Technical Memorandum

TO:	Sandy Smith, PE, LHG, Washington State Department of Ecology
CC:	Eric Huseby, City of Tacoma
FROM:	Katie Gauglitz and Sierra Mott
DATE:	April 7, 2022
RE:	**Long-Term Groundwater Monitoring Status Report No. 9** **January 2022 Annual Groundwater Monitoring** **Former Sauro's Cleanerama Site** **Tacoma, Washington** **Project No. 0094048.100.105**

Introduction

On behalf of the City of Tacoma (City), Landau Associates, Inc. (Landau) is providing results for long-term groundwater monitoring activities at the former Sauro's Cleanerama site (site). Figure 1 shows the site location.

The City is implementing a Cleanup Action Plan (CAP; Ecology 2014), which is part of Agreed Order No. DE 11080 between the City and the Washington State Department of Ecology (Ecology). Under the CAP, the City is implementing a monitored natural attenuation (MNA) remedy that included 2 years of semiannual groundwater monitoring beginning in January 2016 and continuing through July 2017, followed by annual groundwater monitoring until groundwater at the site reaches cleanup goals (the CAP estimates 26 years of annual sampling). After completion of semiannual monitoring, winter was identified as the appropriate sampling timeframe because higher volatile organic compound (VOC) concentrations generally occur during the winter (Landau 2017). The City received approval from Ecology (Coleman 2018), and commenced the annual sampling in January 2018.

This technical memorandum summarizes the ninth groundwater monitoring event under the CAP, conducted on January 11 and 12, 2022. Monitoring includes collection of groundwater samples and analysis for VOCs and MNA geochemical parameters, in accordance with the CAP.

Groundwater Monitoring Program Summary

The existing site groundwater monitoring well network includes 17 wells. Of the 17 wells, nine were selected for long-term monitoring under the CAP. Figure 2 shows the locations of the nine wells selected for long-term monitoring. Table 1 presents a sampling matrix for the long-term monitoring wells.

During the January 2022 sampling event, groundwater samples were collected in accordance with the Sampling and Analysis Plan (Landau 2013) and the sample matrix presented in Table 1. Samples for VOC and MNA analysis were collected using a peristaltic pump at MW-2. Samples for VOC and MNA analysis were collected using a dedicated Waterra foot valve at LAI-MW4. The other seven wells were

sampled using passive diffusion bags for VOCs and dedicated Waterra foot valves for MNA parameters. VOC samples at RNS-MW6 are collected at two discrete depths because of the relatively long screen (20 feet) and because prior sampling has demonstrated stratification within the well; all other wells were sampled at a single depth. All samples were submitted for analysis under proper chain-of-custody protocols to Eurofins TestAmerica Laboratories, Inc. (TestAmerica) located in Tacoma, Washington.

All groundwater samples were analyzed by the laboratory for VOC constituents of concern tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC); and MNA parameters (chloride, nitrate, nitrite, total organic carbon [TOC], sulfate, sulfide, and dissolved gases[1] [methane]). Samples were analyzed using the following methods: VOCs by US Environmental Protection Agency (EPA) Method 8260D, nitrate/nitrite and chloride/sulfate by EPA Method 300.0, TOC by EPA Method SM 5310C, sulfide by SM 4500-S2 D, and dissolved gases (methane only in 2022) by EPA Method RSK-175. Field parameters were also collected, including dissolved oxygen (DO) and oxygen-reduction potential (ORP) using a field meter (YSI Quatro Pro Plus) and ferrous iron using a HACH® field test kit (Model IR-18C). A duplicate sample was collected at LAI-MW4 (Dup1) for quality control purposes. Data will be electronically submitted to Ecology's Environmental Information Management system in spring 2022. Table 2 presents the analytical methods, practical quantitation limits (i.e., reporting limits), preservatives, and holding times. Table 3 and Figure 2 present VOC analytical results. Table 4 presents MNA analytical results. VOC time series plots are provided in Attachment 1. A copy of the laboratory data packages for the most recent sampling event (January 2022) are provided in Attachment 2.

Volatile Organic Compound Results

The VOC plume at the site is somewhat bifurcated with the main portion of the plume extending east-northeast of the site and a smaller, lower-concentration portion of the plume extending south-southeast of the site. The east-northeast segment of the plume is characterized by monitoring wells LAI-MW5, RNS-MW6, MW-13, LAI-MW1, LAI-MW2, LAI-MW3, and LAI-MW4. The south-southeast segment of the plume is characterized by monitoring wells RNS-MW2 and MW-2.

VOC analytical results from the January 2022 sampling event are consistent with historical results. At three wells (LAI-MW1, LAI-MW5, and MW-2), all VOC concentrations are below their respective cleanup levels. LAI-MW5 is located adjacent to the northeast corner of the property, LAI-MW1 bounds the northern edge of the east-northeast segment of the plume, and MW-2 is located toward the downgradient end of the south-southeast segment of the plume. At the six remaining wells, one or

[1] Typically, dissolved gasses analyzed include acetylene, methane, ethane, and ethene. Due to a laboratory shipment delay, samples were received by the analytical laboratory out of temperature range and were only analyzed for methane in 2022.

more VOCs exceeded cleanup levels. The cleanup level for both PCE and TCE is 5 micrograms per liter (µg/L), the cleanup level for cDCE is 70 µg/L, and the cleanup level for VC is 0.2 µg/L.

- LAI-MW2, MW-13, and RNS-MW6 (42.5 and 52.5 feet), which are located in the core of the east-northeast plume segment, continue to report the highest concentrations of VOCs.
  - The January 2022 results indicate concentrations above cleanup levels for PCE, TCE, and cDCE, except for cDCE at MW-13 and RNS-MW6 (52.5 feet), with PCE and TCE concentrations having the largest exceedances of cleanup levels.
  - Concentrations of PCE at these wells ranged from 350 µg/L to 680 µg/L and concentrations of TCE ranged from 98 µg/L to 190 µg/L.
  - VC was not detected at concentrations exceeding the laboratory reporting limit at any of these locations; however, the reporting limit was elevated at LAI-MW-2 (to 10 times the cleanup level) and RNS-MW6 (to 50 times the cleanup level). Typically, VC is detected above the laboratory reporting limit and above the cleanup level at LAI-MW2 and RNS-MW6. During 2021, VC was detected at a concentration of 0.89 µg/L at LAI-MW2 and at concentrations of 0.37 and 0.38 µg/L at RNS-MW6 (Landau 2021).
- Analytical results from LAI-MW3, also located in the east-northeast plume segment, indicate concentrations of PCE and TCE exceed applicable cleanup levels; however, concentrations are somewhat lower (86 µg/L and 44 µg/L, respectively) than at the three wells discussed above. LAI-MW3 is located downgradient of MW-13.
- Analytical results from RNS-MW2, located in the south-southeast plume segment, indicate that the concentration of PCE (18 µg/L) continues to exceed the applicable cleanup level. However, the concentration of PCE at adjacent well MW-2 (0.34 µg/L) is below the cleanup level. RNS-MW2 is screened slightly deeper (38.5 feet below ground surface [ft bgs]), than MW-2 (15 ft bgs).
- Analytical results from LAI-MW4 indicate that only VC exceeds the cleanup level, with a concentration of 0.49 µg/L.

Discussion of Volatile Organic Compound Data Trends

An interim soil removal action was completed at the site in 2010 and the site was subsequently filled and paved. In the downgradient well nearest the source area (RNS-MW6), a period of increasing VOC concentrations occurred following the removal action, likely due to significant soil disturbance associated with the removal action. A turning point occurred in 2013, and formerly increasing VOC concentration trends at RNS-MW6 began to decline. In wells farther downgradient, the shift in concentration trends from increasing to decreasing occurred later, in 2016. The following sections provide detailed observations regarding VOC concentration trends. VOC concentration time series plots are provided in Attachment 1.

East-Northeast Plume Segment

- LAI-MW1 and LAI-MW5 have historically shown decreasing concentration trends with recent trends indicating that concentrations of all VOCs remain below the laboratory reporting limits.

LAI-MW5 is located adjacent to the former source area, and LAI-MW1 is located downgradient and bounds the northern edge of the plume.

- LAI-MW4 has historically shown decreasing or non-detect concentration trends, with recent trends indicating that concentrations of TCE, cDCE, and VC may be increasing. LAI-MW4 is the farthest downgradient well and is intended to monitor the downgradient extent of the plume.
- RNS-MW6, located immediately downgradient of the source area, is sampled at two depths within the screen.
  - The data trends at the 52.5-foot sampling depth indicate decreases in PCE, TCE, and cDCE concentrations with lower than the historical maximums in 2012 and 2013. Overall, data trends are relatively stable for PCE, TCE, and cDCE. The VC concentration is generally decreasing. VC was not detected above the elevated laboratory reporting limit of 10 µg/L in 2022 (VC was detected at a concentration of 0.37 µg/L in 2021).
  - VOC concentration trends at the 42.5-foot depth vary by constituent. PCE, TCE, and cDCE showed relatively stable or decreasing trends since April 2013. However, data trends for these three constituents are difficult to interpret due to variability. As mentioned above, VC was not detected above the elevated laboratory reporting limit of 10 µg/L in 2022. Concentrations of VC in well RNS-MW6 at the 42.5-foot depth have been declining in concentration since April 2013 but do periodically exceed the cleanup level.
- Data trends in the mid-plume region are generally declining.
  - Concentrations at MW-13 show stable or decreasing trends for all four VOCs in 2022. MW-13 is located down-gradient of the source area and RNS-MW6.
  - At LAI-MW2, peak concentrations of PCE, TCE, and cDCE occurred in 2016, somewhat later than other upgradient wells. After 2016, concentrations of all four VOCs showed declining trends through 2021. Concentrations of PCE, TCE, and cDCE in 2022 are somewhat elevated compared to recent results. VC was not detected above the elevated laboratory reporting limit of 2 µg/L in 2022 (VC was detected at a concentration of 0.89 µg/L in 2021).
  - LAI-MW3 exhibits relatively stable trends for PCE, TCE, and cDCE from 2016 to present. VC has not been detected at this well since 2016.
- Data trends at downgradient well LAI-MW4 show potentially increasing trends (although concentrations are still relatively very low). Concentrations of TCE and VC were non-detect for approximately seven years, but detections have appeared over the last three years. cDCE was declining until 2016 but has shown an increasing trend through 2021 and is non-detect in 2022. PCE remains non-detect.

South-Southeast Plume Segment

- At RNS-MW2, only PCE exceeded the applicable cleanup level in 2022. PCE concentrations showed an increasing trend until 2016; however, concentrations have been declining since then.

- At MW-2, no constituents exceeded the applicable cleanup level in 2022. Concentrations show decreasing trends for all four VOCs through 2013. In 2016, concentrations of all VOCs rebounded but have continued to show decreasing trends through 2022.

Monitored Natural Attenuation Results

Natural attenuation of chlorinated ethenes occurs through several mechanisms, with the primary mechanism being biologically mediated reductive dechlorination. For reductive dechlorination to occur, the aquifer must be reducing and a food source (electron donor) for the bacteria must be available. Measures of aquifer redox conditions include DO, ORP, nitrate, ferrous iron, sulfate, and methane. TOC concentration is a measure of available electron donor. In general, low concentrations of DO, nitrate, and sulfate, and detections or elevated concentrations of ferrous iron and methane are indicators of reduced aquifer conditions. However, the redox state of the aquifer can be variable and complex, and assessment typically requires evaluation of multiple indicators.

