23:19	MER	EPA 1633	J
PFFHpS	ND	ug/L	0.000920	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFFHxA	0.00590	ug/L	0.000840	0.0100	5/8/24 23:19	MER	EPA 1633	J
PFFHxS	ND	ug/L	0.00104	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFOA	0.00792	ug/L	0.00162	0.0100	5/8/24 23:19	MER	EPA 1633	J
PFOS	0.0131	ug/L	0.00126	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFOSA	0.000926	ug/L	0.000900	0.0100	5/8/24 23:19	MER	EPA 1633	J

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1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - email [moscow@anateklabs.com](mailto:moscow@anateklabs.com)  
504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - email [spokane@anateklabs.com](mailto:spokane@anateklabs.com)

Sample Location: MW-1-050124  
Lab/Sample Number: MEE0128-01 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
PFPeA	0.00524	ug/L	0.00204	0.0100	5/8/24 23:19	MER	EPA 1633	J
PFPeS	ND	ug/L	0.00108	0.0100	5/8/24 23:19	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFTrDA	ND	ug/L	0.00358	0.0200	5/8/24 23:19	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	5/8/24 23:19	MER	EPA 1633	U
Surrogate: 13C2-4:2FTS EIS	80.2%		25-200		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-6:2FTS EIS	83.5%		24-200		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-8:2FTS EIS	83.3%		5-200		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-PFDA NIS	93.6%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	66.2%		5-171		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	92.4%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	63.8%		5-140		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	73.5%		25-160		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	90.2%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	65.7%		39-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	70.5%		52-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	76.1%		5-174		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	82.0%		55-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	90.8%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	87.3%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	80.4%		41-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	88.0%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	75.2%		20-162		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	88.0%		37-140		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	84.0%		10-190		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	83.6%		42-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	74.3%		32-144		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	76.0%		30-142		5/8/24 23:19	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	84.0%		47-142		5/8/24 23:19	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	88.6%		50-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	59.6%		5-167		5/8/24 23:19	MER	EPA 1633	

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504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - email [spokane@anateklabs.com](mailto:spokane@anateklabs.com)

Sample Location: MW-1-050124  
Lab/Sample Number: MEE0128-01 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: D3-NMeFOSAA EIS	68.6%		45-200		5/8/24 23:19	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	71.2%		5-170		5/8/24 23:19	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	63.2%		10-200		5/8/24 23:19	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	62.0%		5-150		5/8/24 23:19	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	68.0%		5-150		5/8/24 23:19	MER	EPA 1633	



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504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - email spokane@anateklabs.com

Sample Location: MW-2-050124  
Lab/Sample Number: MEE0128-02 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	5/9/24 0:10	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	5/9/24 0:10	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	5/9/24 0:10	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	5/9/24 0:10	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	5/9/24 0:10	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	5/9/24 0:10	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	5/9/24 0:10	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	5/9/24 0:10	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	5/9/24 0:10	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	5/9/24 0:10	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.00178	0.0100	5/9/24 0:10	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.00150	0.0100	5/9/24 0:10	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	5/9/24 0:10	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	5/9/24 0:10	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	5/9/24 0:10	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	5/9/24 0:10	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFBA	ND	ug/L	0.0147	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFBS	0.00300	ug/L	0.000660	0.0100	5/9/24 0:10	MER	EPA 1633	J
PFDA	ND	ug/L	0.00238	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00192	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000920	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFHxA	0.00212	ug/L	0.000840	0.0100	5/9/24 0:10	MER	EPA 1633	J
PFHxS	ND	ug/L	0.00104	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFOA	0.00290	ug/L	0.00162	0.0100	5/9/24 0:10	MER	EPA 1633	J
PFOS	0.00416	ug/L	0.00126	0.0100	5/9/24 0:10	MER	EPA 1633	J
PFOSA	ND	ug/L	0.000900	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFPeA	ND	ug/L	0.00204	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00108	0.0100	5/9/24 0:10	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00358	0.0200	5/9/24 0:10	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	5/9/24 0:10	MER	EPA 1633	U
<hr/>								
Surrogate: 13C2-4:2FTS EIS	94.5%		25-200		5/9/24 0:10	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-6:2FTS EIS	97.2%		24-200		5/9/24 0:10	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-8:2FTS EIS	97.7%		5-200		5/9/24 0:10	MER	EPA 1633	



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Sample Location: MW-2-050124  
Lab/Sample Number: MEE0128-02 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	86.4%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	87.2%		5-171		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	83.6%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	79.8%		5-140		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	85.3%		25-160		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	86.4%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	98.3%		39-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	92.0%		52-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	94.9%		5-174		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	93.6%		55-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	90.4%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	81.4%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	94.8%		41-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	79.1%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	92.8%		20-162		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	92.8%		37-140		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	83.2%		10-190		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	87.6%		42-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	95.2%		32-144		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	84.0%		30-142		5/9/24 0:10	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	101%		47-142		5/9/24 0:10	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	83.5%		50-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	58.0%		5-167		5/9/24 0:10	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	95.6%		45-200		5/9/24 0:10	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	74.8%		5-170		5/9/24 0:10	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	92.0%		10-200		5/9/24 0:10	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	81.6%		5-150		5/9/24 0:10	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	74.4%		5-150		5/9/24 0:10	MER	EPA 1633	

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Sample Location: MW-3d-050124  
Lab/Sample Number: MEE0128-03 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	5/9/24 0:37	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	5/9/24 0:37	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	5/9/24 0:37	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	5/9/24 0:37	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	5/9/24 0:37	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	5/9/24 0:37	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	5/9/24 0:37	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	5/9/24 0:37	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	5/9/24 0:37	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	5/9/24 0:37	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.00178	0.0100	5/9/24 0:37	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.00150	0.0100	5/9/24 0:37	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	5/9/24 0:37	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	5/9/24 0:37	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	5/9/24 0:37	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	5/9/24 0:37	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFBA	ND	ug/L	0.0147	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFBS	ND	ug/L	0.000660	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFDA	ND	ug/L	0.00238	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00192	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000920	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000840	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00104	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFOA	ND	ug/L	0.00162	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFOS	0.00142	ug/L	0.00126	0.0100	5/9/24 0:37	MER	EPA 1633	J
PFOSA	ND	ug/L	0.000900	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFPeA	ND	ug/L	0.00204	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00108	0.0100	5/9/24 0:37	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00358	0.0200	5/9/24 0:37	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	5/9/24 0:37	MER	EPA 1633	U
<hr/>								
Surrogate: 13C2-4:2FTS EIS	91.3%		25-200		5/9/24 0:37	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-6:2FTS EIS	88.3%		24-200		5/9/24 0:37	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-8:2FTS EIS	88.1%		5-200		5/9/24 0:37	MER	EPA 1633	

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Sample Location: MW-3d-050124  
Lab/Sample Number: MEE0128-03 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Groundwater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	88.0%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	80.0%		5-171		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	94.0%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	69.4%		5-140		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	76.3%		25-160		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	89.6%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	82.0%		39-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	80.2%		52-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	85.5%		5-174		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	85.2%		55-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	87.2%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	88.1%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	82.4%		41-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	78.4%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	83.4%		20-162		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	85.6%		37-140		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	85.6%		10-190		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	90.0%		42-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	85.6%		32-144		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	81.2%		30-142		5/9/24 0:37	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	92.8%		47-142		5/9/24 0:37	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	91.1%		50-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	61.2%		5-167		5/9/24 0:37	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	85.0%		45-200		5/9/24 0:37	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	73.6%		5-170		5/9/24 0:37	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	80.0%		10-200		5/9/24 0:37	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	70.8%		5-150		5/9/24 0:37	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	62.8%		5-150		5/9/24 0:37	MER	EPA 1633	

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Sample Location: SW-1-050124  
Lab/Sample Number: MEE0128-04 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Surface Water

Analyte	Result	Units	MDL	PQL	Analized	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	5/9/24 1:03	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	5/9/24 1:03	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	5/9/24 1:03	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	5/9/24 1:03	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	5/9/24 1:03	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	5/9/24 1:03	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	5/9/24 1:03	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	5/9/24 1:03	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	5/9/24 1:03	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	5/9/24 1:03	MER	EPA 1633	U
NETFOSA	ND	ug/L	0.00178	0.0100	5/9/24 1:03	MER	EPA 1633	U
NETFOSE	ND	ug/L	0.00150	0.0100	5/9/24 1:03	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	5/9/24 1:03	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	5/9/24 1:03	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	5/9/24 1:03	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	5/9/24 1:03	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFBA	ND	ug/L	0.0147	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFBS	ND	ug/L	0.000660	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFDA	ND	ug/L	0.00238	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00192	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000920	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000840	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00104	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFOA	ND	ug/L	0.00162	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFOS	ND	ug/L	0.00126	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFOSA	ND	ug/L	0.000900	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFPeA	ND	ug/L	0.00204	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00108	0.0100	5/9/24 1:03	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00358	0.0200	5/9/24 1:03	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	5/9/24 1:03	MER	EPA 1633	U
<hr/>								
Surrogate: 13C2-4:2FTS EIS	83.8%		25-200		5/9/24 1:03	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-6:2FTS EIS	89.6%		24-200		5/9/24 1:03	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-8:2FTS EIS	88.8%		5-200		5/9/24 1:03	MER	EPA 1633	

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Sample Location: SW-1-050124  
Lab/Sample Number: MEE0128-04 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Surface Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	80.8%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	92.0%		5-171		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	91.6%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	77.0%		5-140		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	79.3%		25-160		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	93.0%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	58.8%		39-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	65.4%		52-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	75.0%		5-174		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	85.2%		55-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	92.4%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	86.4%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	82.4%		41-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	81.6%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	78.2%		20-162		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	99.2%		37-140		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	99.2%		10-190		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	82.8%		42-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	73.5%		32-144		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	85.6%		30-142		5/9/24 1:03	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	92.8%		47-142		5/9/24 1:03	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	87.8%		50-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	70.0%		5-167		5/9/24 1:03	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	76.8%		45-200		5/9/24 1:03	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	75.2%		5-170		5/9/24 1:03	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	71.2%		10-200		5/9/24 1:03	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	71.6%		5-150		5/9/24 1:03	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	72.0%		5-150		5/9/24 1:03	MER	EPA 1633	

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Sample Location: SW-2-050124  
Lab/Sample Number: MEE0128-05 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Surface Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	5/9/24 1:29	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	5/9/24 1:29	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	5/9/24 1:29	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	5/9/24 1:29	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	5/9/24 1:29	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	5/9/24 1:29	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	5/9/24 1:29	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	5/9/24 1:29	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	5/9/24 1:29	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	5/9/24 1:29	MER	EPA 1633	U
NETFOSA	ND	ug/L	0.00178	0.0100	5/9/24 1:29	MER	EPA 1633	U
NETFOSE	ND	ug/L	0.00150	0.0100	5/9/24 1:29	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	5/9/24 1:29	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	5/9/24 1:29	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	5/9/24 1:29	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	5/9/24 1:29	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFBA	ND	ug/L	0.0147	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFBS	ND	ug/L	0.000660	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFDA	ND	ug/L	0.00238	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00192	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000920	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000840	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00104	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFOA	ND	ug/L	0.00162	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFOS	ND	ug/L	0.00126	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFOSA	ND	ug/L	0.000900	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFPeA	ND	ug/L	0.00204	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00108	0.0100	5/9/24 1:29	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00358	0.0200	5/9/24 1:29	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	5/9/24 1:29	MER	EPA 1633	U
Surrogate: 13C2-4:2FTS EIS	76.5%		25-200		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C2-6:2FTS EIS	82.2%		24-200		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C2-8:2FTS EIS	82.3%		5-200		5/9/24 1:29	MER	EPA 1633	

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Sample Location: SW-2-050124  
Lab/Sample Number: MEE0128-05 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Surface Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	91.2%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	80.0%		5-171		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	91.6%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	62.8%		5-140		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	74.4%		25-160		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	90.6%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	51.1%		39-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	56.1%		52-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	66.9%		5-174		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	81.2%		55-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	91.2%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	86.8%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	76.4%		41-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	85.6%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	68.0%		20-162		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	76.3%		37-140		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	76.2%		10-190		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	82.0%		42-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	66.4%		32-144		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	84.4%		30-142		5/9/24 1:29	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	82.4%		47-142		5/9/24 1:29	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	87.8%		50-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	63.2%		5-167		5/9/24 1:29	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	71.0%		45-200		5/9/24 1:29	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	71.6%		5-170		5/9/24 1:29	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	64.8%		10-200		5/9/24 1:29	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	60.8%		5-150		5/9/24 1:29	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	74.0%		5-150		5/9/24 1:29	MER	EPA 1633	