MNA data appear to suggest the most favorable conditions for reductive dechlorination are at LAI-MW5 (near the source area) and LAI-MW4 (the most downgradient well) where ferrous iron concentrations are highest. Elevated TOC concentrations also occur at these wells, indicating the presence of electron donor. Indicators of reducing aquifer conditions and electron donor availability at LAI-MW4 and LAI-MW5 during the January 2022 sampling event are summarized below.

- Ferrous iron was detected in both wells at concentrations of 4.8 milligrams per liter (mg/L) at LAI-MW4 and 6.2 mg/L at LAI-MW5.
- Nitrate and nitrite were detected at low concentrations at LAI-MW4 and LAI-MW5. Detections of sulfate are relatively low at LAI-MW5 but have increased at LAI-MW4 in 2022 (indicative of saltwater intrusion).
- Methane was detected at a concentration of 0.16 mg/L at LAI-MW4 and 9.3 mg/L at LAI-MW5.
- ORP readings were negative at both wells.
- TOC concentrations were somewhat elevated at both wells (concentrations of 2.5 mg/L and 6.2 mg/L at LAI-MW4 and LAI-MW5, respectively).

At the remaining seven wells, results indicate some capacity for reductive dechlorination. Ferrous iron is present at four of the seven wells, TOC was detected above the laboratory reporting limit at all wells, and nitrate and nitrite are low or not detected. Additionally, VOC concentrations at most wells appear to be declining or stable. January 2022 MNA analytical results are provided in Table 4.

Occurrence of Problems

Upon arrival at MW-13, it was observed that the well monument lid was missing. The monument lid was replaced on January 13, 2022.

Planned Groundwater Monitoring Activities

Groundwater monitoring results will continue to be submitted to Ecology 60 days after completion of sampling activities. The next scheduled sampling event will occur in January 2023.

Use of this Technical Memorandum

This technical memorandum has been prepared for the exclusive use of the City of Tacoma and Washington State Department of Ecology for specific application to the former Sauro's Cleanerama Groundwater Monitoring project. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Landau. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Landau, shall be at the user's sole risk. Landau warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. Landau makes no other warranty, either express or implied.

Please contact us if you have any questions concerning groundwater monitoring activities at the site or the results presented in this status report. This document has been prepared under the supervision and direction of the following key staff.

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References

Coleman, M. 2018. Re: Draft Sauro's Long-Term Groundwater Monitoring Status Report No. 4. From Marv Coleman, Toxics Cleanup Program, Washington State Department of Ecology, to Sierra Mott, Senior Project Scientist, Landau Associates, Inc. January 22.

Ecology. 2014. Draft: Cleanup Action Plan, Former Sauro's Cleanerama Site, Tacoma, Washington. Washington State Department of Ecology. December.

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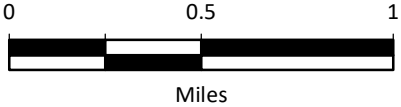
Landau. 2017. Draft Technical Memorandum: Long-Term Groundwater Monitoring Status Report No. 4 for July 2017, Former Sauro's Cleanerama Site, Tacoma, Washington. Landau Associates, Inc. September 7.

Landau. 2021. Technical Memorandum: Long-Term Groundwater Monitoring Status Report No. 8, January 2021 Annual Groundwater Monitoring, Former Sauro's Cleanerama Site; Tacoma,Washington. Landau Associates, Inc. April 19.

Attachments

Figure 1:	Vicinity Map
Figure 2:	Monitoring Well Network and Volatile Organic Compound Concentrations in Groundwater (January 2022)
Table 1:	Sample Matrix
Table 2:	Laboratory Analytical and Field Parameter Details
Table 3:	Groundwater Analytical Results for Constituents of Concern
Table 4:	Monitored Natural Attenuation Parameters
Attachment 1:	Constituents of Concern Concentration Time Series Plots
Attachment 2:	January 2022 Laboratory Data Package



Data Source: Esri.

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LANDAU ASSOCIATES

Sauro's Cleanerama Tacoma, Washington	**Vicinity Map**	Figure 1

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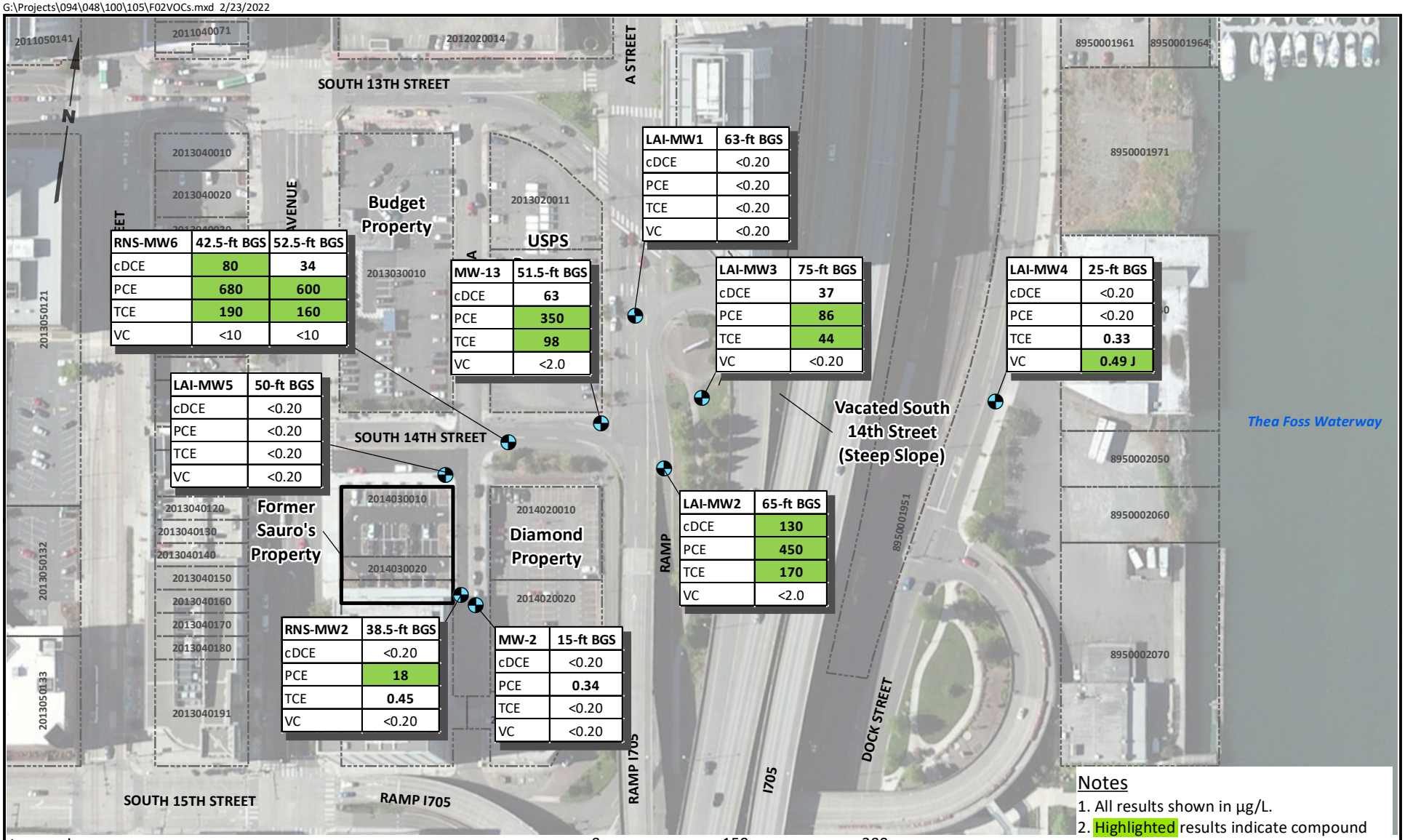

RNS-MW6	42.5-ft BGS	52.5-ft BGS
cDCE	**80**	**34**
PCE	**680**	**600**
TCE	**190**	**160**
VC	<10	<10

MW-13	51.5-ft BGS
cDCE	**63**
PCE	**350**
TCE	**98**
VC	<2.0

LAI-MW1	63-ft BGS
cDCE	<0.20
PCE	<0.20
TCE	<0.20
VC	<0.20

LAI-MW3	75-ft BGS
cDCE	**37**
PCE	**86**
TCE	**44**
VC	<0.20

LAI-MW4	25-ft BGS
cDCE	<0.20
PCE	<0.20
TCE	**0.33**
VC	**0.49 J**

LAI-MW5	50-ft BGS
cDCE	<0.20
PCE	<0.20
TCE	<0.20
VC	<0.20

LAI-MW2	65-ft BGS
cDCE	**130**
PCE	**450**
TCE	**170**
VC	<2.0

RNS-MW2	38.5-ft BGS
cDCE	<0.20
PCE	**18**
TCE	**0.45**
VC	<0.20

MW-2	15-ft BGS
cDCE	<0.20
PCE	**0.34**
TCE	<0.20
VC	<0.20

Notes

1. All results shown in µg/L.
2. Highlighted results indicate compound detected above cleanup level.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Long-Term Groundwater Monitoring Well (and Sampling Depth)
- Subject Property
- Tax Parcels with Parcel ID

0 150 300

Scale in Feet

Data Source: Esri World Imagery, 2016.

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Sauro's Cleanerama
Tacoma, Washington

Monitoring Well Network and VOC Concentrations in Groundwater (January 2022)

Figure 2

Table 1
Sample Matrix
Former Sauro's Cleanerama Site – Tacoma, Washington

Location	VOC Sampling Depth (ft)	VOC Sampling Method	MNA Parameters Sampling Depth (ft)	MNA Parameters Sampling Method
LAI-MW1	63	PDB	63	WAT
LAI-MW2	65	PDB	65	WAT
LAI-MW3	75	PDB	75	WAT
LAI-MW4	25	WAT	25	WAT
LAI-MW5	50	PDB	50	WAT
MW-2	15	PP	15	PP
MW-13	51.5	PDB	51.5	WAT
RNS-MW2	38.5	PDB	38.5	WAT
RNS-MW6[a]	42.5 and 52.5	PDB	47.5	WAT

Note:

[a] For RNS-MW6, where there are two VOC sampling depths, the MNA sampling depth is the mid-point between the two VOC sampling depths.

Abbreviations/Acronyms:

ft = feet
HDPE = high-density polyethylene
MNA = monitored natural attenuation
PDB = passive diffusion bag
PP = peristaltic pump with dedicated tubing
VOC = volatile organic compound
WAT = (dedicated) Waterra foot valve (with dedicated 5/8-inch HDPE tubing)

Table 2
Laboratory Analytical and Field Parameter Details
Former Sauro's Cleanerama Site – Tacoma, Washington

Groundwater Analytical Parameters	EPA Analytical Method	Practical Quantitation Limit	Preservation	Maximum Holding Time (Days)
Volatile Organic Compounds				
Tetrachloroethene	8260C	0.2 µg/L	Add HCl to pH<2; Store cool at 6°C	14
Trichloroethene	8260C	0.2 µg/L	Add HCl to pH<2; Store cool at 6°C	14
cis-1,2-Dichloroethene	8260C	0.2 µg/L	Add HCl to pH<2; Store cool at 6°C	14
Vinyl Chloride	8260C	0.2 µg/L	Add HCl to pH<2; Store cool at 6°C	14
Monitored Natural Attenuation				
Chloride	300.0	0.90 mg/L	Store cool at 6°C	28
Nitrate (NO_3) (Total) as N	300.0	0.2 mg/L[a]	Store cool at 6°C	48 hours
Nitrite (NO_2) (Total) as N	300.0	0.4 mg/L[a]	Store cool at 6°C	48 hours
Total Organic Carbon	SM 5310B	1.00 mg/L	Add 2mL 9N H2SO4 pH<2; Store at 6°C	28
Sulfate (SO_4) (Total)	300.0	1.2 mg/L	Store cool at 6°C	28
Sulfide (SO_2) (Total)	SM 4500-S2 D	0.050 mg/L	Store cool at 6°C	7
AMEE	RSK-175	0.0050 mg/L	Store cool at 6°C	14

Groundwater Field Parameters	Data Collection Method	Instrument	Units
Monitored Natural Attenuation			
Conductivity	Field meter	YSI[b]	µS/cm
Dissolved Oxygen	Field meter	YSI	mg/L
Oxidation Reduction Potential	Field meter	YSI	units +/- mV
pH	Field meter	YSI	unitless
Temperature	Field meter	YSI	(°C)
Ferrous Iron (Fe^{2+})	Field meter	Hach® Kit	mg/L
Turbidity	Field meter	Turbidity Meter	NTU
Water Level	Field meter	Water Level Indicator	0.01 ft

Notes:

[a] Reporting limits for nitrate and nitrite were raised prior to the July 2016 sampling event due to laboratory capabilities.

[b] YSI shall be recalibrated daily.

Abbreviations/Acronyms:

AMEE = acetylene, methane, ethane, and ethene
°C = degrees Celsius
EPA = US Environmental Protection Agency
ft = foot
µg/L = micrograms per liter
mg/L = milligrams per liter
mL = milliliters
mV = millivolts
µS/cm = microSiemens per centimeter
NTU = nephelometric turbidity units

Table 3
Groundwater Analytical Results for Constituents of Concern
Former Sauro's Cleanerama Site – Tacoma, Washington

Analyte	Groundwater MTCA Method A CUL or Federal/State MCL (µg/L)	Sampling Location, Sampling Date, Laboratory Sample ID, Sample Type										
		LAI-MW1 1/11/2022 580-109215-2 N	LAI-MW2 1/11/2022 580-109215-3 N	LAI-MW3 1/11/2022 580-109215-4 N	LAI-MW4 1/11/2022 580-109215-5 N	LAI-MW4 1/11/2022 580-109215-6 FD	LAI-MW5 1/12/2022 580-109215-7 N	MW-2 1/11/2022 580-109215-8 N	MW-13 1/12/2022 580-109215-10 N	RNS-MW2 1/11/2022 580-109215-9 N	RNS-MW6-42.5 1/12/2022 580-109215-11 N	RNS-MW6-52.5 1/12/2022 580-109215-12 N
Volatile Organic Compounds (µg/L; SW-846 8260C)												
cis-1,2-Dichloroethene	70[a]	0.20 U	**130**	**37**	0.20 U	**0.25**	0.20 U	0.20 U	**63**	0.20 U	**80**	**34**
Tetrachloroethene	5	0.20 U	**450**	**86**	0.20 U	0.20 U	0.20 U	**0.34**	**350**	**18**	**680**	**600**
Trichloroethene	5	0.20 U	**170**	**44**	**0.33**	**0.29**	0.20 U	0.20 U	**98**	**0.45**	**190**	**160**
Vinyl Chloride	0.2	0.20 U	2.0 U	0.20 U	**0.49 J**	0.20 UJ	0.20 U	0.20 U	2.0 U	0.20 U	10 U	10 U

Notes:

U = The compound was not detected at the reported concentration.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Bold = detected analyte

Green highlighting = compound detected at concentrations above cleanup criteria.

[a] Cis-1,2-Dichloroethene does not have a MTCA Method A CUL for groundwater; therefore, the Federal/State primary MCL value of 70 µg/L is used as the CUL.

Abbreviations and Acronyms:

µg/L = micrograms per liter
CUL = cleanup level
FD = field duplicate
ID = identification
MCL = maximum contaminant levels
MTCA = Model Toxics Control Act
N = primary sample

Table 4
Monitored Natural Attenuation Parameters
Former Sauro's Cleanerama Site – Tacoma, Washington

Analyte	Sampling Location, Sampling Date, Laboratory Sample ID, Sample Type									
	LAI-MW1 1/11/2022 580-109215-2 N	LAI-MW2 1/11/2022 580-109215-3 N	LAI-MW3 1/11/2022 580-109215-4 N	LAI-MW4 1/11/2022 580-109215-5 N	LAI-MW4 1/11/2022 580-109215-6 FD	LAI-MW5 1/12/2022 580-109215-7 N	MW-2 1/11/2022 580-109215-8 N	MW-13 1/12/2022 580-109215-10 N	RNS-MW2 1/11/2022 580-109215-9 N	RNS-MW6-52.5 1/12/2022 580-109215-12 N
Natural Attenuation Parameters (mg/L; EPA 300.0/SM 4500-S2-D/SM 5310B)										
Chloride	**89**	**24**	**23**	**5,200**	**5,300**	**85**	**50**	**27**	**67 J**	**39**
Nitrogen, Nitrate (as N)	**1.5**	**0.29**	**0.82**	**1.1**	**0.96 J**	0.20 U	**2.9**	**0.63**	0.20 U	**0.67**
Nitrogen, Nitrite	0.40 U	0.40 U	0.40 U	0.40 U	R	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Sulfate	**19**	**24**	**24**	**720**	**710**	**4.9**	**43**	**23**	**23**	**23**
Sulfide, Total	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U	0.050 U
Total Organic Carbon (TOC)	**1.3**	**1.8**	**1.7**	**2.5**	**2.5**	**6.2**	**2.8**	**1.6**	**1.8**	**2.0**
Dissolved Gases (mg/L; RSK-175)										
Methane	**0.0080 J**	**0.0061 J**	R	**0.16 J**	**0.19 J**	**9.3 J**	**0.030 J**	**0.0060 J**	R	**0.032 J**
Field Parameters										
Dissolved Oxygen (mg/L)	0.29	5.21	3.76	0.46	0.47	1.19	1.59	2.39	6.24	0.45
Oxidation Reduction Potential (mV)	2.0	18.83	38.8	-102.4	-100.5	-38.7	-147.7	107.5	59.0	115.1
Ferrous Iron (mg/L)	**1.4**	**2**	0.0	**4.8**	**4.8**	**6.2**	**0.5**	0.0	**0.5**	0.0

Notes:

Bold text indicates detected analyte.

U = The compound was not detected at the reported concentration.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting quality control criteria. The analyte may or may not be present in the sample.

Abbreviations and Acronyms:

EPA = US Environmental Protection Agency

FD = field duplicate

ID = identification

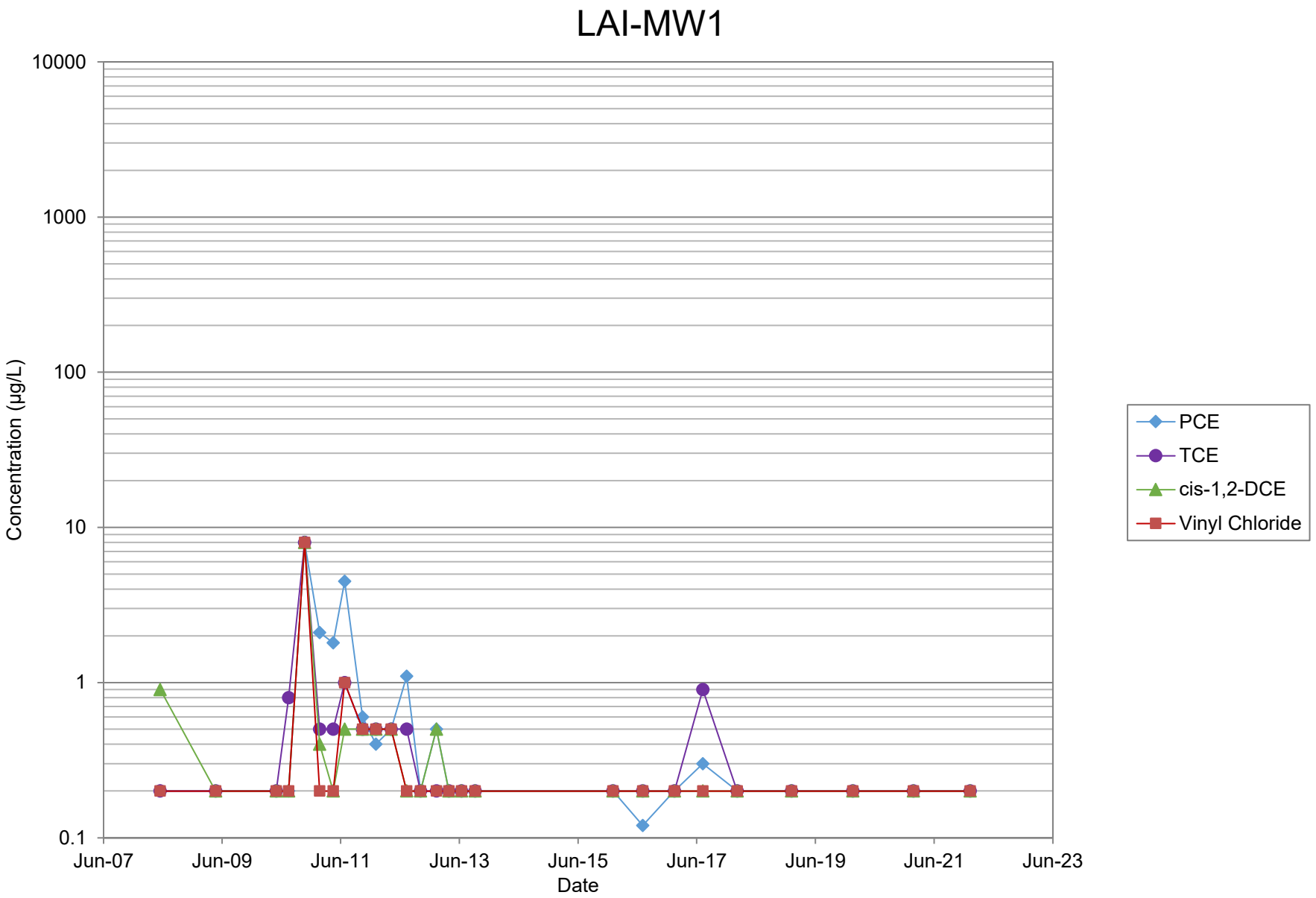
mg/L = milligrams per liter

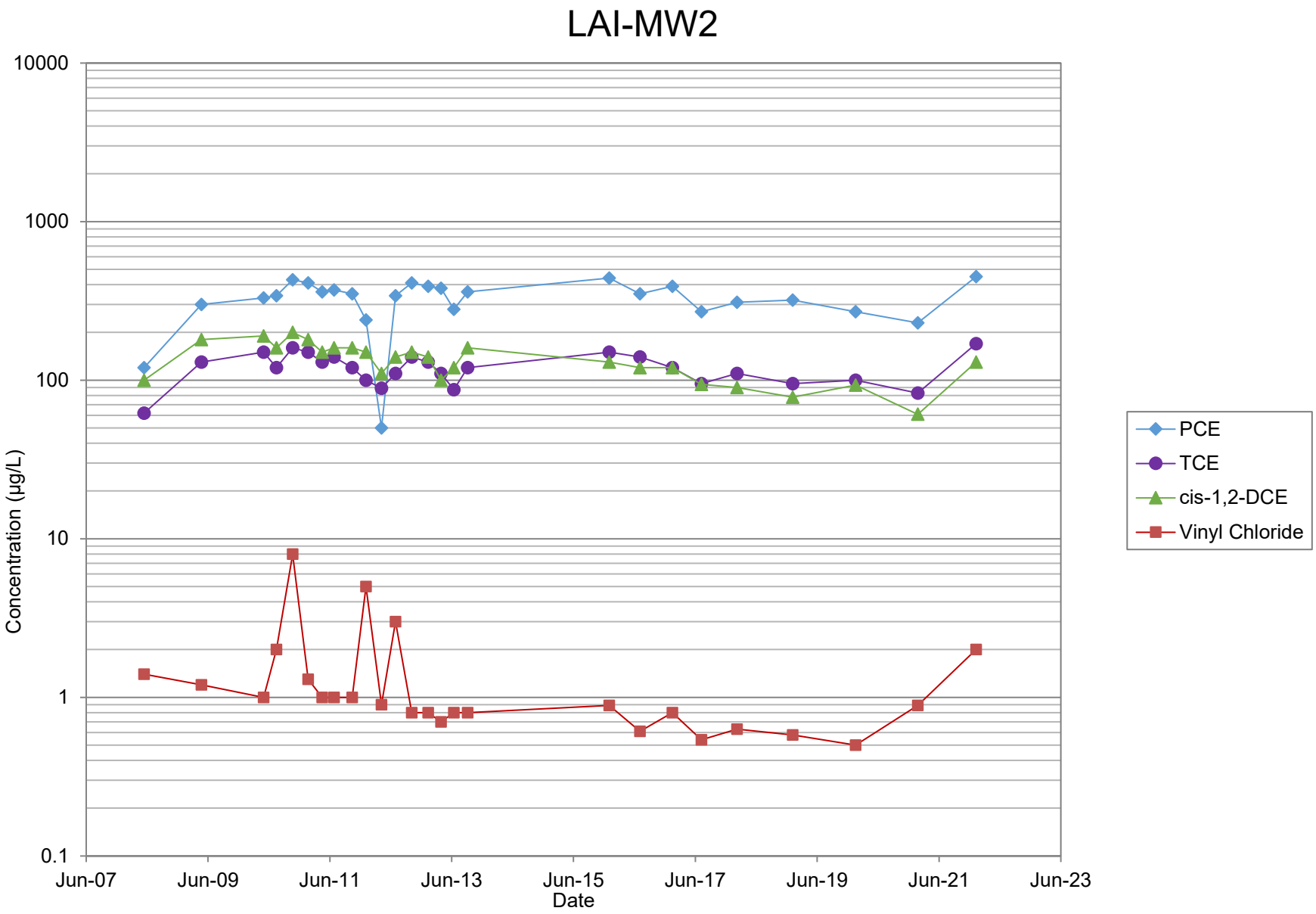
mV = millivolt

N = primary sample

ATTACHMENT 1

Constituents of Concern Concentration Time Series Plots


LAI-MW1
10000
1000
100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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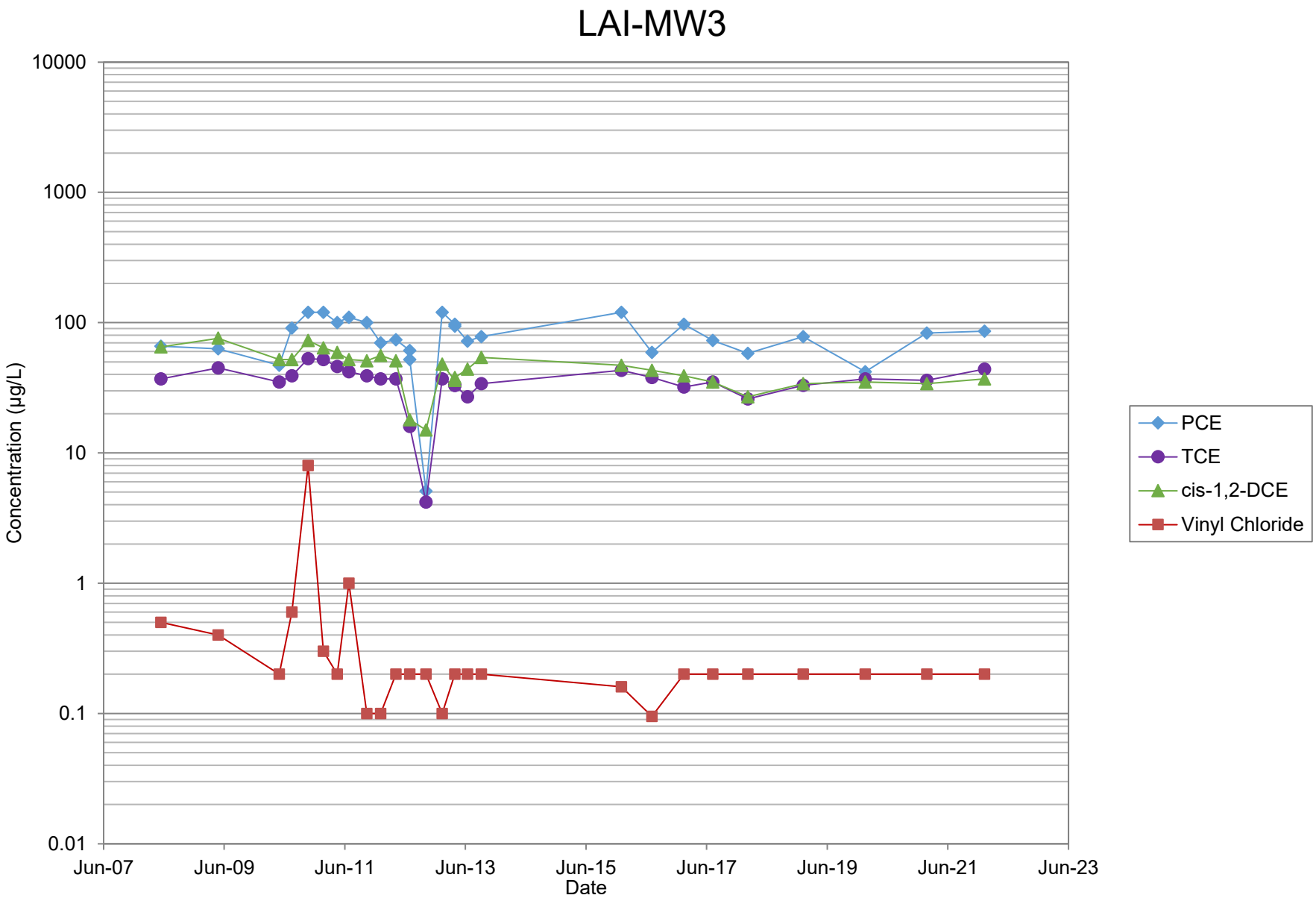
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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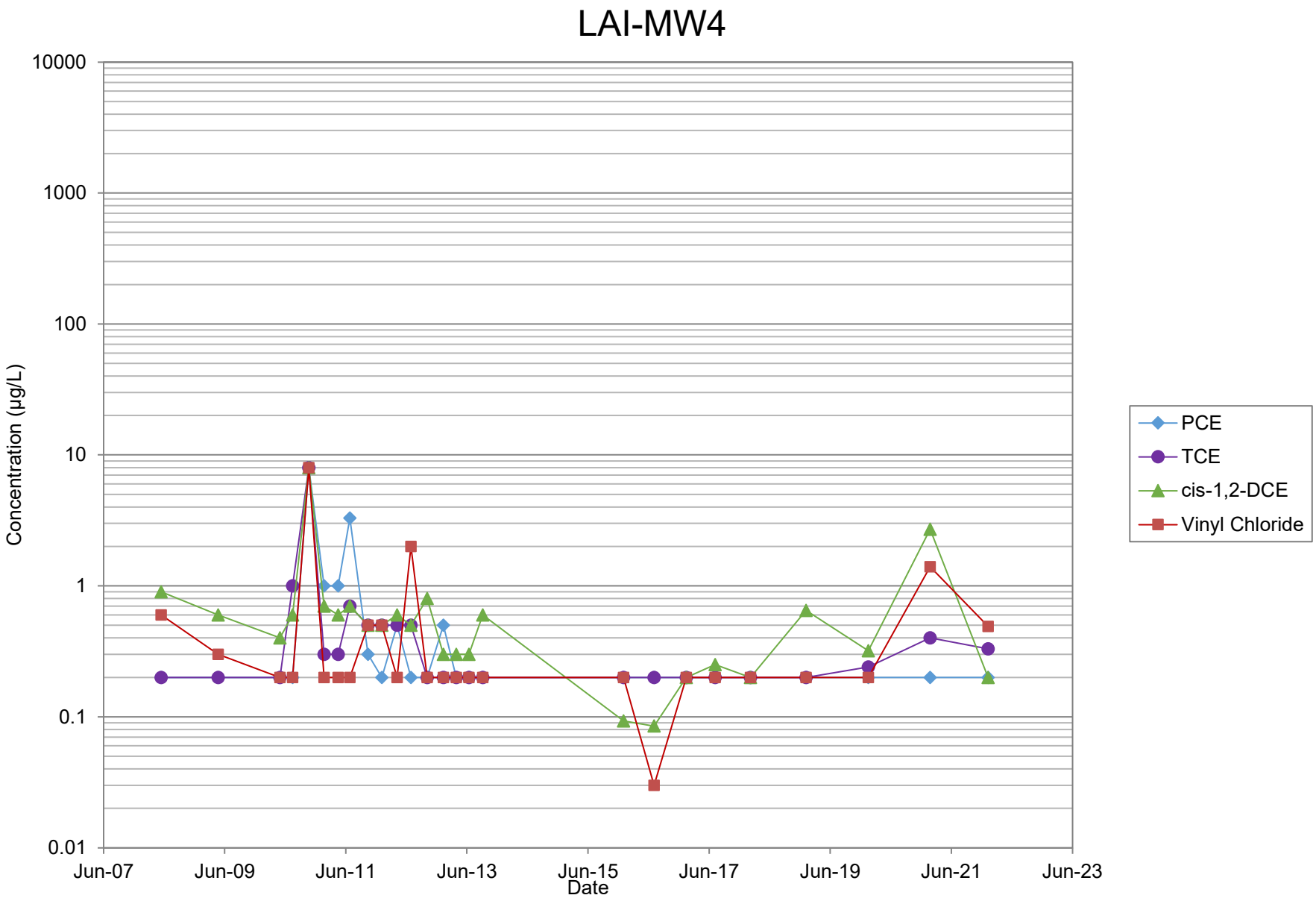
1000
100
10
1
0.1
0.01
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride