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Sample Location: WW-050124  
Lab/Sample Number: MEE0128-06 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Wastewater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00980	0.0250	5/9/24 1:54	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0281	0.125	5/9/24 1:54	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00790	0.0500	5/9/24 1:54	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.111	0.250	5/9/24 1:54	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00765	0.0500	5/9/24 1:54	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.118	0.250	5/9/24 1:54	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.0107	0.0500	5/9/24 1:54	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.0129	0.0250	5/9/24 1:54	MER	EPA 1633	U
ADONA	ND	ug/L	0.00975	0.0250	5/9/24 1:54	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00735	0.0250	5/9/24 1:54	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.00445	0.0250	5/9/24 1:54	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.00375	0.0250	5/9/24 1:54	MER	EPA 1633	U
N-EtFOSSA	0.00580	ug/L	0.00300	0.0250	5/9/24 1:54	MER	EPA 1633	J
NFDHA	ND	ug/L	0.0131	0.0500	5/9/24 1:54	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00310	0.0250	5/9/24 1:54	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00250	0.0250	5/9/24 1:54	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00465	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFBA	ND	ug/L	0.0367	0.0500	5/9/24 1:54	MER	EPA 1633	U
PFBS	0.00446	ug/L	0.00165	0.0250	5/9/24 1:54	MER	EPA 1633	J
PFDA	ND	ug/L	0.00595	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFDoA	ND	ug/L	0.00480	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00265	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFDS	ND	ug/L	0.00230	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00580	0.0500	5/9/24 1:54	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00300	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFHpS	ND	ug/L	0.00230	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFHxA	0.00222	ug/L	0.00210	0.0250	5/9/24 1:54	MER	EPA 1633	J
PFHxS	ND	ug/L	0.00260	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00600	0.0500	5/9/24 1:54	MER	EPA 1633	U
PFMPA	0.00458	ug/L	0.00380	0.0500	5/9/24 1:54	MER	EPA 1633	J
PFNA	ND	ug/L	0.00305	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFNS	ND	ug/L	0.00265	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFOA	ND	ug/L	0.00405	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFOS	ND	ug/L	0.00315	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFOSA	ND	ug/L	0.00225	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFPeA	ND	ug/L	0.00510	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00270	0.0250	5/9/24 1:54	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00775	0.0500	5/9/24 1:54	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00895	0.0500	5/9/24 1:54	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00495	0.0250	5/9/24 1:54	MER	EPA 1633	U
Surrogate: 13C2-4:2FTS EIS	81.2%		25-200		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C2-6:2FTS EIS	109%		24-200		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C2-8:2FTS EIS	106%		5-200		5/9/24 1:54	MER	EPA 1633	



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Sample Location: WW-050124  
Lab/Sample Number: MEE0128-06 Collect Date: 05/01/24 00:00  
Date Received: 05/06/24 10:20 Collected By: Holly  
Matrix: Wastewater

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	95.2%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	59.8%		5-171		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	101%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	38.8%		5-140		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	74.8%		25-160		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	89.0%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	95.3%		39-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	86.9%		52-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	89.6%		5-174		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	85.6%		55-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	102%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	87.7%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	89.2%		41-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	95.2%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	79.6%		20-162		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	89.6%		37-140		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	70.1%		10-190		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	100%		42-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	88.9%		32-144		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	74.4%		30-142		5/9/24 1:54	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	92.0%		47-142		5/9/24 1:54	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	92.0%		50-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	56.0%		5-167		5/9/24 1:54	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	68.8%		45-200		5/9/24 1:54	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	69.6%		5-170		5/9/24 1:54	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	83.4%		10-200		5/9/24 1:54	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	64.0%		5-150		5/9/24 1:54	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	60.4%		5-150		5/9/24 1:54	MER	EPA 1633	

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Authorized Signature,



Justin Doty For Todd Taruscio, Laboratory Manager

J	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Compound was analyzed for but not detected
PQL	Practical Quantitation Limit
ND	Not Detected
MDL	Method Detection Limit
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was spiked or duplicated.

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The results reported related only to the samples indicated.

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## Quality Control Data

### Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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#### Batch: BEE0190 - PFAS 537

##### Blank (BEE0190-BLK1)

Prepared: 05/06/24 14:13- Analyzed: 05/08/24 18:11

PFBA Perfluorobutanoic acid	ND	U	1.00	ug/L
PFPeA Perfluoropentanoic acid	ND	U	0.500	ug/L
PFHxA Perfluorohexanoic acid	ND	U	0.500	ug/L
PFHpA Perfluoroheptanoic acid	ND	U	0.500	ug/L
PFOA Perfluorooctanoic acid	ND	U	0.500	ug/L
PFNA Perfluorononanoic acid	ND	U	0.500	ug/L
PFDA Perfluorodecanoic acid	ND	U	0.500	ug/L
PFUnA Perfluoroundecanoic acid	ND	U	0.500	ug/L
PFDoA Perfluorododecanoic acid	ND	U	0.500	ug/L
PFTDA	ND	U	1.00	ug/L
PFTA Perfluorotetradecanoic acid	ND	U	1.00	ug/L
PFBS Perfluorobutanesulfonic acid	ND	U	0.500	ug/L
PFPeS Perfluoropentanesulfonic acid	ND	U	0.500	ug/L
PFHxS Perfluorohexanesulfonic acid	ND	U	0.500	ug/L
PFHpS Perfluoroheptanesulfonic acid	ND	U	0.500	ug/L
PFOS Perfluorooctanesulfonic acid	ND	U	0.500	ug/L
PFNS	ND	U	0.500	ug/L
PFDS	ND	U	0.500	ug/L
PFDoS	ND	U	0.500	ug/L
4:2FTS 1H,1H,2H,2H-Perfluorohexane sulfonic	ND	U	1.00	ug/L
6:2FTS 1H,1H,2H,2H-Perfluorooctane sulfonic ;	ND	U	1.00	ug/L
8:2FTS 1H,1H,2H,2H-Perfluorodecane sulfonic	ND	U	1.00	ug/L
PFOSA	ND	U	0.500	ug/L
NMeFOSA	ND	U	0.500	ug/L
NEtFOSA	ND	U	0.500	ug/L
NMeFOSAA	ND	U	0.500	ug/L
NEtFOSSA	ND	U	0.500	ug/L
NMeFOSE	ND	U	0.500	ug/L
NEtFOSE	ND	U	0.500	ug/L
HFPO-DA Hexafluoropropylene oxide dimer acic	ND	U	0.500	ug/L
ADONA 4,8-Dioxa-3H-perfluorononanoic acid	ND	U	0.500	ug/L
9Cl-PF3ONS	ND	U	0.500	ug/L
11Cl-PF3OUdS	ND	U	0.500	ug/L
3:3FTCA	ND	U	2.50	ug/L
5:3FTCA	ND	U	5.00	ug/L
7:3FTCA	ND	U	5.00	ug/L
PFEESA Perfluoro(2-ethoxyethane)sulfonic acid	ND	U	1.00	ug/L
PFMPA Perfluoro-3-methoxypropanoic acid	ND	U	1.00	ug/L
PFMBA Perfluoro-4-methoxybutanoic acid	ND	U	1.00	ug/L
NFDHA Nonafluoro-3,6-dioxaheptanoic acid	ND	U	1.00	ug/L

Surrogate: 13C4-PFBA EIS

8.14

ug/L

10.0

81.4

5-174

Surrogate: 13C5-PFPeA EIS

4.14

ug/L

5.00

82.8

20-162

Surrogate: 13C5-PFHxA EIS

2.04

ug/L

2.50

81.6

41-150

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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
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### Batch: BEE0190 - PFAS 537 (Continued)

#### Blank (BEE0190-BLK1)

Prepared: 05/06/24 14:13- Analyzed: 05/08/24 18:11

Surrogate: 13C4-PFHpa EIS	2.06	ug/L	2.50	82.4	55-150
Surrogate: 13C8-PFOA EIS	2.07	ug/L	2.50	82.8	42-150
Surrogate: 13C9-PFNA EIS	1.02	ug/L	1.25	81.6	47-142
Surrogate: 13C6-PFDA EIS	1.00	ug/L	1.25	80.0	37-140
Surrogate: 13C7-PFUnA EIS	0.982	ug/L	1.25	78.6	10-190
Surrogate: 13C2-PFDoA EIS	0.864	ug/L	1.25	69.1	5-171
Surrogate: 13C2-PFTeDA EIS	0.777	ug/L	1.25	62.2	5-140
Surrogate: 13C3-PFBS EIS	1.92	ug/L	2.33	82.4	39-150
Surrogate: 13C3-PFHxS EIS	1.90	ug/L	2.37	80.2	52-150
Surrogate: 13C8-PFOS EIS	2.02	ug/L	2.40	84.3	32-144
Surrogate: 13C2-4:2FTS EIS	3.93	ug/L	4.69	83.8	25-200
Surrogate: 13C2-6:2FTS EIS	3.82	ug/L	4.76	80.3	24-200
Surrogate: 13C2-8:2FTS EIS	3.97	ug/L	4.80	82.7	5-200
Surrogate: 13C8-PFOSA EIS	1.97	ug/L	2.50	78.8	30-142
Surrogate: D3-NMeFOSA EIS	1.55	ug/L	2.50	62.0	5-167
Surrogate: D5-NEtFOSA EIS	1.78	ug/L	2.50	71.2	5-170
Surrogate: D3-NMeFOSAA EIS	4.15	ug/L	5.00	83.0	45-200
Surrogate: D5-NEtFOSAA EIS	4.02	ug/L	5.00	80.4	10-200
Surrogate: D7-NMeFOSE EIS	17.8	ug/L	25.0	71.2	5-150
Surrogate: D9-NEtFOSE EIS	18.6	ug/L	25.0	74.4	5-150
Surrogate: 13C3-HFPO-DA EIS	8.13	ug/L	10.0	81.3	25-160
Surrogate: 13C3-PFBA NIS	5.09	ug/L	5.00	102	50-150
Surrogate: 13C2-PFHxA NIS	2.41	ug/L	2.50	96.4	50-150
Surrogate: 13C4-PFOA NIS	2.46	ug/L	2.50	98.4	50-150
Surrogate: 13C5-PFNA NIS	1.20	ug/L	1.25	96.0	50-150
Surrogate: 13C2-PFDA NIS	1.21	ug/L	1.25	96.8	50-150
Surrogate: 18O2-PFHxS NIS	2.39	ug/L	2.37	101	50-150
Surrogate: 13C4-PFOS NIS	2.25	ug/L	2.40	93.9	50-150

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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BEE0190 - PFAS 537 (Continued)</b>										
<b>LCS (BEE0190-BS1)</b>					Prepared: 05/06/24 14:13- Analyzed: 05/08/24 18:36					
PFBA Perfluorobutanoic acid	8.85		1.00	ug/L	10.0		88.5	50-150		
PFPeA Perfluoropentanoic acid	4.33		0.500	ug/L	5.00		86.6	50-150		
PFHxA Perfluorohexanoic acid	2.12		0.500	ug/L	2.50		84.8	50-150		
PFHpA Perfluoroheptanoic acid	2.15		0.500	ug/L	2.50		86.0	50-150		
PFOA Perfluorooctanoic acid	2.13		0.500	ug/L	2.50		85.2	50-150		
PFNA Perfluorononanoic acid	2.17		0.500	ug/L	2.50		86.8	50-150		
PFDA Perfluorodecanoic acid	1.83		0.500	ug/L	2.50		73.2	50-150		
PFUnA Perfluoroundecanoic acid	1.80		0.500	ug/L	2.50		72.0	50-150		
PFDoA Perfluorododecanoic acid	1.89		0.500	ug/L	2.50		75.6	50-150		
PFTTrDA	1.74		1.00	ug/L	2.50		69.6	50-150		
PFTA Perfluorotetradecanoic acid	2.34		1.00	ug/L	2.50		93.6	50-150		
PFBS Perfluorobutanesulfonic acid	1.80		0.500	ug/L	2.21		81.4	50-150		
PFPeS Perfluoropentanesulfonic acid	2.07		0.500	ug/L	2.35		88.1	50-150		
PFHxS Perfluorohexanesulfonic acid	2.04		0.500	ug/L	2.29		89.2	50-150		
PFHpS Perfluoroheptanesulfonic acid	2.12		0.500	ug/L	2.39		88.8	50-150		
PFOS Perfluorooctanesulfonic acid	2.03		0.500	ug/L	2.33		87.3	50-150		
PFNS	2.08		0.500	ug/L	2.40		86.7	50-150		
PFDS	2.15		0.500	ug/L	2.41		89.1	50-150		
PFDoS	2.09		0.500	ug/L	2.43		86.2	50-150		
4:2FTS 1H,1H,2H,2H-Perfluorohexane sulfonic	8.64		1.00	ug/L	9.38		92.2	50-150		
6:2FTS 1H,1H,2H,2H-Perfluorooctane sulfonic	8.62		1.00	ug/L	9.50		90.7	50-150		
8:2FTS 1H,1H,2H,2H-Perfluorodecane sulfonic	8.97		1.00	ug/L	9.60		93.4	50-150		
PFOSA	2.39		0.500	ug/L	2.50		95.6	50-150		
NMeFOSA	2.36		0.500	ug/L	2.50		94.4	50-150		
NEtFOSA	1.78		0.500	ug/L	2.50		71.2	50-150		
NMeFOSAA	2.29		0.500	ug/L	2.50		91.6	50-150		
NEtFOSSA	2.35		0.500	ug/L	2.50		94.0	50-150		
NMeFOSE	2.84		0.500	ug/L	2.50		114	50-150		
NEtFOSE	2.46		0.500	ug/L	2.50		98.4	50-150		
HFPO-DA Hexafluoropropylene oxide dimer acid	4.92		0.500	ug/L	5.00		98.4	50-150		
ADONA 4,8-Dioxo-3H-perfluorononanoic acid	4.82		0.500	ug/L	4.73		102	50-150		
9CI-PF3ONS	4.60		0.500	ug/L	4.68		98.4	50-150		
11CI-PF3OUdS	4.52		0.500	ug/L	4.73		95.7	50-150		
3:3FTCA	10.8		2.50	ug/L	10.0		108	50-150		
5:3FTCA	51.3		5.00	ug/L	50.0		103	50-150		
7:3FTCA	57.2		5.00	ug/L	50.0		114	50-150		
PFEESA Perfluoro(2-ethoxyethane)sulfonic acid	4.02		1.00	ug/L	4.45		90.3	50-150		
PFMPA Perfluoro-3-methoxypropanoic acid	4.91		1.00	ug/L	5.00		98.2	50-150		
PFMBA Perfluoro-4-methoxybutanoic acid	4.82		1.00	ug/L	5.00		96.4	50-150		
NFDHA Nonafluoro-3,6-dioxahexanoic acid	4.52		1.00	ug/L	5.00		90.4	50-150		
Surrogate: 13C4-PFBA EIS			8.27	ug/L	10.0		82.7	5-174		
Surrogate: 13C5-PFPeA EIS			4.06	ug/L	5.00		81.2	20-162		
Surrogate: 13C5-PFHxA EIS			2.11	ug/L	2.50		84.4	41-150		
Surrogate: 13C4-PFHpA EIS			2.04	ug/L	2.50		81.6	55-150		
Surrogate: 13C8-PFOA EIS			2.33	ug/L	2.50		93.2	42-150		
Surrogate: 13C9-PFNA EIS			1.18	ug/L	1.25		94.4	47-142		

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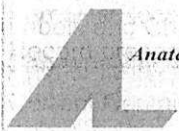
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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BEE0190 - PFAS 537 (Continued)</b>										
<b>LCS (BEE0190-BS1)</b>					Prepared: 05/06/24 14:13- Analyzed: 05/08/24 18:36					
Surrogate: 13C6-PFDA EIS			1.14	ug/L	1.25		91.2	37-140		
Surrogate: 13C7-PFUnA EIS			1.11	ug/L	1.25		88.8	10-190		
Surrogate: 13C2-PFDoA EIS			1.09	ug/L	1.25		87.2	5-171		
Surrogate: 13C2-PFTeDA EIS			0.974	ug/L	1.25		77.9	5-140		
Surrogate: 13C3-PFBS EIS			2.10	ug/L	2.33		90.1	39-150		
Surrogate: 13C3-PFHxS EIS			2.00	ug/L	2.37		84.4	52-150		
Surrogate: 13C8-PFOS EIS			2.07	ug/L	2.40		86.4	32-144		
Surrogate: 13C2-4:2FTS EIS			4.08	ug/L	4.69		87.0	25-200		
Surrogate: 13C2-6:2FTS EIS			4.12	ug/L	4.76		86.6	24-200		
Surrogate: 13C2-8:2FTS EIS			4.12	ug/L	4.80		85.8	5-200		
Surrogate: 13C8-PFOSA EIS			1.94	ug/L	2.50		77.6	30-142		
Surrogate: D3-NMeFOSA EIS			1.57	ug/L	2.50		62.8	5-167		
Surrogate: D5-NEtFOSA EIS			1.93	ug/L	2.50		77.2	5-170		
Surrogate: D3-NMeFOSAA EIS			4.40	ug/L	5.00		88.0	45-200		
Surrogate: D5-NEtFOSAA EIS			4.14	ug/L	5.00		82.8	10-200		
Surrogate: D7-NMeFOSE EIS			17.4	ug/L	25.0		69.6	5-150		
Surrogate: D9-NEtFOSE EIS			18.8	ug/L	25.0		75.2	5-150		
Surrogate: 13C3-HFPO-DA EIS			7.39	ug/L	10.0		73.9	25-160		
Surrogate: 13C3-PFBA NIS			4.59	ug/L	5.00		91.8	50-150		
Surrogate: 13C2-PFHxA NIS			2.29	ug/L	2.50		91.6	50-150		
Surrogate: 13C4-PFOA NIS			2.15	ug/L	2.50		86.0	50-150		
Surrogate: 13C5-PFNA NIS			1.07	ug/L	1.25		85.6	50-150		
Surrogate: 13C2-PFDA NIS			1.11	ug/L	1.25		88.8	50-150		
Surrogate: 18O2-PFHxS NIS			2.05	ug/L	2.37		86.5	50-150		
Surrogate: 13C4-PFOS NIS			2.04	ug/L	2.40		85.2	50-150		





Anatek Labs, Inc.

## Sample Receipt and Preservation Form

Client Name: GSITAT: Normal RUSH: \_\_\_\_\_ daysSamples Received From: FedEx UPS USPS Client Courier Other: \_\_\_\_\_Custody Seal on Cooler/Box: Yes No Custody Seals Intact: Yes No N/ANumber of Coolers/Boxes: 1 Type of Ice: Wet Ice Ice Packs Dry Ice NonePacking Material: Bubble Wrap Bags Foam/Peanuts Paper None Other: \_\_\_\_\_Cooler Temp As Read (°C): 5.4 Cooler Temp Corrected (°C): \_\_\_\_\_ Thermometer Used: IR-4 IR-5

Client Name: \_\_\_\_\_

Comments:

Samples Received Intact? Yes No N/A  
Chain of Custody Present/Complete? Yes No N/A  
Labels and Chains Agree? Yes No N/A  
Samples Received Within Hold Time? Yes No N/A  
Correct Containers Received? Yes No N/A  
Anatek Bottles Used? Yes No Unknown

Total Number of Sample Bottles Received: 18Samples Properly Preserved? Yes No N/A

If No, record preservation and pH-after details

VOC Vials Free of Headspace (<6mm)? Yes No N/AVOC Trip Blanks Present? Yes No N/A

Chain of Custody \_\_\_\_\_

Bottles and \_\_\_\_\_

Record preservatives (and lot numbers, if known) for containers below:

P 500 1633x12P 125 1633x6

Samples Properly Preserved

Cooler Temp As Read (°C)

If No, record pre

VOC Vials Free of Headspace

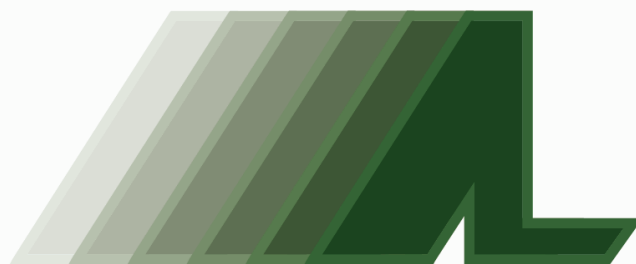
Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

Received/Inspected By: TBDate/Time: 5/6/24 10:20

Form F19.01 - Eff 1 Dec 2022

Page 1 of 1





**ANATEK LABS**

Analytical Results Report For:

**GSI Water Solutions, Inc.**

Project Number:

**Santiam Canyon 00464.020.**

Anatek Work Order:

**MEF0657**

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**Client:** GSI Water Solutions, Inc.  
**Address:** 650 NE Holladay Street, Suite 900  
Portland, OR 97232  
**Attn:** Erik Hedberg

**Work Order:** MEF0657  
**Project:** Santiam Canyon 00464.020.  
**Reported:** 7/10/2024 11:10

## Analytical Results Report

**Sample Location:** MW-35-062024  
**Lab/Sample Number:** MEF0657-01 **Collect Date:** 06/20/24 00:00  
**Date Received:** 06/21/24 11:11 **Collected By:**  
**Matrix:** Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00391	0.00998	6/28/24 10:35	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0499	6/28/24 10:35	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00315	0.0200	6/28/24 10:35	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0444	0.0998	6/28/24 10:35	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	6/28/24 10:35	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0473	0.0998	6/28/24 10:35	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00427	0.0200	6/28/24 10:35	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00513	0.00998	6/28/24 10:35	MER	EPA 1633	U
ADONA	ND	ug/L	0.00389	0.00998	6/28/24 10:35	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.00998	6/28/24 10:35	MER	EPA 1633	U
NETFOSA	ND	ug/L	0.00178	0.00998	6/28/24 10:35	MER	EPA 1633	U
NETFOSE	ND	ug/L	0.00150	0.00998	6/28/24 10:35	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.00998	6/28/24 10:35	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00521	0.0200	6/28/24 10:35	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.00998	6/28/24 10:35	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.000998	0.00998	6/28/24 10:35	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFBA	ND	ug/L	0.0200	0.0399	6/28/24 10:35	MER	EPA 1633	U
PFBS	0.00198	ug/L	0.000659	0.00998	6/28/24 10:35	MER	EPA 1633	J
PFDA	ND	ug/L	0.00238	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFDoA	ND	ug/L	0.00192	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFDS	ND	ug/L	0.000919	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	6/28/24 10:35	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000919	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000839	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00104	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	6/28/24 10:35	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	6/28/24 10:35	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFOA	ND	ug/L	0.00162	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFOS	0.00413	ug/L	0.00126	0.00998	6/28/24 10:35	MER	EPA 1633	J
PFOSA	ND	ug/L	0.000899	0.00998	6/28/24 10:35	MER	EPA 1633	U

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Sample Location: MW-35-062024  
Lab/Sample Number: MEF0657-01 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
PFPeA	ND	ug/L	0.00204	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFPeS	ND	ug/L	0.00108	0.00998	6/28/24 10:35	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	6/28/24 10:35	MER	EPA 1633	U
PFTTrDA	ND	ug/L	0.00357	0.0200	6/28/24 10:35	MER	EPA 1633	U
PFUUnA	ND	ug/L	0.00198	0.00998	6/28/24 10:35	MER	EPA 1633	U
Surrogate: 13C2-4:2FTS EIS	137%		25-200		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-6:2FTS EIS	141%		24-200		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-8:2FTS EIS	141%		5-200		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-PFDA NIS	88.0%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	107%		5-171		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	86.0%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	80.0%		5-140		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	157%		25-160		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	85.6%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	123%		39-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	126%		52-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	128%		5-174		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	127%		55-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	90.0%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	83.9%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	132%		41-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	92.8%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	124%		20-162		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	114%		37-140		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C7-PFUUnA EIS	136%		10-190		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	120%		42-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	125%		32-144		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	119%		30-142		6/28/24 10:35	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	116%		47-142		6/28/24 10:35	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	89.9%		50-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	80.0%		5-167		6/28/24 10:35	MER	EPA 1633	

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Sample Location: MW-35-062024  
Lab/Sample Number: MEF0657-01      Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11      Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: D3-NMeFOSAA EIS	127%		45-200		6/28/24 10:35	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	75.6%		5-170		6/28/24 10:35	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	127%		10-200		6/28/24 10:35	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	94.8%		5-150		6/28/24 10:35	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	95.2%		5-150		6/28/24 10:35	MER	EPA 1633	

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Sample Location: MW-4-062024  
Lab/Sample Number: MEF0657-02 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00176	0.00449	6/28/24 11:00	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.00504	0.0225	6/28/24 11:00	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00142	0.00898	6/28/24 11:00	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0200	0.0449	6/28/24 11:00	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00137	0.00898	6/28/24 11:00	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0213	0.0449	6/28/24 11:00	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00192	0.00898	6/28/24 11:00	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00231	0.00449	6/28/24 11:00	MER	EPA 1633	U
ADONA	ND	ug/L	0.00175	0.00449	6/28/24 11:00	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00132	0.00449	6/28/24 11:00	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.000799	0.00449	6/28/24 11:00	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.000674	0.00449	6/28/24 11:00	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.000539	0.00449	6/28/24 11:00	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00234	0.00898	6/28/24 11:00	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.000557	0.00449	6/28/24 11:00	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.000449	0.00449	6/28/24 11:00	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.000835	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFBA	ND	ug/L	0.00898	0.0180	6/28/24 11:00	MER	EPA 1633	U
PFBS	ND	ug/L	0.000296	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFDA	ND	ug/L	0.00107	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFDaA	ND	ug/L	0.000862	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFDoS	ND	ug/L	0.000476	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFDS	ND	ug/L	0.000413	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00104	0.00898	6/28/24 11:00	MER	EPA 1633	U
PFHpA	ND	ug/L	0.000539	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000413	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000377	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFHxS	ND	ug/L	0.000467	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00108	0.00898	6/28/24 11:00	MER	EPA 1633	U
PFMPA	ND	ug/L	0.000683	0.00898	6/28/24 11:00	MER	EPA 1633	U
PFNA	ND	ug/L	0.000548	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFNS	ND	ug/L	0.000476	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFOA	ND	ug/L	0.000728	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFOS	ND	ug/L	0.000566	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFOSA	ND	ug/L	0.000404	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFPeA	ND	ug/L	0.000916	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFPeS	ND	ug/L	0.000485	0.00449	6/28/24 11:00	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00139	0.00898	6/28/24 11:00	MER	EPA 1633	U
PFTrDA	ND	ug/L	0.00161	0.00898	6/28/24 11:00	MER	EPA 1633	U
PFUnA	ND	ug/L	0.000889	0.00449	6/28/24 11:00	MER	EPA 1633	U
Surrogate: 13C2-4:2FTS EIS	109%		25-200		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C2-6:2FTS EIS	115%		24-200		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C2-8:2FTS EIS	118%		5-200		6/28/24 11:00	MER	EPA 1633	