LAI-MW4
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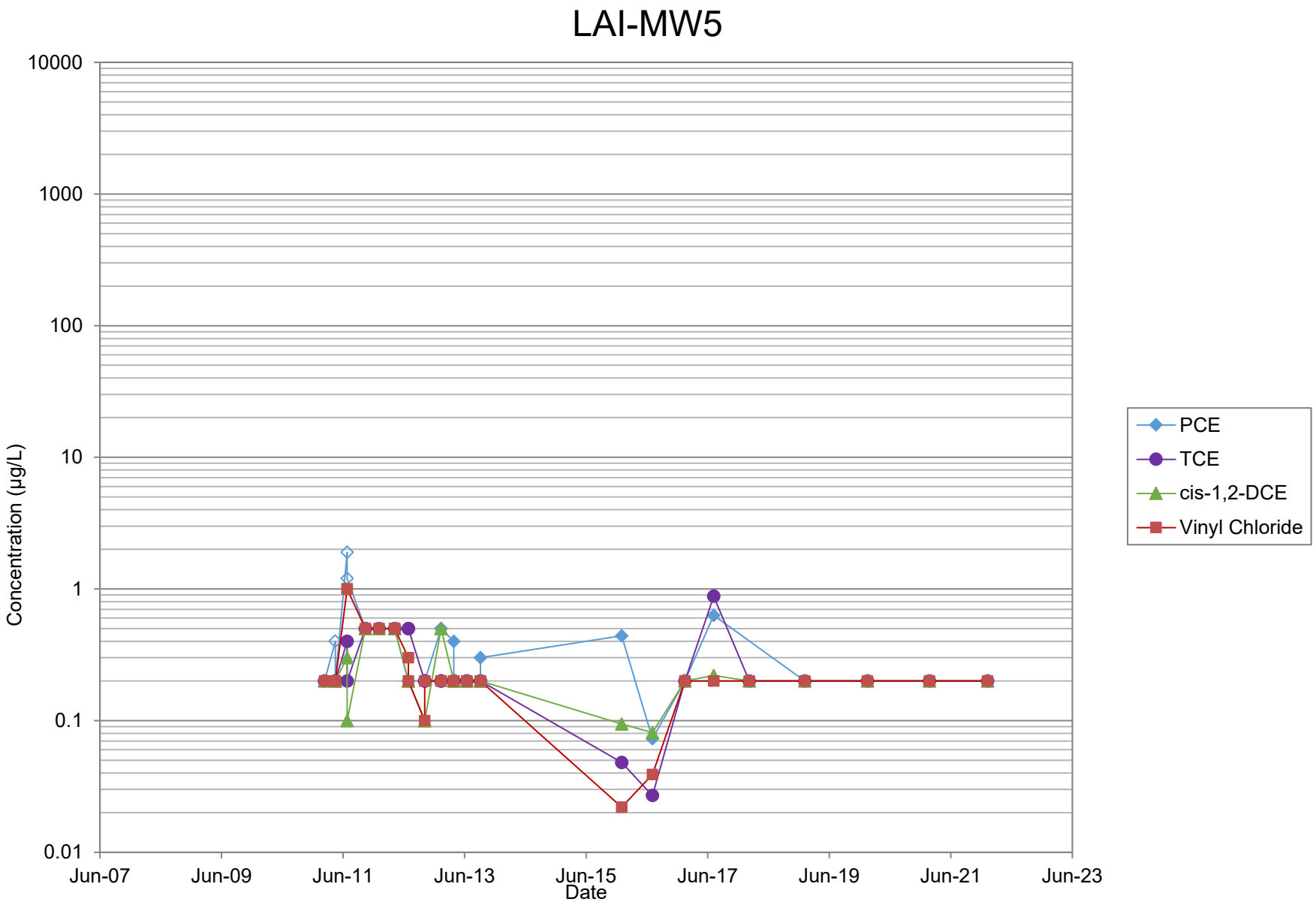
100
10
1
0.1
0.01
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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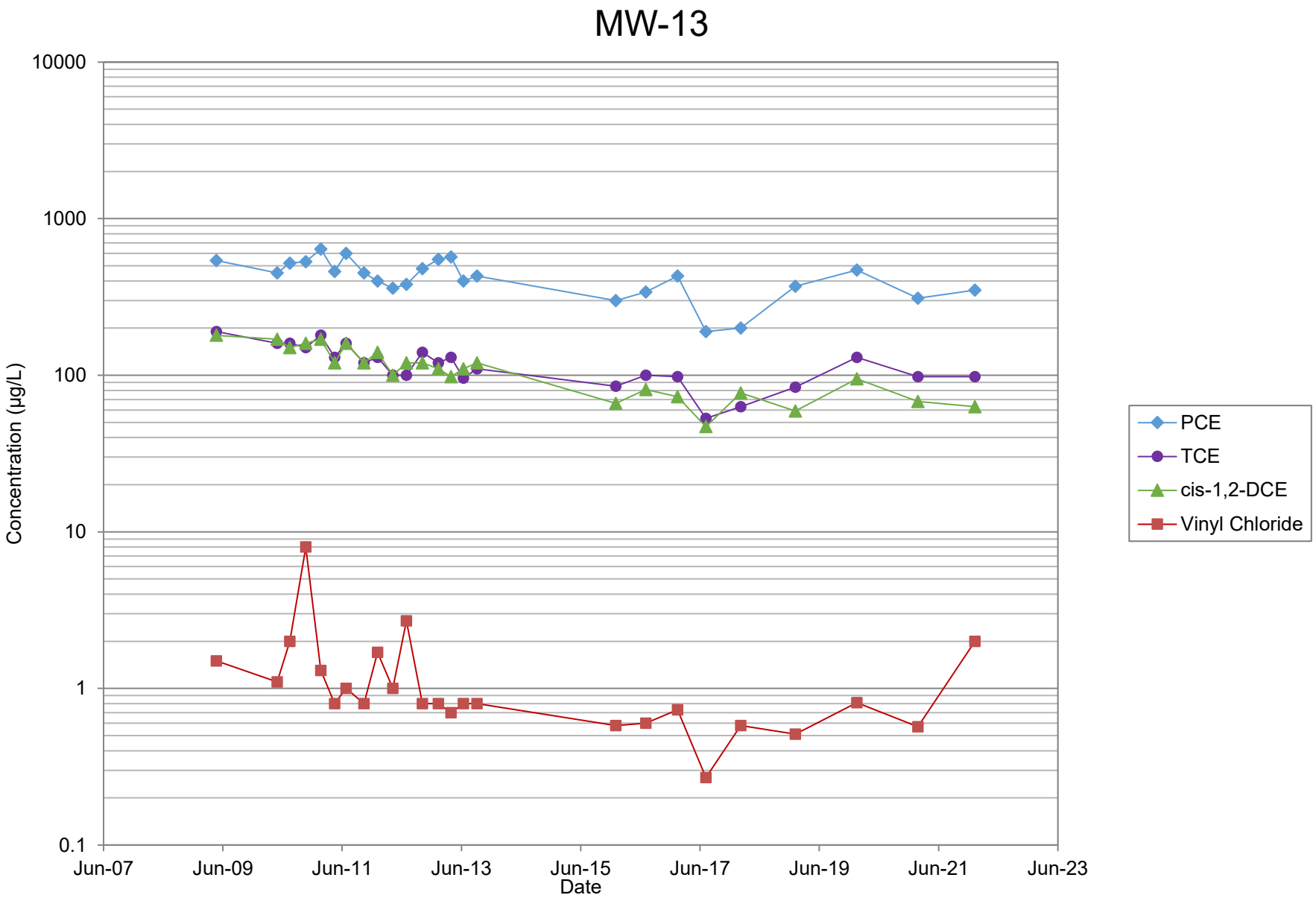
1000
100
10
1
0.1
0.01
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
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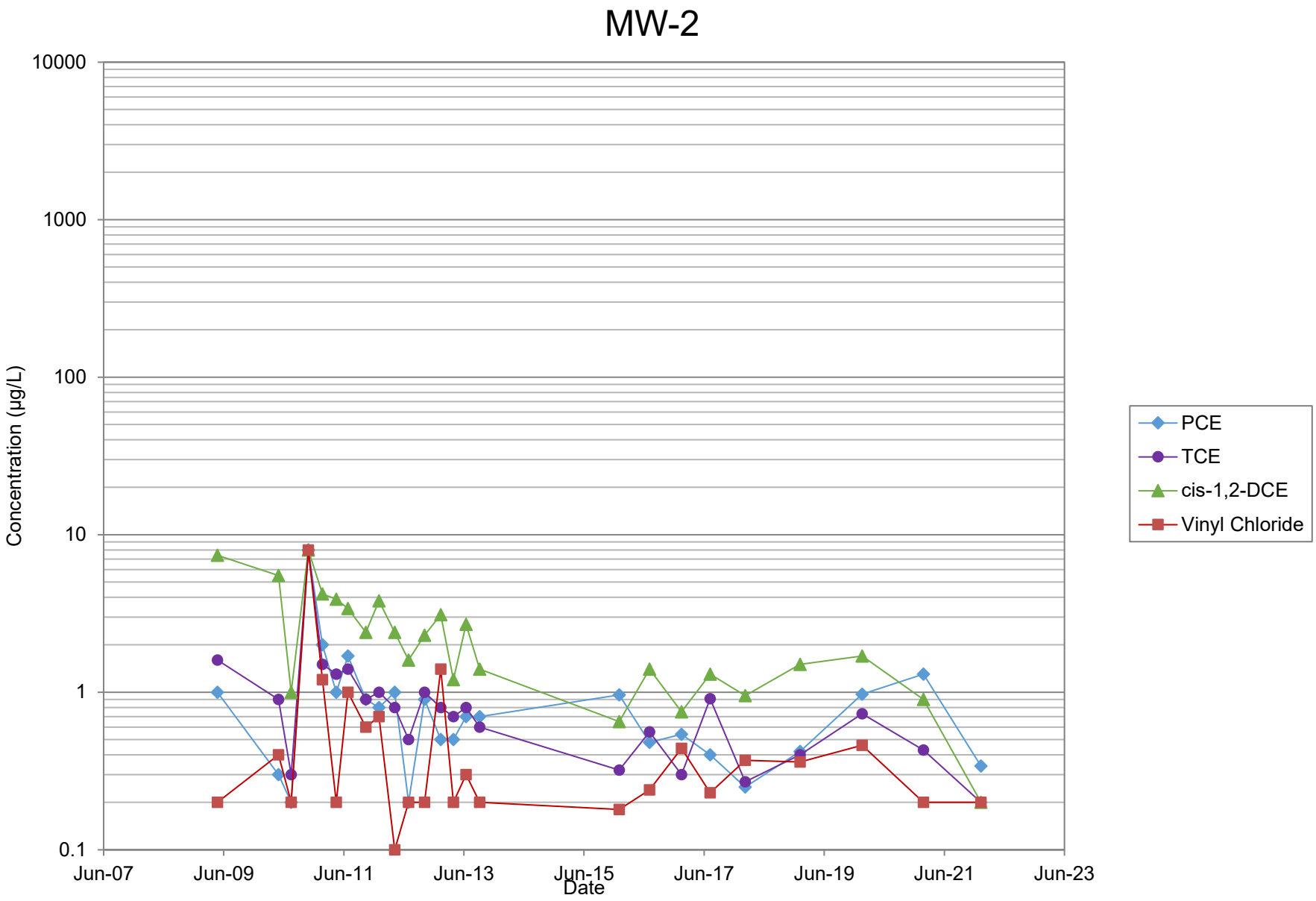
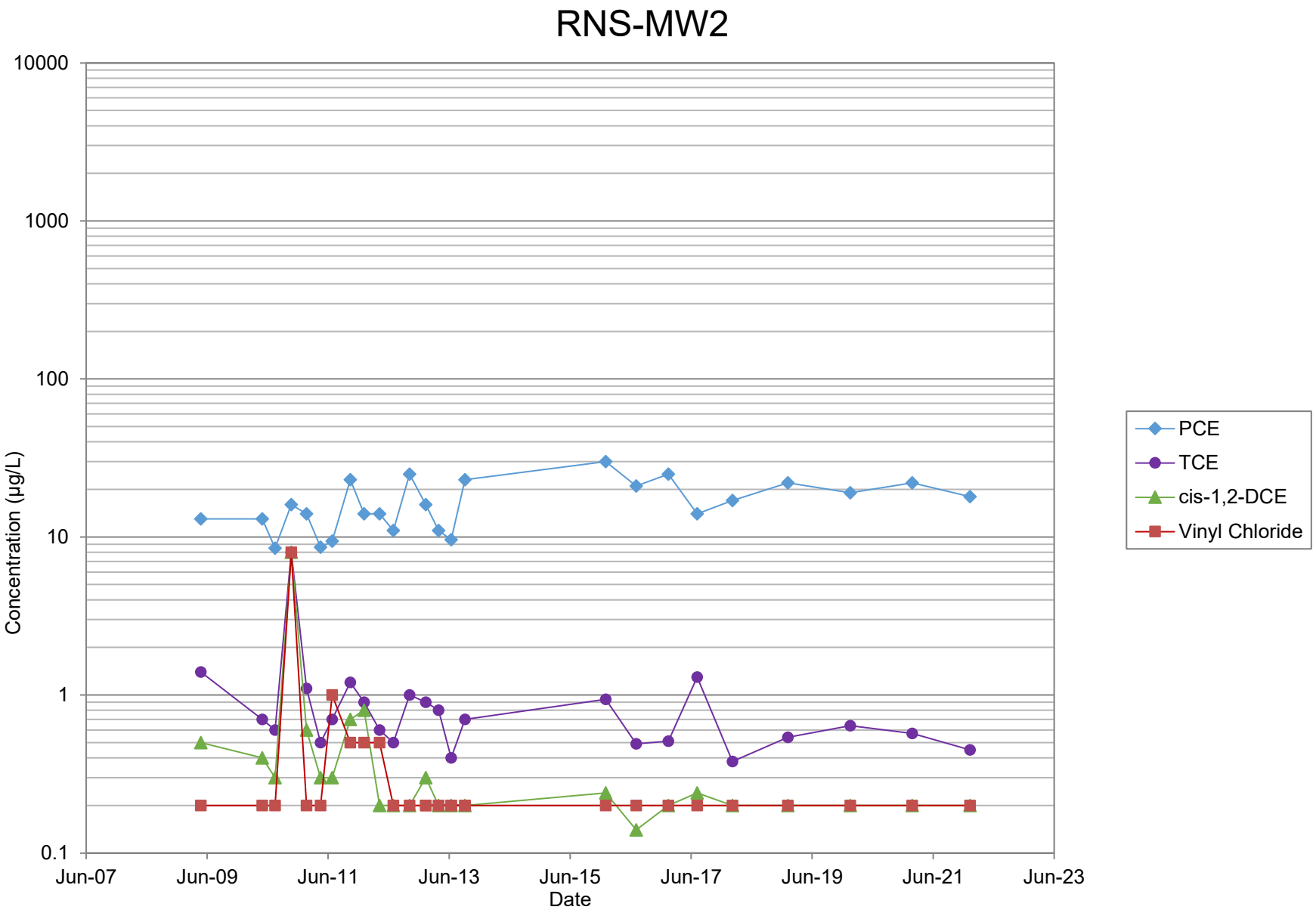
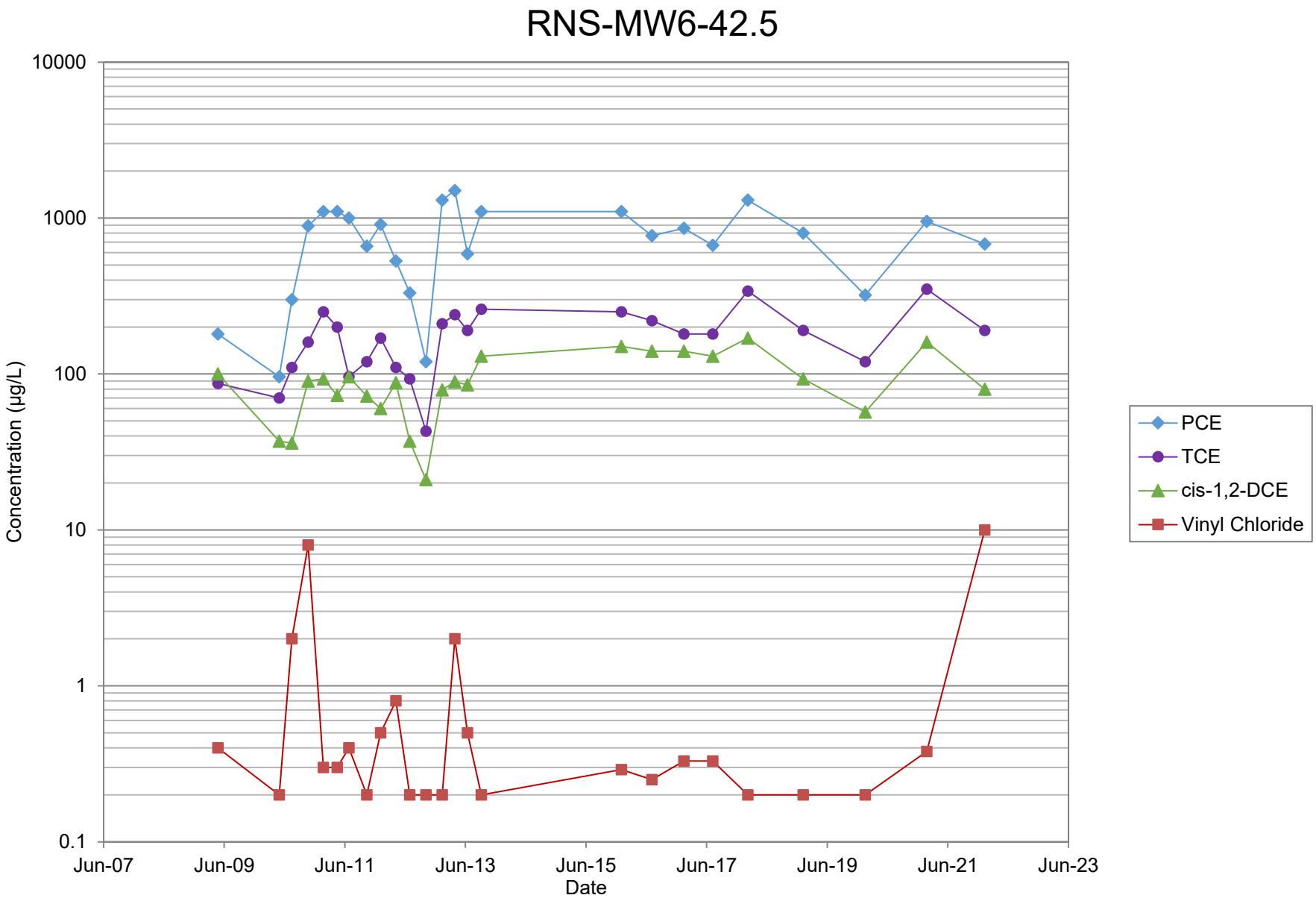
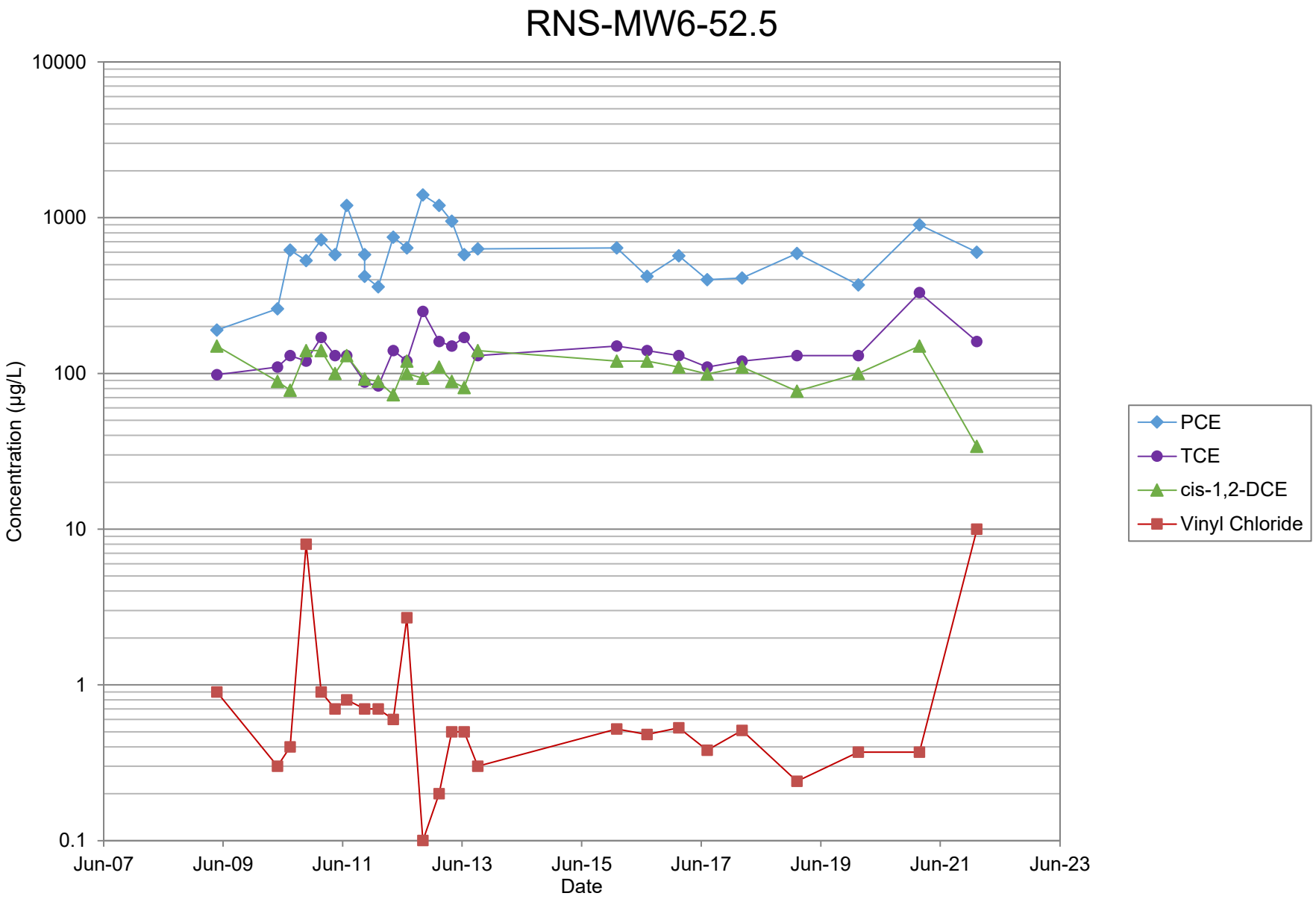
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride