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Sample Location: MW-4-062024  
Lab/Sample Number: MEF0657-02 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	88.8%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	96.8%		5-171		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	96.4%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	79.1%		5-140		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	114%		25-160		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	98.4%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	102%		39-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	103%		52-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	104%		5-174		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	102%		55-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	94.4%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	91.9%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	104%		41-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	96.0%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	104%		20-162		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	112%		37-140		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	107%		10-190		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	107%		42-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	99.8%		32-144		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	97.6%		30-142		6/28/24 11:00	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	92.8%		47-142		6/28/24 11:00	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	99.2%		50-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	67.2%		5-167		6/28/24 11:00	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	105%		45-200		6/28/24 11:00	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	70.0%		5-170		6/28/24 11:00	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	103%		10-200		6/28/24 11:00	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	68.4%		5-150		6/28/24 11:00	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	72.0%		5-150		6/28/24 11:00	MER	EPA 1633	

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Sample Location: MW2-062024  
Lab/Sample Number: MEF0657-03 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00392	0.0100	6/28/24 11:26	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0112	0.0500	6/28/24 11:26	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00316	0.0200	6/28/24 11:26	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0445	0.100	6/28/24 11:26	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00306	0.0200	6/28/24 11:26	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0474	0.100	6/28/24 11:26	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00428	0.0200	6/28/24 11:26	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00514	0.0100	6/28/24 11:26	MER	EPA 1633	U
ADONA	ND	ug/L	0.00390	0.0100	6/28/24 11:26	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00294	0.0100	6/28/24 11:26	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.00178	0.0100	6/28/24 11:26	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.00150	0.0100	6/28/24 11:26	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00120	0.0100	6/28/24 11:26	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00522	0.0200	6/28/24 11:26	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00124	0.0100	6/28/24 11:26	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00100	0.0100	6/28/24 11:26	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00186	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFBA	ND	ug/L	0.0200	0.0400	6/28/24 11:26	MER	EPA 1633	U
PFBS	ND	ug/L	0.000660	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFDA	ND	ug/L	0.00238	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00192	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00106	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFDS	ND	ug/L	0.000920	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00232	0.0200	6/28/24 11:26	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00120	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFHpS	ND	ug/L	0.000920	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFHxA	ND	ug/L	0.000840	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00104	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00240	0.0200	6/28/24 11:26	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00152	0.0200	6/28/24 11:26	MER	EPA 1633	U
PFNA	ND	ug/L	0.00122	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFNS	ND	ug/L	0.00106	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFOA	ND	ug/L	0.00162	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFOS	ND	ug/L	0.00126	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFOSA	ND	ug/L	0.000900	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFPeA	0.00238	ug/L	0.00204	0.0100	6/28/24 11:26	MER	EPA 1633	J
PFPeS	ND	ug/L	0.00108	0.0100	6/28/24 11:26	MER	EPA 1633	U
PFTeDA	ND	ug/L	0.00310	0.0200	6/28/24 11:26	MER	EPA 1633	U
PFTrDA	ND	ug/L	0.00358	0.0200	6/28/24 11:26	MER	EPA 1633	U
PFUnA	ND	ug/L	0.00198	0.0100	6/28/24 11:26	MER	EPA 1633	U
<hr/>								
Surrogate: 13C2-4:2FTS EIS	139%		25-200		6/28/24 11:26	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-6:2FTS EIS	140%		24-200		6/28/24 11:26	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-8:2FTS EIS	138%		5-200		6/28/24 11:26	MER	EPA 1633	

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Sample Location: MW2-062024  
Lab/Sample Number: MEF0657-03 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	82.4%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	112%		5-171		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	85.2%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	97.6%		5-140		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	144%		25-160		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	85.6%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	122%		39-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	125%		52-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	130%		5-174		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	135%		55-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	94.8%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	86.4%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	122%		41-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	83.2%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	123%		20-162		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	125%		37-140		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	140%		10-190		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	121%		42-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	119%		32-144		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	119%		30-142		6/28/24 11:26	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	128%		47-142		6/28/24 11:26	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	88.6%		50-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	81.2%		5-167		6/28/24 11:26	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	120%		45-200		6/28/24 11:26	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	81.2%		5-170		6/28/24 11:26	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	122%		10-200		6/28/24 11:26	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	88.0%		5-150		6/28/24 11:26	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	82.8%		5-150		6/28/24 11:26	MER	EPA 1633	



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Sample Location: MW3-062024  
Lab/Sample Number: MEF0657-04 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles</b>								
11CI-PF3OUdS	ND	ug/L	0.00486	0.0124	6/28/24 11:52	MER	EPA 1633	U
3:3FTCA	ND	ug/L	0.0139	0.0620	6/28/24 11:52	MER	EPA 1633	U
4:2FTS	ND	ug/L	0.00392	0.0248	6/28/24 11:52	MER	EPA 1633	U
5:3FTCA	ND	ug/L	0.0551	0.124	6/28/24 11:52	MER	EPA 1633	U
6:2FTS	ND	ug/L	0.00379	0.0248	6/28/24 11:52	MER	EPA 1633	U
7:3FTCA	ND	ug/L	0.0587	0.124	6/28/24 11:52	MER	EPA 1633	U
8:2FTS	ND	ug/L	0.00530	0.0248	6/28/24 11:52	MER	EPA 1633	U
9CI-PF3ONS	ND	ug/L	0.00637	0.0124	6/28/24 11:52	MER	EPA 1633	U
ADONA	ND	ug/L	0.00483	0.0124	6/28/24 11:52	MER	EPA 1633	U
HFPO-DA	ND	ug/L	0.00364	0.0124	6/28/24 11:52	MER	EPA 1633	U
NEtFOSA	ND	ug/L	0.00221	0.0124	6/28/24 11:52	MER	EPA 1633	U
NEtFOSE	ND	ug/L	0.00186	0.0124	6/28/24 11:52	MER	EPA 1633	U
N-EtFOSSA	ND	ug/L	0.00149	0.0124	6/28/24 11:52	MER	EPA 1633	U
NFDHA	ND	ug/L	0.00647	0.0248	6/28/24 11:52	MER	EPA 1633	U
NMeFOSA	ND	ug/L	0.00154	0.0124	6/28/24 11:52	MER	EPA 1633	U
N-MeFOSAA	ND	ug/L	0.00124	0.0124	6/28/24 11:52	MER	EPA 1633	U
NMeFOSE	ND	ug/L	0.00231	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFBA	ND	ug/L	0.0248	0.0496	6/28/24 11:52	MER	EPA 1633	U
PFBS	ND	ug/L	0.000818	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFDA	ND	ug/L	0.00295	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFDaA	ND	ug/L	0.00238	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFDoS	ND	ug/L	0.00131	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFDS	ND	ug/L	0.00114	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFEESA	ND	ug/L	0.00288	0.0248	6/28/24 11:52	MER	EPA 1633	U
PFHpA	ND	ug/L	0.00149	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFHpS	ND	ug/L	0.00114	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFHxA	ND	ug/L	0.00104	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFHxS	ND	ug/L	0.00129	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFMBA	ND	ug/L	0.00297	0.0248	6/28/24 11:52	MER	EPA 1633	U
PFMPA	ND	ug/L	0.00188	0.0248	6/28/24 11:52	MER	EPA 1633	U
PFNA	ND	ug/L	0.00151	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFNS	ND	ug/L	0.00131	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFOA	ND	ug/L	0.00201	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFOS	ND	ug/L	0.00156	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFOSA	ND	ug/L	0.00112	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFPeA	0.00560	ug/L	0.00253	0.0124	6/28/24 11:52	MER	EPA 1633	J
PFPeS	ND	ug/L	0.00134	0.0124	6/28/24 11:52	MER	EPA 1633	U
PFTeDA	0.0106	ug/L	0.00384	0.0248	6/28/24 11:52	MER	EPA 1633	J
PFTrDA	0.0146	ug/L	0.00444	0.0248	6/28/24 11:52	MER	EPA 1633	J
PFUnA	ND	ug/L	0.00245	0.0124	6/28/24 11:52	MER	EPA 1633	U
<hr/>								
Surrogate: 13C2-4:2FTS EIS	125%		25-200		6/28/24 11:52	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-6:2FTS EIS	126%		24-200		6/28/24 11:52	MER	EPA 1633	
<hr/>								
Surrogate: 13C2-8:2FTS EIS	124%		5-200		6/28/24 11:52	MER	EPA 1633	

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Sample Location: MW3-062024  
Lab/Sample Number: MEF0657-04 Collect Date: 06/20/24 00:00  
Date Received: 06/21/24 11:11 Collected By:  
Matrix: Water

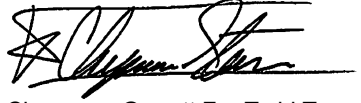
Analyte	Result	Units	MDL	PQL	Analyzed	Analyst	Method	Qualifier
<b>Semivolatiles (Continued)</b>								
Surrogate: 13C2-PFDA NIS	108%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C2-PFDoA EIS	84.0%		5-171		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C2-PFHxA NIS	106%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C2-PFTeDA EIS	67.4%		5-140		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C3-HFPO-DA EIS	90.8%		25-160		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C3-PFBA NIS	101%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C3-PFBS EIS	109%		39-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C3-PFHxS EIS	111%		52-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C4-PFBA EIS	110%		5-174		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C4-PFHpA EIS	106%		55-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C4-PFOA NIS	106%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C4-PFOS NIS	102%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C5-PFHxA EIS	99.6%		41-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C5-PFNA NIS	104%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C5-PFPeA EIS	102%		20-162		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C6-PFDA EIS	99.2%		37-140		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C7-PFUnA EIS	106%		10-190		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C8-PFOA EIS	106%		42-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C8-PFOS EIS	105%		32-144		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C8-PFOSA EIS	104%		30-142		6/28/24 11:52	MER	EPA 1633	
Surrogate: 13C9-PFNA EIS	110%		47-142		6/28/24 11:52	MER	EPA 1633	
Surrogate: 18O2-PFHxS NIS	102%		50-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: D3-NMeFOSA EIS	60.4%		5-167		6/28/24 11:52	MER	EPA 1633	
Surrogate: D3-NMeFOSAA EIS	104%		45-200		6/28/24 11:52	MER	EPA 1633	
Surrogate: D5-NEtFOSA EIS	67.6%		5-170		6/28/24 11:52	MER	EPA 1633	
Surrogate: D5-NEtFOSAA EIS	100%		10-200		6/28/24 11:52	MER	EPA 1633	
Surrogate: D7-NMeFOSE EIS	64.0%		5-150		6/28/24 11:52	MER	EPA 1633	
Surrogate: D9-NEtFOSE EIS	56.8%		5-150		6/28/24 11:52	MER	EPA 1633	

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Authorized Signature,



Cheyenne Garrett For Todd Taruscio, Laboratory Manager

J	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Compound was analyzed for but not detected
PQL	Practical Quantitation Limit
ND	Not Detected
MDL	Method Detection Limit
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was spiked or duplicated.

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The results reported related only to the samples indicated.