MW-2
10000
1000
100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride


RNS-MW2
10000
1000
100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride


RNS-MW6-42.5
10000
1000
100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride


RNS-MW6-52.5
10000
1000
100
10
1
0.1
Concentration (µg/L)
Jun-07
Jun-09
Jun-11
Jun-13
Jun-15
Jun-17
Jun-19
Jun-21
Jun-23
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride

ATTACHMENT 2

January 2022 Laboratory Data Package

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

Laboratory Job ID: 580-109215-1
Client Project/Site: Sauro's - Groundwater Monitoring
Revision: 1

For:
Landau & Associates, Inc.
2107 South C Street
Tacoma, Washington 98402

Attn: Sierra Mott

Authorized for release by:
2/7/2022 2:09:57 PM
Pauline Matlock, Project Manager
(253)922-2310
pauline.matlock@eurofinset.com

Designee for

Sheri Cruz, Project Manager I
(253)922-2310
Sheri.Cruz@Eurofinset.com

Table of Contents

Job ID: 580-109215-1

Laboratory: Eurofins Seattle

Narrative

Job Narrative
580-109215-1

Comments
Revised report to fix method 300_48hr for sample LAI-MW4-20220111 (580-109215-5) and DUP1-20220111 (580-109215-6). Lab confirmed wrong container was previously used for sample 6 when analyzing method 300 for nitrates. Lab reanalyzed out of hold to confirm. Client requested out of hold run to be reported for sample 6 only.

Receipt
The samples were received on 1/12/2022 11:18 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1º C and 3.9º C.

Receipt Exceptions
The following sample(s) was received at the laboratory without a sample collection time documented on the chain of custody: 109215-1. The default date of 01/11/2022 and time of 0001 were used for the trip blank.

Vials for these samples arrived in Denver 01/17/2021 due to delay in transit. LAI-MW1-20220111 (580-109215-2), LAI-MW2-20220111 (580-109215-3), LAI-MW3-20220111 (580-109215-4), LAI-MW4-20220111 (580-109215-5), DUP1-20220111 (580-109215-6), LAI-MW5-20220112 (580-109215-7), MW2-20220111 (580-109215-8), RNS-MW2-20220111 (580-109215-9), MW13-20220112 (580-109215-10) and RNS-MW6-52.5-20220112 (580-109215-12)

GC/MS VOA
Method 8260D: The following samples were diluted to bring the concentration of target analytes within the calibration range: LAI-MW2-20220111 (580-109215-3), MW13-20220112 (580-109215-10), RNS-MW6-42.5-20220112 (580-109215-11) and RNS-MW6-52.5-20220112 (580-109215-12). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: LAI-MW3-20220111 (580-109215-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
Method RSK-175: The sample duplicate (DUP) precision for analytical batch 280-563833 was outside control limits. The samples was re-analyzed. The parent sample with the higher recovery for methane will be reported as secondary and the re-analysis as primary.

Method RSK-175: Sample re-analyzed due to the % RPD of the sample duplicate being outside of the criteria. Reporting re-analysis as primary and the original parent as secondary. RNS-MW6-52.5-20220112 (580-109215-12)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 300.0: Reanalysis of the following sample was performed outside of the analytical holding time due to analyst oversight: DUP1-20220111 (580-109215-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
H	Sample was prepped or analyzed beyond the specified holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-109215-1	TRIP BLANK-20220111	Water	01/11/22 00:01	01/12/22 11:18
580-109215-2	LAI-MW1-20220111	Water	01/11/22 11:30	01/12/22 11:18
580-109215-3	LAI-MW2-20220111	Water	01/11/22 12:40	01/12/22 11:18
580-109215-4	LAI-MW3-20220111	Water	01/11/22 14:05	01/12/22 11:18
580-109215-5	LAI-MW4-20220111	Water	01/11/22 08:30	01/12/22 11:18
580-109215-6	DUP1-20220111	Water	01/11/22 08:32	01/12/22 11:18
580-109215-7	LAI-MW5-20220112	Water	01/12/22 10:10	01/12/22 11:18
580-109215-8	MW2-20220111	Water	01/11/22 15:15	01/12/22 11:18
580-109215-9	RNS-MW2-20220111	Water	01/11/22 15:31	01/12/22 11:18
580-109215-10	MW13-20220112	Water	01/12/22 09:35	01/12/22 11:18
580-109215-11	RNS-MW6-42.5-20220112	Water	01/12/22 07:20	01/12/22 11:18
580-109215-12	RNS-MW6-52.5-20220112	Water	01/12/22 08:20	01/12/22 11:18

Chain-of-Custody Record

LANDAU ASSOCIATES

- [ ] North Seattle (206) 631-8660
- [x] Tacoma (253) 926-2493
- [ ] Olympia (360) 791-3178
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080

Date 1/12/22

Page 1 of 1

Turnaround Time: (Standard) / Accelerated

Project Name: Sauvo's

Project No.: 0094048.100.105

Project Location/Event: Tacoma, WA / Jan 2022

Sampler's Name: SMR/JBD

Project Contact: Katie Gauglitz

Send Results To: Dani Jorgensen, Katie Gauglitz

Special Handling Requirements:

Shipment Method:

Stored on ice: (Yes) / No

Testing Parameters: VOCs (8260D LL), AMOE (CRSK 175), TOC (SM 5310C), Chloride/Sulfate (300), Nitrate/Nitrite (300), Sulfide (SM 4500)

	Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs	AMOE	TOC	Chloride/Sulfate	Nitrate/Nitrite	Sulfide
1	Tripblank-20220111	—	—	Aq	2	X					
2	LAI-MW1-20220111	1/11/22	1130	Aq	9	X	X	X	X	X	X
3	LAI-MW2-20220111		1240	Aq	9	X	X	X	X	X	X
4	LAI-MW3-20220111		1405	Aq	9	X	X	X	X	X	X
5	LAI-MW4-20220111		830	Aq	9	X	X	X	X	X	X
6	Dup1-20220111		832	Aq	9	X	X	X	X	X	X
7	LAI-MW5-20220112	1/12/22	1010	Aq	9	X	X	X	X	X	X
8	MW2-20220111	1/11/22	1515	Aq	9	X	X	X	X	X	X
9	RNS-MW2-20220111		1531	Aq	9	X	X	X	X	X	X
10	MW13-20220112	1/12/22	935	Aq	9	X	X	X	X	X	X
11	RNS-MW6-42.5-20220112	1/12/22	720	Aq ~~SMR~~ SM2	3	X					X SM2
12	RNS-MW6-52.5-20220112	1/12/22	820	Aq SM2	9	X	X	X	X	X	X

Observations/Comments

- [ ] Allow water samples to settle, collect aliquot from clear portion
- [ ] NWTPH-Dx - Acid wash cleanup
- [ ] - Silica gel cleanup
- [ ] Dissolved metal samples were field filtered

Other: -Two coolers -Short hold

580-109215 Chain of Custody

Therm. ID: IR8 Cor: 3.9 ° Unc: 3.7 °
Cooler Dsc: LB
Packing: Bub
Cust. Seal: Yes No
Blue Ice, Wet, Dry, None
FedEx:
UPS:
Lab Cour:
Other: CD

Therm. ID: IR8 Cor: 3.1 ° Unc: 2.9 °
Cooler Dsc: LB
Packing: Bub
Cust. Seal: ~~Yes~~ No
Blue Ice, Wet, Dry, None
FedEx:
UPS:
Lab Cour:
Other: CD

Relinquished by	Received by	Relinquished by	Received by
Signature	Signature	Signature	Signature
Printed Name Simone Rodriguez	Printed Name DIANA VALLELUNGA	Printed Name	Printed Name
Company Landau Associates	Company EFHS	Company	Company
Date 01/12/22 Time 1118	Date 1-12-22 Time 1118	Date Time	Date Time

WHITE COPY - Laboratory YELLOW COPY - Project File PINK COPY - Client Representative

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-99236.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@Eurofinset.com	State of Origin: Washington	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Washington		Job #: 580-109215-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 1/25/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002	PO #:			
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	WO #:			
Email:	Project #: 58009425			
Project Name: Sauro's - Groundwater Monitoring	SSOW#:			
Site:				

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM4500_S2_D/ Sulfide	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LAI-MW1-20220111 (580-109215-2)	1/11/22	11:30 Pacific		Water			X	X	4	
LAI-MW2-20220111 (580-109215-3)	1/11/22	12:40 Pacific		Water			X	X	4	
LAI-MW3-20220111 (580-109215-4)	1/11/22	14:05 Pacific		Water			X	X	4	
LAI-MW4-20220111 (580-109215-5)	1/11/22	08:30 Pacific		Water			X	X	4	
DUP1-20220111 (580-109215-6)	1/11/22	08:32 Pacific		Water			X	X	4	
LAI-MW5-20220112 (580-109215-7)	1/12/22	10:10 Pacific		Water			X	X	4	
MW2-20220111 (580-109215-8)	1/11/22	15:15 Pacific		Water			X	X	4	
RNS-MW2-20220111 (580-109215-9)	1/11/22	15:31 Pacific		Water			X	X	4	
MW13-20220112 (580-109215-10)	1/12/22	09:35 Pacific		Water			X	X	4	

Note: Since laboratory accreditations are subject to change, Eurofins Northwest places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Northwest laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Northwest attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Northwest.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 1-13-22 1342	Company EFNS	Received by:	Date/Time: 1/14/22 1040	Company EAIDEN	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: ☒ Yes ☐ No Custody Seal No.: 1791025

Cooler Temperature(s) °C and Other Remarks: 1.0 IR13 CF-0.2

Ver: 06/08/2021

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)
Client Contact: Shipping/Receiving
Company: TestAmerica Laboratories, Inc.
Address: 4955 Yarrow Street, ,
City: Arvada
State, Zip: CO, 80002
Phone: 303-736-0100(Tel) 303-431-7171(Fax)
Email:
Project Name: Sauro's - Groundwater Monitoring
Site:

Sampler:
Phone:
Lab PM: Cruz, Sheri L
E-Mail: Sheri.Cruz@Eurofinset.com
Carrier Tracking No(s):
State of Origin: Washington
Due Date Requested: 1/25/2022
TAT Requested (days):
PO #:
WO #:
Project #: 58009425
SSOW#:

COC No: 580-99236.2
Page: Page 2 of 2
Job #: 580-109215-1
Accreditations Required (See note): State Program - Washington

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM4500_S2_D/ Sulfide	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
RNS-MW6-52.5-20220112 (580-109215-12)	1/12/22	08:20 Pacific		Water			X	X	4	

Note: Since laboratory accreditations are subject to change, Eurofins Northwest places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Northwest laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Northwest attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Northwest.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Method of Shipment:

	Date:	Time:	Company	Received by:	Date/Time:	Company
Empty Kit Relinquished by:					1/14/22 1040	EA/GEN
Relinquished by:	1-13-22	1342	EFNS			
Relinquished by:	Date/Time:		Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:		Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-99241.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@Eurofinset.com	State of Origin: Washington	Page: Page 1 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): State Program - Washington		Job #: 580-109215-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 1/25/2022			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: Sauro's - Groundwater Monitoring	Project #: 58009425			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM5310B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
LAI-MW1-20220111 (580-109215-2)	1/11/22	11:30 Pacific		Water			X	1	
LAI-MW2-20220111 (580-109215-3)	1/11/22	12:40 Pacific		Water			X	1	
LAI-MW3-20220111 (580-109215-4)	1/11/22	14:05 Pacific		Water			X	1	
LAI-MW4-20220111 (580-109215-5)	1/11/22	08:30 Pacific		Water			X	1	
DUP1-20220111 (580-109215-6)	1/11/22	08:32 Pacific		Water			X	1	
LAI-MW5-20220112 (580-109215-7)	1/12/22	10:10 Pacific		Water			X	1	
MW2-20220111 (580-109215-8)	1/11/22	15:15 Pacific		Water			X	1	
RNS-MW2-20220111 (580-109215-9)	1/11/22	15:31 Pacific		Water			X	1	
MW13-20220112 (580-109215-10)	1/12/22	09:35 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Northwest places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Northwest laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Northwest attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Northwest.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		1-13-22 1531	EFGS			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1-15-22 0903	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.8°C IR8

Ver: 06/08/2021

Eurofins Seattle
5755 8th Street East
Tacoma, WA 98424
Phone: 253-922-2310 Fax: 425-420-9210

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Cruz, Sheri L	Carrier Tracking No(s):	COC No: 580-99241.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sheri.Cruz@Eurofinset.com	State of Origin: Washington	Page: Page 2 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): State Program - Washington		Job #: 580-109215-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 1/25/2022			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: Sauro's - Groundwater Monitoring	Project #: 58009425			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM5310B	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
RNS-MW6-52.5-20220112 (580-109215-12)	1/12/22	08:20 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Northwest places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Northwest laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Northwest attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Northwest.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1-13-22 1531	EFGS			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1-15-22/903	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 6.8°C IR8

Ver: 06/08/2021

estAmerica
LEADER IN ENVIRONMENTAL TESTING

Temperature Controlled

IF SHIPMENT IS DELAYED IN TRANSIT, STORE REFRIGERATED (2° TO 8° C / 36° TO 47° F)