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## Quality Control Data

### Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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#### Batch: BEF1013 - PFAS 537

##### Blank (BEF1013-BLK1)

Prepared: 06/24/24 15:24- Analyzed: 06/28/24 05:52

PFBA Perfluorobutanoic acid	ND	U	0.0400	ug/L
PFPeA Perfluoropentanoic acid	ND	U	0.0100	ug/L
PFHxA Perfluorohexanoic acid	ND	U	0.0100	ug/L
PFHpA Perfluoroheptanoic acid	ND	U	0.0100	ug/L
PFOA Perfluorooctanoic acid	ND	U	0.0100	ug/L
PFNA Perfluorononanoic acid	ND	U	0.0100	ug/L
PFDA Perfluorodecanoic acid	ND	U	0.0100	ug/L
PFUnA Perfluoroundecanoic acid	ND	U	0.0100	ug/L
PFDoA Perfluorododecanoic acid	ND	U	0.0100	ug/L
PFTDA	ND	U	0.0200	ug/L
PFTA Perfluorotetradecanoic acid	ND	U	0.0200	ug/L
PFBS Perfluorobutanesulfonic acid	ND	U	0.0100	ug/L
PFPeS Perfluoropentanesulfonic acid	ND	U	0.0100	ug/L
PFHxS Perfluorohexanesulfonic acid	ND	U	0.0100	ug/L
PFHpS Perfluoroheptanesulfonic acid	ND	U	0.0100	ug/L
PFOS Perfluorooctanesulfonic acid	ND	U	0.0100	ug/L
PFNS	ND	U	0.0100	ug/L
PFDS	ND	U	0.0100	ug/L
PFDoS	ND	U	0.0100	ug/L
4:2FTS 1H,1H,2H,2H-Perfluorohexane sulfonic	ND	U	0.0200	ug/L
6:2FTS 1H,1H,2H,2H-Perfluorooctane sulfonic ;	ND	U	0.0200	ug/L
8:2FTS 1H,1H,2H,2H-Perfluorodecane sulfonic	ND	U	0.0200	ug/L
PFOSA	ND	U	0.0100	ug/L
NMeFOSA	ND	U	0.0100	ug/L
NEtFOSA	ND	U	0.0100	ug/L
NMeFOSAA	ND	U	0.0100	ug/L
NEtFOSSA	ND	U	0.0100	ug/L
NMeFOSE	ND	U	0.0100	ug/L
NEtFOSE	ND	U	0.0100	ug/L
HFPO-DA Hexafluoropropylene oxide dimer acic	ND	U	0.0100	ug/L
ADONA 4,8-Dioxa-3H-perfluorononanoic acid	ND	U	0.0100	ug/L
9Cl-PF3ONS	ND	U	0.0100	ug/L
11Cl-PF3OUdS	ND	U	0.0100	ug/L
3:3FTCA	ND	U	0.0500	ug/L
5:3FTCA	ND	U	0.100	ug/L
7:3FTCA	ND	U	0.100	ug/L
PFEESA Perfluoro(2-ethoxyethane)sulfonic acid	ND	U	0.0200	ug/L
PFMPA Perfluoro-3-methoxypropanoic acid	ND	U	0.0200	ug/L
PFMBA Perfluoro-4-methoxybutanoic acid	ND	U	0.0200	ug/L
NFDHA Nonafluoro-3,6-dioxaheptanoic acid	ND	U	0.0200	ug/L

Surrogate: 13C4-PFBA EIS	0.232	ug/L	0.200	116	5-174
Surrogate: 13C5-PFPeA EIS	0.114	ug/L	0.100	114	20-162
Surrogate: 13C5-PFHxA EIS	0.0640	ug/L	0.0500	128	41-150

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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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### Batch: BEF1013 - PFAS 537 (Continued)

#### Blank (BEF1013-BLK1)

Prepared: 06/24/24 15:24- Analyzed: 06/28/24 05:52

Surrogate: 13C4-PFHpa EIS	0.0612	ug/L	0.0500	122	55-150
Surrogate: 13C8-PFOA EIS	0.0618	ug/L	0.0500	124	42-150
Surrogate: 13C9-PFNA EIS	0.0284	ug/L	0.0250	114	47-142
Surrogate: 13C6-PFDA EIS	0.0266	ug/L	0.0250	106	37-140
Surrogate: 13C7-PFUnA EIS	0.0316	ug/L	0.0250	126	10-190
Surrogate: 13C2-PFDoA EIS	0.0270	ug/L	0.0250	108	5-171
Surrogate: 13C2-PFTeDA EIS	0.0208	ug/L	0.0250	83.2	5-140
Surrogate: 13C3-PFBS EIS	0.0544	ug/L	0.0466	117	39-150
Surrogate: 13C3-PFHxS EIS	0.0562	ug/L	0.0474	119	52-150
Surrogate: 13C8-PFOS EIS	0.0556	ug/L	0.0479	116	32-144
Surrogate: 13C2-4:2FTS EIS	0.131	ug/L	0.0938	139	25-200
Surrogate: 13C2-6:2FTS EIS	0.127	ug/L	0.0951	133	24-200
Surrogate: 13C2-8:2FTS EIS	0.128	ug/L	0.0960	133	5-200
Surrogate: 13C8-PFOSA EIS	0.0546	ug/L	0.0500	109	30-142
Surrogate: D3-NMeFOSA EIS	0.0392	ug/L	0.0500	78.4	5-167
Surrogate: D5-NEtFOSA EIS	0.0382	ug/L	0.0500	76.4	5-170
Surrogate: D3-NMeFOSAA EIS	0.121	ug/L	0.100	121	45-200
Surrogate: D5-NEtFOSAA EIS	0.121	ug/L	0.100	121	10-200
Surrogate: D7-NMeFOSE EIS	0.464	ug/L	0.500	92.8	5-150
Surrogate: D9-NEtFOSE EIS	0.500	ug/L	0.500	100	5-150
Surrogate: 13C3-HFPO-DA EIS	0.236	ug/L	0.200	118	25-160
Surrogate: 13C3-PFBA NIS	0.0962	ug/L	0.100	96.2	50-150
Surrogate: 13C2-PFHxA NIS	0.0458	ug/L	0.0500	91.6	50-150
Surrogate: 13C4-PFOA NIS	0.0486	ug/L	0.0500	97.2	50-150
Surrogate: 13C5-PFNA NIS	0.0248	ug/L	0.0250	99.2	50-150
Surrogate: 13C2-PFDA NIS	0.0240	ug/L	0.0250	96.0	50-150
Surrogate: 18O2-PFHxS NIS	0.0470	ug/L	0.0474	99.2	50-150
Surrogate: 13C4-PFOS NIS	0.0450	ug/L	0.0479	93.9	50-150

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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
<b>Batch: BEF1013 - PFAS 537 (Continued)</b>										
<b>LCS (BEF1013-BS1)</b>					Prepared: 06/24/24 15:24- Analyzed: 06/28/24 06:18					
PFBA Perfluorobutanoic acid	0.199		0.0400	ug/L	0.200		99.6	50-150		
PFPeA Perfluoropentanoic acid	0.103		0.0100	ug/L	0.100		103	50-150		
PFHxA Perfluorohexanoic acid	0.0456		0.0100	ug/L	0.0500		91.2	50-150		
PFHpA Perfluoroheptanoic acid	0.0464		0.0100	ug/L	0.0500		92.8	50-150		
PFOA Perfluorooctanoic acid	0.0474		0.0100	ug/L	0.0500		94.8	50-150		
PFNA Perfluorononanoic acid	0.0470		0.0100	ug/L	0.0500		94.0	50-150		
PFDA Perfluorodecanoic acid	0.0550		0.0100	ug/L	0.0500		110	50-150		
PFUnA Perfluoroundecanoic acid	0.0452		0.0100	ug/L	0.0500		90.4	50-150		
PFDoA Perfluorododecanoic acid	0.0464		0.0100	ug/L	0.0500		92.8	50-150		
PFTTrDA	0.0542		0.0200	ug/L	0.0500		108	50-150		
PFTA Perfluorotetradecanoic acid	0.0604		0.0200	ug/L	0.0500		121	50-150		
PFBS Perfluorobutanesulfonic acid	0.0406		0.0100	ug/L	0.0443		91.8	50-150		
PFPeS Perfluoropentanesulfonic acid	0.0414		0.0100	ug/L	0.0470		88.1	50-150		
PFHxS Perfluorohexanesulfonic acid	0.0406		0.0100	ug/L	0.0458		88.7	50-150		
PFHpS Perfluoroheptanesulfonic acid	0.0508		0.0100	ug/L	0.0478		106	50-150		
PFOS Perfluorooctanesulfonic acid	0.0470		0.0100	ug/L	0.0465		101	50-150		
PFNS	0.0514		0.0100	ug/L	0.0480		107	50-150		
PFDS	0.0476		0.0100	ug/L	0.0483		98.7	50-150		
PFDoS	0.0384		0.0100	ug/L	0.0485		79.2	50-150		
4:2FTS 1H,1H,2H,2H-Perfluorohexane sulfonic	0.189		0.0200	ug/L	0.188		101	50-150		
6:2FTS 1H,1H,2H,2H-Perfluorooctane sulfonic	0.194		0.0200	ug/L	0.190		102	50-150		
8:2FTS 1H,1H,2H,2H-Perfluorodecane sulfonic	0.218		0.0200	ug/L	0.192		114	50-150		
PFOSA	0.0476		0.0100	ug/L	0.0500		95.2	50-150		
NMeFOSA	0.0540		0.0100	ug/L	0.0500		108	50-150		
NEtFOSA	0.0480		0.0100	ug/L	0.0500		96.0	50-150		
NMeFOSAA	0.0494		0.0100	ug/L	0.0500		98.8	50-150		
NEtFOSSA	0.0458		0.0100	ug/L	0.0500		91.6	50-150		
NMeFOSE	0.0470		0.0100	ug/L	0.0500		94.0	50-150		
NEtFOSE	0.0502		0.0100	ug/L	0.0500		100	50-150		
HFPO-DA Hexafluoropropylene oxide dimer acid	0.133		0.0100	ug/L	0.100		133	50-150		
ADONA 4,8-Dioxa-3H-perfluorononanoic acid	0.142		0.0100	ug/L	0.0945		150	50-150		
9CI-PF3ONS	0.130		0.0100	ug/L	0.0935		139	50-150		
11CI-PF3OUdS	0.120		0.0100	ug/L	0.0945		127	50-150		
3:3FTCA	0.292		0.0500	ug/L	0.200		146	50-150		
5:3FTCA	1.41		0.100	ug/L	1.00		141	50-150		
7:3FTCA	1.47		0.100	ug/L	1.00		147	50-150		
PFEESA Perfluoro(2-ethoxyethane)sulfonic acid	0.0996		0.0200	ug/L	0.0890		112	50-150		
PFMPA Perfluoro-3-methoxypropanoic acid	0.123		0.0200	ug/L	0.100		123	50-150		
PFMBA Perfluoro-4-methoxybutanoic acid	0.118		0.0200	ug/L	0.100		118	50-150		
NFDHA Nonafluoro-3,6-dioxaheptanoic acid	0.114		0.0200	ug/L	0.100		114	50-150		
Surrogate: 13C4-PFBA EIS			0.248	ug/L	0.200		124	5-174		
Surrogate: 13C5-PFPeA EIS			0.117	ug/L	0.100		117	20-162		
Surrogate: 13C5-PFHxA EIS			0.0668	ug/L	0.0500		134	41-150		
Surrogate: 13C4-PFHpA EIS			0.0686	ug/L	0.0500		137	55-150		
Surrogate: 13C8-PFOA EIS			0.0628	ug/L	0.0500		126	42-150		
Surrogate: 13C9-PFNA EIS			0.0326	ug/L	0.0250		130	47-142		

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## Quality Control Data (Continued)

### Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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### Batch: BEF1013 - PFAS 537 (Continued)

#### LCS (BEF1013-BS1)

Prepared: 06/24/24 15:24- Analyzed: 06/28/24 06:18

Surrogate: 13C6-PFDA EIS	0.0232	ug/L	0.0250	92.8	37-140
Surrogate: 13C7-PFUnA EIS	0.0320	ug/L	0.0250	128	10-190
Surrogate: 13C2-PFDoA EIS	0.0282	ug/L	0.0250	113	5-171
Surrogate: 13C2-PFTeDA EIS	0.0186	ug/L	0.0250	74.2	5-140
Surrogate: 13C3-PFBS EIS	0.0570	ug/L	0.0466	122	39-150
Surrogate: 13C3-PFHxS EIS	0.0582	ug/L	0.0474	123	52-150
Surrogate: 13C8-PFOS EIS	0.0608	ug/L	0.0479	127	32-144
Surrogate: 13C2-4:2FTS EIS	0.128	ug/L	0.0938	136	25-200
Surrogate: 13C2-6:2FTS EIS	0.129	ug/L	0.0951	136	24-200
Surrogate: 13C2-8:2FTS EIS	0.132	ug/L	0.0960	138	5-200
Surrogate: 13C8-PFOSA EIS	0.0538	ug/L	0.0500	108	30-142
Surrogate: D3-NMeFOSA EIS	0.0378	ug/L	0.0500	75.6	5-167
Surrogate: D5-NEtFOSA EIS	0.0376	ug/L	0.0500	75.2	5-170
Surrogate: D3-NMeFOSAA EIS	0.130	ug/L	0.100	130	45-200
Surrogate: D5-NEtFOSAA EIS	0.129	ug/L	0.100	129	10-200
Surrogate: D7-NMeFOSE EIS	0.540	ug/L	0.500	108	5-150
Surrogate: D9-NEtFOSE EIS	0.518	ug/L	0.500	104	5-150
Surrogate: 13C3-HFPO-DA EIS	0.258	ug/L	0.200	129	25-160
Surrogate: 13C3-PFBA NIS	0.0826	ug/L	0.100	82.6	50-150
Surrogate: 13C2-PFHxA NIS	0.0396	ug/L	0.0500	79.2	50-150
Surrogate: 13C4-PFOA NIS	0.0448	ug/L	0.0500	89.6	50-150
Surrogate: 13C5-PFNA NIS	0.0210	ug/L	0.0250	84.0	50-150
Surrogate: 13C2-PFDA NIS	0.0252	ug/L	0.0250	101	50-150
Surrogate: 18O2-PFHxS NIS	0.0412	ug/L	0.0474	86.9	50-150
Surrogate: 13C4-PFOS NIS	0.0402	ug/L	0.0479	83.9	50-150



Due: 07/08/24

[illegible]





Anatek Labs, Inc.

# Sample Receipt and Preservation Form

Client Name: GSI Water Solutions

TAT: Normal RUSH:      days

Samples Received From: FedEx UPS USPS Client Courier Other:     

Custody Seal on Cooler/Box: Yes No Custody Seals Intact: Yes No N/A

Number of Coolers/Boxes:      Type of Ice: Wet Ice Ice Packs Dry Ice None

Packing Material: Bubble Wrap Bags Foam/Peanuts Paper None Other:     

Cooler Temp As Read (°C): 2.5 Cooler Temp Corrected (°C):      Thermometer Used: IR-4 IR-5

Samples Received Intact? Yes No N/A  
Chain of Custody Present/Complete? Yes No N/A  
Labels and Chains Agree? Yes No N/A  
Samples Received Within Hold Time? Yes No N/A  
Correct Containers Received? Yes No N/A  
Anatek Bottles Used? Yes No Unknown  
Total Number of Sample Bottles Received: 12

Samples Properly Preserved? Yes No N/A  
*If No, record preservation and pH-after details*  
VOC Vials Free of Headspace (<6mm)? Yes No N/A  
VOC Trip Blanks Present? Yes No N/A

Comments:


Initial pH: pH Paper ID:

<2	or	

Record preservatives (and lot numbers, if known) for containers below:

<u>PS00 (2), P125 -1633 x 4</u>

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)


Received/Inspected By: SM Date/Time: 6/21/24 1111  
Form F19.01 - Eff 1 Dec 2022



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Wednesday, April 17, 2024

Jesse Hall  
GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

RE: A4D1160 - Santiam - 464.027

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4D1160, which was received by the laboratory on 4/11/2024 at 3:41:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>	
(See Cooler Receipt Form for details)	
Default Cooler	<u>4.5 degC</u>

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

*Philip Nerenberg*

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Philip Nerenberg, Lab Director



ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam  
Project Number: 464.027  
Project Manager: Jesse Hall

Report ID:  
A4D1160 - 04 17 24 2005

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
464.2024.04.11-01	A4D1160-01	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-02	A4D1160-02	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-03	A4D1160-03	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-04	A4D1160-04	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-05	A4D1160-05	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-06	A4D1160-06	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-07	A4D1160-07	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-08	A4D1160-08	Water	04/11/24 12:00	04/11/24 15:41
464.2024.04.11-09	A4D1160-09	Water	04/11/24 12:00	04/11/24 15:41

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: **464.027**Project Manager: **Jesse Hall**Report ID:**A4D1160 - 04 17 24 2005**

## ANALYTICAL SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
464.2024.04.11-01 (A4D1160-01)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	1.33	---	0.250	mg/L	1	04/11/24 21:56	EPA 300.0	
464.2024.04.11-02 (A4D1160-02)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	1.18	---	0.250	mg/L	1	04/11/24 23:01	EPA 300.0	
464.2024.04.11-03 (A4D1160-03)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	7.57	---	0.250	mg/L	1	04/12/24 02:15	EPA 300.0	
464.2024.04.11-04 (A4D1160-04)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	7.92	---	0.250	mg/L	1	04/12/24 02:36	EPA 300.0	
464.2024.04.11-05 (A4D1160-05)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	7.58	---	0.250	mg/L	1	04/12/24 02:58	EPA 300.0	
464.2024.04.11-06 (A4D1160-06)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	5.33	---	0.250	mg/L	1	04/12/24 03:19	EPA 300.0	
464.2024.04.11-07 (A4D1160-07)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	1.63	---	0.250	mg/L	1	04/12/24 03:41	EPA 300.0	
464.2024.04.11-08 (A4D1160-08)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	1.57	---	0.250	mg/L	1	04/12/24 04:02	EPA 300.0	
464.2024.04.11-09 (A4D1160-09)				Matrix: Water				
Batch: 24D0471								
Nitrate-Nitrogen	1.32	---	0.250	mg/L	1	04/12/24 05:07	EPA 300.0	

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209Project: Santiam  
Project Number: **464.027**  
Project Manager: **Jesse Hall****Report ID:**  
**A4D1160 - 04 17 24 2005**

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Anions by Ion Chromatography

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D0471 - Method Prep: Aq						Water						
Blank (24D0471-BLK1)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 20:30									
<u>EPA 300.0</u>												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
LCS (24D0471-BS1)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 20:51									
<u>EPA 300.0</u>												
Nitrate-Nitrogen	2.00	---	0.250	mg/L	1	2.00	---	100	90-110%	---	---	
Duplicate (24D0471-DUP1)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 22:18									
<u>QC Source Sample: 464.2024.04.11-01 (A4D1160-01)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	1.32	---	0.250	mg/L	1	---	1.33	---	---	0.2	3%	
Duplicate (24D0471-DUP2)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 23:22									
<u>QC Source Sample: 464.2024.04.11-02 (A4D1160-02)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	1.18	---	0.250	mg/L	1	---	1.18	---	---	0.3	3%	
Matrix Spike (24D0471-MS1)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 22:39									
<u>QC Source Sample: 464.2024.04.11-01 (A4D1160-01)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	3.84	---	0.312	mg/L	1	2.50	1.33	101	87-112%	---	---	
Matrix Spike (24D0471-MS2)			Prepared: 04/11/24 17:01   Analyzed: 04/11/24 23:44									
<u>QC Source Sample: 464.2024.04.11-02 (A4D1160-02)</u>												
<u>EPA 300.0</u>												
Nitrate-Nitrogen	3.70	---	0.312	mg/L	1	2.50	1.18	101	87-112%	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**

Project Number: **464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1160 - 04 17 24 2005**

**SAMPLE PREPARATION INFORMATION**

**Anions by Ion Chromatography**

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D0471</b>							
A4D1160-01	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-02	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-03	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-04	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-05	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-06	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-07	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-08	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00
A4D1160-09	Water	EPA 300.0	04/11/24 12:00	04/11/24 17:01	5mL/5mL	5mL/5mL	1.00

Apex Laboratories

*Philip Nerenberg*

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 464.027

Project Manager: Jesse Hall

Report ID:

A4D1160 - 04 17 24 2005

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

There are No Qualifiers on Sample or QC Data for this report

Apex Laboratories

A handwritten signature in black ink that reads "Philip Nerenberg".

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**

Project Number: **464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1160 - 04 17 24 2005**

### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" \*\*\* " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**

Project Number: **464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1160 - 04 17 24 2005**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

**Benzo(a)fluoranthene Isomer Reporting:**

Due to coelution on the analytical column, the Benzo(b)fluoranthene results represent the concentration of both Benzo(b)fluoranthene and Benzo(j) fluoranthene. Calibration is based on the response of Benzo(b)fluoranthene, and the results represent the combined Benzo(b+j)fluoranthene(s).

Apex Laboratories

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Philip Nerenberg, Lab Director



## ANALYTICAL REPORT

**Apex Laboratories, LLC**

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**

Project Number: **464.027**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1160 - 04 17 24 2005**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)** -

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
--------	----------	--------	---------	--------	---------------

All reported analytes are included in Apex Laboratories' current ORELAP scope.

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **464.027**Project Manager: **Jesse Hall****Report ID:****A4D1160 - 04 17 24 2005****Philip Nerenberg**

AUDITED

Subject: FW: Santiam Canyon Geochemical Modeling

- General parameters
  - Lab pH, lab specific conductivity, TDS, alkalinity (total, bicarbonate, carbonate, hydroxide)
- Dissolved or total metals
  - Antimony, Silver, Thallium
  - Consistent with current practices + major cations: Sb, Al, As, Ba, Be, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Hg, Na, Se, Ag, Tl, Zn
  - Dissolved or total metals in addition to current suite that would be great diagnostic indicators, if possible to add: B, Sr, Li, Mo, Ni, P as PO4, Pb, U, V
- Anions
  - Bromide, chloride, fluoride, sulfate
- Nitrogen species
  - Nitrate, nitrite, ammonia
- Cyanide
- Organics (consistent with current practices) – VOCs and SVOCs

If possible, a similar analytical suite for both the groundwater and wastewater samples will facilitate mixing modeling for the two solutions. Feel free to reach out with questions or concerns and let us know if this is not what you are looking for. We'll be back in touch with the solids sampling recommendations soon.

Thanks!

Shannon Zahuranec, PG  
Senior Geochemist  
C: 859-310-2174

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Samples coming today from GSI  
will say 'see email' on chain  
Anissa is setting up project

1



## ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: 464.027Project Manager: Jesse Hall

## Report ID:

A4D1160 - 04 17 24 2005

## APEX LABS COOLER RECEIPT FORM

Client: GSI Element WO#: A4D1160Project/Project #: Santiam PIT #464.027

## Delivery Info:

Date/time received: 4/11/24 @ 1541 By: AKCDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐From USDA Regulated Origin? Yes ☐ No ☒Cooler Inspection Date/time inspected: 4/11/24 @ 1541 By: AKCChain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐Contains USDA Reg. Soils? Yes ☐ No ☒ Unsure (email RegSoils) ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>4.5</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>N</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) Possible reason why: ①Green dots applied to out of temperature samples? Yes ☒ No ☐Out of temperature samples form initiated? Yes ☒ No ☐Sample Inspection: Date/time inspected: 4/11/24 @ 1606 By: AKCAll samples intact? Yes ☒ No ☐ Comments: AKCBottle labels/COCs agree? Yes ☒ No ☒ Comments: Col lists 12 cants. per sample, but we received 1 each.COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: limited volume on all samples.Do VOA vials have visible headspace? Yes ☐ No ☐ NA ☒Comments: AKCWater samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒ pH ID: AKCComments: AKCLabeled by: AKCWitness: AKCCooler Inspected by: AKC

Form Y-003 R-02

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

Monday, April 29, 2024

Jesse Hall  
GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

RE: A4D1382 - Santiam - 469

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A4D1382, which was received by the laboratory on 4/18/2024 at 3:16:00PM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: [pnerenberg@apex-labs.com](mailto:pnerenberg@apex-labs.com), or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information	
<u>Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.</u>	
(See Cooler Receipt Form for details)	
Default Cooler	0.7 degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.

All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.



Apex Laboratories

*Philip Nerenberg*

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Philip Nerenberg, Lab Director





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6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**

Project Number: **469**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1382 - 04 29 24 1805**

### ANALYTICAL REPORT FOR SAMPLES

#### SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
469-20240418-1	A4D1382-01	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-2	A4D1382-02	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-3	A4D1382-03	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-4	A4D1382-04	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-5	A4D1382-05	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-6	A4D1382-06	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-7	A4D1382-07	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-8	A4D1382-08	Water	04/18/24 13:00	04/18/24 15:16
469-20240418-9	A4D1382-09	Water	04/18/24 13:00	04/18/24 15:16

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55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## ANALYTICAL SAMPLE RESULTS

## Demand Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
469-20240418-1 (A4D1382-01)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-2 (A4D1382-02)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-3 (A4D1382-03)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-4 (A4D1382-04)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-5 (A4D1382-05)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-6 (A4D1382-06)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-7 (A4D1382-07)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	ND	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-8 (A4D1382-08)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	3.21	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	
469-20240418-9 (A4D1382-09)				Matrix: Water				
Batch: 24D0748								
Biochemical Oxygen Demand	2.93	---	1.88	mg/L	1	04/24/24 14:25	SM 5210 B	

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ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## ANALYTICAL SAMPLE RESULTS

## Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>469-20240418-1 (A4D1382-01)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	89.0	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	ND	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	TSS
<b>469-20240418-2 (A4D1382-02)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	90.0	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	ND	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	TSS
<b>469-20240418-3 (A4D1382-03)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	160	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	ND	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	TSS
<b>469-20240418-4 (A4D1382-04)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	166	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	41.0	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	
<b>469-20240418-5 (A4D1382-05)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	165	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	ND	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	TSS
<b>469-20240418-6 (A4D1382-06)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	148	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	162	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	
<b>469-20240418-7 (A4D1382-07)</b>		<b>Matrix: Water</b>						

Apex Laboratories

Philip Nerenberg, Lab Director

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ANALYTICAL REPORT

Apex Laboratories, LLC

6700 S.W. Sandburg Street  
Tigard, OR 97223  
503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions  
55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam  
Project Number: 469  
Project Manager: Jesse Hall

Report ID:  
A4D1382 - 04 29 24 1805

ANALYTICAL SAMPLE RESULTS

Solid and Moisture Determinations

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
<b>469-20240418-7 (A4D1382-07)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	95.0	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	ND	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	TSS
<b>469-20240418-8 (A4D1382-08)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	111	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	582	---	10.0	mg/L	1	04/29/24 09:25	SM 2540 D	
<b>469-20240418-9 (A4D1382-09)</b>		<b>Matrix: Water</b>						
Batch: 24D0720								
Total Dissolved Solids	145	---	5.00	mg/L	1	04/18/24 18:41	SM 2540 C	
Batch: 24D0904								
Total Suspended Solids	50.0	---	5.00	mg/L	1	04/29/24 09:25	SM 2540 D	

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## ANALYTICAL SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
469-20240418-1 (A4D1382-01)				Matrix: Water				
Batch: 24D0692								
pH	6.7	---		pH Units	1	04/18/24 17:00	SM 4500-H+ B	H-12
pH Temperature (deg C)	19.7	---		pH Units	1	04/18/24 17:00	SM 4500-H+ B	H-12
469-20240418-2 (A4D1382-02)				Matrix: Water				
Batch: 24D0692								
pH	6.6	---		pH Units	1	04/18/24 17:07	SM 4500-H+ B	H-12
pH Temperature (deg C)	19.4	---		pH Units	1	04/18/24 17:07	SM 4500-H+ B	H-12
469-20240418-3 (A4D1382-03)				Matrix: Water				
Batch: 24D0692								
pH	6.0	---		pH Units	1	04/18/24 17:11	SM 4500-H+ B	H-12
pH Temperature (deg C)	17.6	---		pH Units	1	04/18/24 17:11	SM 4500-H+ B	H-12
469-20240418-4 (A4D1382-04)				Matrix: Water				
Batch: 24D0692								
pH	6.4	---		pH Units	1	04/18/24 17:16	SM 4500-H+ B	H-12
pH Temperature (deg C)	17.9	---		pH Units	1	04/18/24 17:16	SM 4500-H+ B	H-12
469-20240418-5 (A4D1382-05)				Matrix: Water				
Batch: 24D0692								
pH	6.2	---		pH Units	1	04/18/24 17:20	SM 4500-H+ B	H-12
pH Temperature (deg C)	18.0	---		pH Units	1	04/18/24 17:20	SM 4500-H+ B	H-12
469-20240418-6 (A4D1382-06)				Matrix: Water				
Batch: 24D0692								
pH	6.4	---		pH Units	1	04/18/24 17:24	SM 4500-H+ B	H-12
pH Temperature (deg C)	18.2	---		pH Units	1	04/18/24 17:24	SM 4500-H+ B	H-12
469-20240418-7 (A4D1382-07)				Matrix: Water				
Batch: 24D0692								
pH	6.3	---		pH Units	1	04/18/24 17:29	SM 4500-H+ B	H-12
pH Temperature (deg C)	17.9	---		pH Units	1	04/18/24 17:29	SM 4500-H+ B	H-12
469-20240418-8 (A4D1382-08)				Matrix: Water				
Batch: 24D0692								

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503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
469-20240418-8 (A4D1382-08)				Matrix: Water				
pH	6.7	---		pH Units	1	04/18/24 17:35	SM 4500-H+ B	H-12
pH Temperature (deg C)	18.0	---		pH Units	1	04/18/24 17:35	SM 4500-H+ B	H-12
469-20240418-9 (A4D1382-09)				Matrix: Water				
Batch: 24D0692								
pH	7.2	---		pH Units	1	04/18/24 17:39	SM 4500-H+ B	H-12
pH Temperature (deg C)	16.8	---		pH Units	1	04/18/24 17:39	SM 4500-H+ B	H-12

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## ANALYTICAL REPORT

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503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Demand Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D0748 - Method Prep: Aq						Water						
Blank (24D0748-BLK1)			Prepared: 04/19/24 13:22    Analyzed: 04/24/24 14:25									
<u>SM 5210 B</u>												
Biochemical Oxygen Demand	ND	---	0.200	mg/L	1	---	---	---	---	---	---	
Duplicate (24D0748-DUP1)			Prepared: 04/19/24 13:22    Analyzed: 04/24/24 14:25									
<u>QC Source Sample: Non-SDG (A4D1361-01)</u>												
Biochemical Oxygen Demand	7.95	---	0.940	mg/L	1	---	9.21	---	---	15	20%	X
Duplicate (24D0748-DUP2)			Prepared: 04/19/24 13:22    Analyzed: 04/24/24 14:25									
<u>QC Source Sample: Non-SDG (A4D1362-01)</u>												
Biochemical Oxygen Demand	2.21	---	0.940	mg/L	1	---	2.53	---	---	14	20%	
Reference (24D0748-SRM1)			Prepared: 04/19/24 13:22    Analyzed: 04/24/24 14:25									
<u>SM 5210 B</u>												
Biochemical Oxygen Demand	211	---		mg/L	1	198		106	85-115%	---	---	

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Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Solid and Moisture Determinations

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D0720 - Total Dissolved Solids - 2022						Water						
Blank (24D0720-BLK1)			Prepared: 04/18/24 18:41		Analyzed: 04/18/24 18:41							
SM 2540 C												
Total Dissolved Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (24D0720-DUP1)			Prepared: 04/18/24 18:41		Analyzed: 04/18/24 18:41							
QC Source Sample: Non-SDG (A4D1189-01)												
Total Dissolved Solids	583	---	6.67	mg/L	1	---	576	---	---	1.16	10%	
Duplicate (24D0720-DUP2)			Prepared: 04/18/24 18:41		Analyzed: 04/18/24 18:41							
QC Source Sample: Non-SDG (A4D1334-01)												
Total Dissolved Solids	316	---	5.00	mg/L	1	---	318	---	---	0.631	10%	
Reference (24D0720-SRM1)			Prepared: 04/18/24 18:41		Analyzed: 04/18/24 18:41							
SM 2540 C												
Total Dissolved Solids	2510	---		mg/L	1	2470		102	82-118%	---	---	
Batch 24D0904 - Total Suspended Solids - 2022						Water						
Blank (24D0904-BLK1)			Prepared: 04/24/24 13:09		Analyzed: 04/29/24 09:25							
SM 2540 D												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (24D0904-DUP1)			Prepared: 04/24/24 13:09		Analyzed: 04/29/24 09:25							
QC Source Sample: Non-SDG (A4D1373-05)												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	ND	---	---	---	10%	TSS
Duplicate (24D0904-DUP2)			Prepared: 04/24/24 13:09		Analyzed: 04/29/24 09:25							
QC Source Sample: Non-SDG (A4D1387-01)												
Total Suspended Solids	ND	---	5.00	mg/L	1	---	ND	---	---	---	10%	TSS
Reference (24D0904-SRM1)			Prepared: 04/24/24 13:09		Analyzed: 04/29/24 09:25							
SM 2540 D												
Total Suspended Solids	937	---		mg/L	1	875		107	85-115%	---	---	

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503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## QUALITY CONTROL (QC) SAMPLE RESULTS

## Conventional Chemistry Parameters

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 24D0692 - Method Prep: Aq						Water						
Duplicate (24D0692-DUP1)			Prepared: 04/18/24 09:40		Analyzed: 04/18/24 17:13							
<u>QC Source Sample: 469-20240418-3 (A4D1382-03)</u>												
<u>SM 4500-H+ B</u>												
pH	6.1	---		pH Units	1	---	6.0	---	---	0.2	2%	H-12
pH Temperature (deg C)	17.6	---		pH Units	1	---	17.6	---	---	0	30%	H-12
Reference (24D0692-SRM1)			Prepared: 04/18/24 09:40		Analyzed: 04/18/24 09:56							
<u>SM 4500-H+ B</u>												
pH	6.0	---		pH Units	1	6.00		100	98.33-101.33%	---	---	
pH Temperature (deg C)	20.6	---		pH Units	1	20.0		103	50-200%	---	---	
Reference (24D0692-SRM2)			Prepared: 04/18/24 09:40		Analyzed: 04/18/24 09:57							
<u>SM 4500-H+ B</u>												
pH	8.0	---		pH Units	1	8.00		100	99-101%	---	---	
pH Temperature (deg C)	20.5	---		pH Units	1	20.0		102	50-200%	---	---	
Reference (24D0692-SRM3)			Prepared: 04/18/24 09:40		Analyzed: 04/18/24 16:50							
<u>SM 4500-H+ B</u>												
pH	6.0	---		pH Units	1	6.00		101	98.33-101.33%	---	---	
pH Temperature (deg C)	20.8	---		pH Units	1	20.0		104	50-200%	---	---	
Reference (24D0692-SRM4)			Prepared: 04/18/24 09:40		Analyzed: 04/18/24 17:41							
<u>SM 4500-H+ B</u>												
pH	8.0	---		pH Units	1	8.00		100	99-101%	---	---	
pH Temperature (deg C)	20.6	---		pH Units	1	20.0		103	50-200%	---	---	

Apex Laboratories

Philip Nerenberg, Lab Director

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**ANALYTICAL REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **469**Project Manager: **Jesse Hall****Report ID:****A4D1382 - 04 29 24 1805****SAMPLE PREPARATION INFORMATION****Demand Parameters****Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D0748</b>							
A4D1382-01	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-02	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-03	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-04	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-05	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-06	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-07	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-08	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA
A4D1382-09	Water	SM 5210 B	04/18/24 13:00	04/19/24 15:43	150mL/300mL	150mL/300mL	NA

**Solid and Moisture Determinations****Prep: Total Dissolved Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D0720</b>							
A4D1382-01	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-02	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-03	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-04	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-05	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-06	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-07	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-08	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA
A4D1382-09	Water	SM 2540 C	04/18/24 13:00	04/18/24 18:41			NA

**Prep: Total Suspended Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D0904</b>							
A4D1382-01	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-02	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-03	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-04	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-05	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-06	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-07	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA
A4D1382-08	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA

Apex Laboratories

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Philip Nerenberg, Lab Director



**ANALYTICAL REPORT****Apex Laboratories, LLC**

6700 S.W. Sandburg Street

Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**Project Number: **469**Project Manager: **Jesse Hall****Report ID:****A4D1382 - 04 29 24 1805****SAMPLE PREPARATION INFORMATION****Solid and Moisture Determinations****Prep: Total Suspended Solids - 2022**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4D1382-09	Water	SM 2540 D	04/18/24 13:00	04/24/24 13:09			NA

**Conventional Chemistry Parameters****Prep: Method Prep: Aq**

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
<b>Batch: 24D0692</b>							
A4D1382-01	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-02	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-03	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-04	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-05	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-06	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-07	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-08	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA
A4D1382-09	Water	SM 4500-H+ B	04/18/24 13:00	04/18/24 16:18	20mL/20mL	20mL/20mL	NA

Apex Laboratories

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ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: Santiam

Project Number: 469

Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

- H-12** Sample Analysis or Filtration was performed >15 minutes after sample collection. Consult regulator or permit manager to determine the usability of data for intended use.
- TSS** Dried residue was less than 2.5mg as specified in the method. Results meet regulatory requirements.
- X** See Case Narrative.

Apex Laboratories

Philip Nerenberg, Lab Director

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503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**

Project Number: **469**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1382 - 04 29 24 1805**

### REPORTING NOTES AND CONVENTIONS:

**Abbreviations:**

DET Analyte DETECTED at or above the detection or reporting limit.  
ND Analyte NOT DETECTED at or above the detection or reporting limit.  
NR Result Not Reported  
RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

**Detection Limits: Limit of Detection (LOD)**

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).  
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

**Reporting Limits: Limit of Quantitation (LOQ)**

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

**Reporting Conventions:**

Basis: Results for soil samples are generally reported on a 100% dry weight basis.  
The Result Basis is listed following the units as "dry", "wet", or " " (blank) designation.

"dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")

See Percent Solids section for details of dry weight analysis.

"wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a "dry weight" basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an "As Received" basis do not have the WMS correction applied, as dry weight was not performed.

**QC Source:**

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

**Miscellaneous Notes:**

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" \*\*\* " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Philip Nerenberg, Lab Director

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55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: **Santiam**

Project Number: **469**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1382 - 04 29 24 1805**

### REPORTING NOTES AND CONVENTIONS (Cont.):

**Blanks:**

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to  $\frac{1}{2}$  the Reporting Limit (RL).

-For Blank hits falling between  $\frac{1}{2}$  the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.

For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

**Preparation Notes:**

**Mixed Matrix Samples:**

**Water Samples:**

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

**Soil and Sediment Samples:**

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

**Sampling and Preservation Notes:**

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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503-718-2323  
ORELAP ID: OR100062

**GSI Water Solutions**

55 SW Yamhill St, Ste 300  
Portland, OR 97209

Project: **Santiam**

Project Number: **469**

Project Manager: **Jesse Hall**

**Report ID:**

**A4D1382 - 04 29 24 1805**

### LABORATORY ACCREDITATION INFORMATION

**ORELAP Certification ID: OR100062 (Primary Accreditation)** -

**EPA ID: OR01039**

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

**Apex Laboratories**

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation
--------	----------	--------	---------	--------	---------------

All reported analytes are included in Apex Laboratories' current ORELAP scope.

**Secondary Accreditations**

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

**Subcontract Laboratory Accreditations**

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.

Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

**Field Testing Parameters**

Results for Field Tested data are provided by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

Apex Laboratories, LLC

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: 469Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

APEX LABS		CHAIN OF CUSTODY		Lab # <u>A4D1382</u> coc 1 of 1	
Company: <u>GSI Water Solutions</u>		Project Mgr: <u>Jesse Hall</u>		Project Name: <u>Santiam Canyon PIT</u>	
Address: <u>650 NE Huladay St Suite 900</u>		Phone: <u>503-481-0172</u>		Email: <u>jhall@gstws.com</u>	
Sampled by: <u>J. Hall and J. Cam</u>		Project # <u>469</u>		PO #	
ANALYSIS REQUEST					
Site Location: State <u>OR</u> County <u>Linn</u>					
SAMPLE ID	DATE	TIME	MATRIX	# OF CONTAINERS	ANALYSIS REQUEST
<u>469-2024-18-1</u>	<u>4/18</u>	<u>13:00</u>			
<u>-2-2</u>					
<u>-3-</u>					
<u>-4-2</u>					
<u>-5-</u>					
<u>-6-2</u>					
<u>-7-</u>					
<u>-8-2</u>					
<u>-9-</u>					
<u>-5-2</u>					
Standard Turn Around Time (TAT) = 10 Business Days					
TAT Requested (circle) 1 Day 2 Day 3 Day 5 Day Standard Other: _____					
SPECIAL INSTRUCTIONS:					
RELINQUISHED BY: Signature: _____ Date: <u>4/18/24</u>					
RELINQUISHED BY: Signature: _____ Date: _____					
Printed Name: _____ Time: _____					
Company: _____					
Form Y-002 R-00					

Apex Laboratories

Philip Nerenberg, Lab Director

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## ANALYTICAL REPORT

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Tigard, OR 97223

503-718-2323

ORELAP ID: OR100062

## GSI Water Solutions

55 SW Yamhill St, Ste 300

Portland, OR 97209

Project: SantiamProject Number: 469Project Manager: Jesse Hall

Report ID:

A4D1382 - 04 29 24 1805

## APEX LABS COOLER RECEIPT FORM

Client: GSI water solutions Element WO#: A4 D1382Project/Project #: Santiam Canyon PIT 469 469  
anal for ESJ 4/18/24

## Delivery Info:

Date/time received: 4/18/24 @ 1516 By: ESTDelivered by: Apex ☒ Client ☒ ESS ☐ FedEx ☐ UPS ☐ Radio ☐ Morgan ☐ SDS ☐ Evergreen ☐ Other ☐From USDA Regulated Origin? Yes ☐ No ☒Cooler Inspection Date/time inspected: 4/18/24 @ 1520 By: ESTChain of Custody included? Yes ☒ No ☐Signed/dated by client? Yes ☒ No ☐Contains USDA Reg. Soils? Yes ☐ No ☒ Unsure (email RegSoils) ☐

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	<u>0.7</u>						
Custody seals? (Y/N)	<u>N</u>						
Received on ice? (Y/N)	<u>Y</u>						
Temp. blanks? (Y/N)	<u>Y</u>						
Ice type: (Gel/Real/Other)	<u>Real</u>						
Condition (In/Out):	<u>In</u>						

Cooler out of temp? (Y/N) ☒ Possible reason why:Green dots applied to out of temperature samples? Yes ☐ No ☒Out of temperature samples form initiated? Yes ☐ No ☒Sample Inspection: Date/time inspected: 4/18/24 @ 16:08 By: RAMAll samples intact? Yes ☒ No ☐ Comments: Bottle labels/COCs agree? Yes ☒ No ☐ Comments: COC/container discrepancies form initiated? Yes ☐ No ☒Containers/volumes received appropriate for analysis? Yes ☒ No ☐ Comments: 2x 250 mLprovided for BOD, TSS, TDS, pH on all samples - limited volume anal for ESJDo VOA vials have visible headspace? Yes ☐ No ☐ NA ☒Comments: Water samples: pH checked: Yes ☐ No ☐ NA ☒ pH appropriate? Yes ☐ No ☐ NA ☒ pH ID: Comments: Labeled by: RAMWitness: KABCooler Inspected by: RAM

Form Y-003 R-02

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Burlington, WA Corporate Laboratory (a)  
1620 S Walnut St - Burlington, WA 98233 - 800.755.9295 • 360.757.1400

Bellingham, WA Microbiology (b)  
805 Orchard Dr Ste 4 - Bellingham, WA 98225 - 360.715.1212

Portland, OR Microbiology/Chemistry (c)  
9725 SW Commerce Cr Ste A2 - Wilsonville, OR 97070 - 503.682.7802

Corvallis, OR Microbiology/Chemistry (d)  
1100 NE Circle Blvd, Ste 130 - Corvallis, OR 97330 - 541.753.4946

Bend, OR Microbiology (e)  
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

Page 1 of 2


## INORGANIC COMPOUNDS (IOC) REPORT

Client Name: GSI Water Solutions, Inc.  
55 SW Yamhill Street Ste 300  
Portland, OR 97204

Reference Number: 23-15512  
Project: Santiam Canyon 0464.020.001 - C

System Name:  
System ID Number:  
Source Number:  
Multiple Sources:  
Sample Type:  
Sample Purpose: Investigative or Other  
Sample Location: GM1MW1  
County:

Sample Number: GM1MW10523  
Lab Number: 23\_31092  
Collect Date: 5/28/23 11:20  
Date Received: 5/30/23  
Report Date: 7/12/23  
Sampled By: Mellisa Girbach  
Sampler Phone:  
Approved by: anp,bj,mcs,pap,pdk,1  
Authorized by:

  
Thanh B Phan  
Lab Manager, Portland

EPA#	ANALYTES	RESULTS	UNITS	LRL	MCL	Analyst	Lab Code*	METHOD	Analyzed	COMMENT
1925	<b>CORROSIVITY</b> HYDROGEN ION (pH)	<b>6.15 H5</b>	pH Units			klp	4072 a	SM4500-H+ B	06/08/23 15:58	Temp (C) : 22.1
1067	ALKALINITY	<b>42.5</b>	mg CaCO3/	2		klp	4072 a	SM2320 B	06/08/23	
1910	CORROSIVITY	<b>-2.92</b>	SI			bj	4072 a	SM203	06/23/23	
	CARBONATE	<b>ND</b>	mgCaCO3/L	2		klp	4072 a	SM2320 B	06/08/23	
	BICARBONATE	<b>42.5</b>	mg CaCO3/	2		klp	4072 a	SM2320 B	06/08/23	
	HYDROXIDE	<b>ND</b>	mg CaCO3/	2		klp	4072 a	SM2320 B	06/08/23	
1067	ALKALINITY	<b>42.5</b>	mg CaCO3/	2.0		klp	4072 a	SM2320 B	06/08/23	
1024	CYANIDE	<b>ND</b>	mg/L	0.005	<b>0.2</b>	tjb	4072 a	D7511-12	06/07/23	
	TOTAL DISSOLVED SOLIDS	<b>78</b>	mg/L	10	<b>500</b>	mso	4072 a	SM2540 C	06/13/23	
1020	CHROMIUM	<b>ND</b>	mg/L	0.001		tjb	4072 a	200.8	06/02/23	
1075	BERYLLIUM	<b>ND</b>	mg/L	0.0003		tjb	4072 a	200.8	06/02/23	
1041	NITRITE-N	<b>ND H3</b>	mg/L	0.01	<b>1.0</b>	anl	OR100063 c	SM4500-NO3 F	05/30/23 16:41	
1005	ARSENIC	<b>ND</b>	mg/L	0.0005		tjb	4072 a	200.8	06/02/23	
1045	SELENIUM	<b>ND</b>	mg/L	0.001		tjb	4072 a	200.8	06/02/23	
1050	SILVER	<b>ND</b>	mg/L	0.0002		tjb	4072 a	200.8	06/02/23	
1015	CADMIUM	<b>ND</b>	mg/L	0.00025		tjb	4072 a	200.8	06/02/23	
1074	ANTIMONY	<b>ND</b>	mg/L	0.001		tjb	4072 a	200.8	06/02/23	
1040	NITRATE-N	<b>1.10 H3</b>	mg/L	0.005	<b>10</b>	anl	OR100063 c	SM4500-NO3 F	05/30/23 16:41	
1010	BARIUM	<b>0.0035</b>	mg/L	0.001		tjb	4072 a	200.8	06/02/23	
1030	LEAD	<b>0.00027 J</b>	mg/L	0.0005		tjb	4072 a	200.8	06/20/23	
1035	MERCURY	<b>ND</b>	mg/L	0.0002		tjb	4072 a	245.1	06/13/23	
	HARDNESS	<b>39.4</b>	mg CaCO3/	10		bj	4072 a	200.7	06/05/23	

### NOTES:

ND (Not Detected): indicates that the parameter was not detected above the Lower Reporting limit (LRL).

MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

\* Lab Code - lists the laboratory accreditation code plus a letter at the far right to indicate the Edge Analytical lab facility where the analyses was performed.

If you have any questions concerning this report contact us at the above phone number.

FORM: cIOC OR.rpt





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Portland, OR Microbiology/Chemistry (c)  
9725 SW Commerce Cr Ste A2 - Wilsonville, OR 97070 - 503.682.7802

Corvallis, OR Microbiology/Chemistry (d)  
1100 NE Circle Blvd, Ste 130 - Corvallis, OR 97330 - 541.753.4946

Bend, OR Microbiology (e)  
20332 Empire Blvd Ste 4 - Bend, OR 97701 - 541.639.8425

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## INORGANIC COMPOUNDS (IOC) REPORT

Client Name: GSI Water Solutions, Inc.  
55 SW Yamhill Street Ste 300  
Portland, OR 97204

Reference Number: 23-15512  
Project: Santiam Canyon 0464.020.001 - C

System Name:  
System ID Number:  
Source Number:  
Multiple Sources:  
Sample Type:  
Sample Purpose: Investigative or Other  
Sample Location: GM1MW1  
County:

Sample Number: GM1MW10523  
Lab Number: 23\_31092  
Collect Date: 5/28/23 11:20  
Date Received: 5/30/23  
Report Date: 7/12/23  
Sampled By: Mellisa Girbach  
Sampler Phone:  
Approved by: anp,bj,mcs,pap,pdk,1  
Authorized by:

  
Thanh B Phan  
Lab Manager, Portland

EPA#	ANALYTES	RESULTS	UNITS	LRL	MCL	Analyst	Lab Code*	METHOD	Analyzed	COMMENT
	SILICA	30.0	mg/L	0.05		bj	4072 a	200.7	06/05/23	
	TOTAL SUSPENDED SOLIDS	11.5 NN	mg/L	2		pap	OR100063 c	I-3765-85	06/01/23	
1032	MANGANESE	0.0776	mg/L	0.001		bj	4072 a	200.7	06/05/23	
1028	IRON	0.62	mg/L	0.050		bj	4072 a	200.7	06/05/23	
1002	ALUMINUM	0.52	mg/L	0.010		bj	4072 a	200.7	06/05/23	
1036	NICKEL	0.00086 J	mg/L	0.0005		tjb	4072 a	200.8	06/02/23	
1022	COPPER	0.0020	mg/L	0.002		tjb	4072 a	200.8	06/02/23	
1095	ZINC	0.0033	mg/L	0.0025		tjb	4072 a	200.8	06/02/23	
	FLUORIDE	ND	mg/L	0.10	4	jwn	4072 a	300.0	06/01/23	
1016	CALCIUM	10.5	mg/L	0.5		bj	4072 a	200.7	06/05/23	
1052	SODIUM	3.8	mg/L	0.5		bj	4072 a	200.7	06/05/23	
1031	MAGNESIUM	3.2	mg/L	0.5		bj	4072 a	200.7	06/05/23	
1042	POTASSIUM	2.6	mg/L	0.5		bj	4072 a	200.7	06/05/23	
1017	CHLORIDE	1.4	mg/L	0.2		jwn	4072 a	300.0	06/01/23	
	MOLYBDENUM	0.00062	mg/L	0.001		tjb	4072 a	200.8	06/20/23	
1085	THALLIUM	ND	mg/L	0.0001		tjb	4072 a	200.8	06/02/23	
1055	SULFATE	1.6	mg/L	0.2		jwn	4072 a	300.0	06/01/23	
4006	Radiological URANIUM	ND	mg/L	0.001	0.030	tjb	4072 a	200.8	06/02/23	
4000	GROSS ALPHA	ND	pCi/L	3	15	reh1	156	900.0	06/30/23	Analyzed by PacePA
4100	GROSS BETA	ND	pCi/L	4	50	reh1	156	900.0	06/30/23	Analyzed by PacePA
	Radium 226	ND	pCi/L	1		jlj		903.1	06/28/23	Analyzed by PacePA
	Radium 228	ND	pCi/L	1	5	val		904.0	06/23/23	Analyzed by PacePA

### NOTES:

ND (Not Detected): indicates that the parameter was not detected above the Lower Reporting limit (LRL).

MCL (Maximum Contaminant Level) maximum permissible level of a contaminant in water established by EPA; Federal Action Levels are 0.015 mg/L for Lead and 1.3 mg/L for Copper. Sodium has a recommended limit of 20 mg/L. A blank MCL value indicates a level is not currently established.

\* Lab Code - lists the laboratory accreditation code plus a letter at the far right to indicate the Edge Analytical lab facility where the analyses was performed.

If you have any questions concerning this report contact us at the above phone number.

FORM: cIOC OR.rpt