RT 686 FZ
A 1 10:30 6760 01.15

TAL-0090(1016)

ORIGIN ID:TCMA (253) 922-2310
SAMPLE RECEIVING
EUROFINS FRONTIER GLOBAL- SEATTLE
5755 8TH ST E

FIFE, WA 98424
UNITED STATES US

SHIP DATE: 13JAN22
ACTWGT: 41.05 LB
CAD: 989746/CAFE3506

BILL SENDER

TO SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING SOUTHE
3355 MCLEMORE DRIVE

PENSACOLA FL 32514
(850) 474-1001 REF: 8580-46755
PO: YES

0.8 °C
IR8
AL

FedEx
Express

E

TRK# 0201 5569 2542 6760

FRI - 14 JAN 10:30A
PRIORITY OVERNIGHT

XH PNSA

32514
FL-US BFM

Part # 159471-434 RIT2 EXP 07/22

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 580-109215-1

Login Number: 109215
List Number: 1
Creator: Vallelunga, Diana L

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 580-109215-1

Login Number: 109215
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 01/14/22 05:29 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 580-109215-1

Login Number: 109215
List Number: 3
Creator: Whitley, Adrian

List Source: Eurofins Pensacola
List Creation: 01/15/22 10:54 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8°C IR8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method: 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: TRIP BLANK-20220111
Date Collected: 01/11/22 00:01
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/21/22 21:43	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/21/22 21:43	1
Trichloroethene	ND		0.20		ug/L			01/21/22 21:43	1
Tetrachloroethene	ND		0.20		ug/L			01/21/22 21:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/21/22 21:43*	*1*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/21/22 21:43*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*01/21/22 21:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/21/22 21:43*	*1*

Client Sample ID: LAI-MW1-20220111
Date Collected: 01/11/22 11:30
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/21/22 22:07	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/21/22 22:07	1
Trichloroethene	ND		0.20		ug/L			01/21/22 22:07	1
Tetrachloroethene	ND		0.20		ug/L			01/21/22 22:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/21/22 22:07*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*01/21/22 22:07*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*01/21/22 22:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/21/22 22:07*	*1*

Client Sample ID: LAI-MW2-20220111
Date Collected: 01/11/22 12:40
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		2.0		ug/L			01/21/22 22:31	10
cis-1,2-Dichloroethene	**130**		2.0		ug/L			01/21/22 22:31	10
Trichloroethene	**170**		2.0		ug/L			01/21/22 22:31	10
Tetrachloroethene	**450**		2.0		ug/L			01/21/22 22:31	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/21/22 22:31*	*10*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/21/22 22:31*	*10*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*01/21/22 22:31*	*10*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/21/22 22:31*	*10*

Client Sample ID: LAI-MW3-20220111
Date Collected: 01/11/22 14:05
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/21/22 22:55	1
cis-1,2-Dichloroethene	**37**		0.20		ug/L			01/21/22 22:55	1
Trichloroethene	**44**		0.20		ug/L			01/21/22 22:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/21/22 22:55*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Client Sample ID: LAI-MW3-20220111 **Lab Sample ID: 580-109215-4**
Date Collected: 01/11/22 14:05 **Matrix: Water**
Date Received: 01/12/22 11:18

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*01/21/22 22:55*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*01/21/22 22:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*80 - 120*		*01/21/22 22:55*	*1*

Client Sample ID: LAI-MW4-20220111 **Lab Sample ID: 580-109215-5**
Date Collected: 01/11/22 08:30 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.49**		0.20		ug/L			01/21/22 23:19	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/21/22 23:19	1
Trichloroethene	**0.33**		0.20		ug/L			01/21/22 23:19	1
Tetrachloroethene	ND		0.20		ug/L			01/21/22 23:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*01/21/22 23:19*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*01/21/22 23:19*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*01/21/22 23:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*80 - 120*		*01/21/22 23:19*	*1*

Client Sample ID: DUP1-20220111 **Lab Sample ID: 580-109215-6**
Date Collected: 01/11/22 08:32 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/21/22 23:43	1
cis-1,2-Dichloroethene	**0.25**		0.20		ug/L			01/21/22 23:43	1
Trichloroethene	**0.29**		0.20		ug/L			01/21/22 23:43	1
Tetrachloroethene	ND		0.20		ug/L			01/21/22 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*01/21/22 23:43*	*1*
Dibromofluoromethane (Surr)	*97*		*80 - 120*		*01/21/22 23:43*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/21/22 23:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/21/22 23:43*	*1*

Client Sample ID: LAI-MW5-20220112 **Lab Sample ID: 580-109215-7**
Date Collected: 01/12/22 10:10 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/22/22 00:07	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/22/22 00:07	1
Trichloroethene	ND		0.20		ug/L			01/22/22 00:07	1
Tetrachloroethene	ND		0.20		ug/L			01/22/22 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/22/22 00:07*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*01/22/22 00:07*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*01/22/22 00:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/22/22 00:07*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS

Client Sample ID: MW2-20220111 **Lab Sample ID: 580-109215-8**
Date Collected: 01/11/22 15:15 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/22/22 00:31	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/22/22 00:31	1
Trichloroethene	ND		0.20		ug/L			01/22/22 00:31	1
Tetrachloroethene	**0.34**		0.20		ug/L			01/22/22 00:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*01/22/22 00:31*	*1*
Dibromofluoromethane (Surr)	*99*		*80 - 120*		*01/22/22 00:31*	*1*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*01/22/22 00:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*80 - 120*		*01/22/22 00:31*	*1*

Client Sample ID: RNS-MW2-20220111 **Lab Sample ID: 580-109215-9**
Date Collected: 01/11/22 15:31 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/22/22 00:56	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/22/22 00:56	1
Trichloroethene	**0.45**		0.20		ug/L			01/22/22 00:56	1
Tetrachloroethene	**18**		0.20		ug/L			01/22/22 00:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/22/22 00:56*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*01/22/22 00:56*	*1*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*01/22/22 00:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/22/22 00:56*	*1*

Client Sample ID: MW13-20220112 **Lab Sample ID: 580-109215-10**
Date Collected: 01/12/22 09:35 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		2.0		ug/L			01/22/22 01:20	10
cis-1,2-Dichloroethene	**63**		2.0		ug/L			01/22/22 01:20	10
Trichloroethene	**98**		2.0		ug/L			01/22/22 01:20	10
Tetrachloroethene	**350**		2.0		ug/L			01/22/22 01:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*80 - 120*		*01/22/22 01:20*	*10*
Dibromofluoromethane (Surr)	*106*		*80 - 120*		*01/22/22 01:20*	*10*
4-Bromofluorobenzene (Surr)	*93*		*80 - 120*		*01/22/22 01:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*113*		*80 - 120*		*01/22/22 01:20*	*10*

Client Sample ID: RNS-MW6-42.5-20220112 **Lab Sample ID: 580-109215-11**
Date Collected: 01/12/22 07:20 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		10		ug/L			01/22/22 01:43	50
cis-1,2-Dichloroethene	**80**		10		ug/L			01/22/22 01:43	50
Trichloroethene	**190**		10		ug/L			01/22/22 01:43	50
Tetrachloroethene	**680**		10		ug/L			01/22/22 01:43	50

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/22/22 01:43*	*50*
Dibromofluoromethane (Surr)	*100*		*80 - 120*		*01/22/22 01:43*	*50*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*		*01/22/22 01:43*	*50*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/22/22 01:43*	*50*

Client Sample ID: RNS-MW6-52.5-20220112 **Lab Sample ID: 580-109215-12**
Date Collected: 01/12/22 08:20 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		10		ug/L			01/22/22 02:07	50
cis-1,2-Dichloroethene	**34**		10		ug/L			01/22/22 02:07	50
Trichloroethene	**160**		10		ug/L			01/22/22 02:07	50
Tetrachloroethene	**600**		10		ug/L			01/22/22 02:07	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*99*		*80 - 120*		*01/22/22 02:07*	*50*
Dibromofluoromethane (Surr)	*102*		*80 - 120*		*01/22/22 02:07*	*50*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*01/22/22 02:07*	*50*
1,2-Dichloroethane-d4 (Surr)	*107*		*80 - 120*		*01/22/22 02:07*	*50*

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Method: 8260D - Volatile Organic Compounds by GC/MS - DL

Client Sample ID: LAI-MW3-20220111
Date Collected: 01/11/22 14:05
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	86		2.0		ug/L			01/22/22 23:54	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*01/22/22 23:54*	*10*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*01/22/22 23:54*	*10*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*01/22/22 23:54*	*10*
1,2-Dichloroethane-d4 (Surr)	*93*		*80 - 120*		*01/22/22 23:54*	*10*

Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: LAI-MW1-20220111 **Lab Sample ID: 580-109215-2**
Date Collected: 01/11/22 11:30 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0080**		0.0050		mg/L			01/19/22 19:30	1

Client Sample ID: LAI-MW2-20220111 **Lab Sample ID: 580-109215-3**
Date Collected: 01/11/22 12:40 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0061**		0.0050		mg/L			01/19/22 19:43	1

Client Sample ID: LAI-MW3-20220111 **Lab Sample ID: 580-109215-4**
Date Collected: 01/11/22 14:05 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			01/19/22 19:56	1

Client Sample ID: LAI-MW4-20220111 **Lab Sample ID: 580-109215-5**
Date Collected: 01/11/22 08:30 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.16**		0.0050		mg/L			01/19/22 20:09	1

Client Sample ID: DUP1-20220111 **Lab Sample ID: 580-109215-6**
Date Collected: 01/11/22 08:32 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.19**		0.0050		mg/L			01/19/22 20:22	1

Client Sample ID: LAI-MW5-20220112 **Lab Sample ID: 580-109215-7**
Date Collected: 01/12/22 10:10 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**9.3**		0.0050		mg/L			01/19/22 20:35	1

Client Sample ID: MW2-20220111 **Lab Sample ID: 580-109215-8**
Date Collected: 01/11/22 15:15 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.030**		0.0050		mg/L			01/19/22 20:48	1

Client Sample ID: RNS-MW2-20220111 **Lab Sample ID: 580-109215-9**
Date Collected: 01/11/22 15:31 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			01/19/22 21:01	1

Client Sample ID: MW13-20220112 **Lab Sample ID: 580-109215-10**
Date Collected: 01/12/22 09:35 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0060**		0.0050		mg/L			01/19/22 21:14	1

Client: Landau & Associates, Inc.
Job ID: 580-109215-1
Project/Site: Sauro's - Groundwater Monitoring

Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: RNS-MW6-52.5-20220112
Lab Sample ID: 580-109215-12
Date Collected: 01/12/22 08:20
Matrix: Water
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.048		0.0050		mg/L			01/19/22 21:27	1

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Method: RSK-175 - Dissolved Gases (GC) - RA

Client Sample ID: RNS-MW6-52.5-20220112
Date Collected: 01/12/22 08:20
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.032		0.0050		mg/L			01/25/22 13:21	1

General Chemistry

Client Sample ID: LAI-MW1-20220111 **Lab Sample ID: 580-109215-2**
Date Collected: 01/11/22 11:30 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**89**		1.5		mg/L			01/22/22 01:12	1
Nitrite as N	ND		0.40		mg/L			01/12/22 13:48	1
Nitrate as N	**1.5**		0.20		mg/L			01/12/22 13:48	1
Sulfate	**19**		1.5		mg/L			01/22/22 01:12	1
Sulfide	ND		0.050		mg/L			01/17/22 14:09	1
Total Organic Carbon	**1.3**		1.0		mg/L			01/26/22 14:17	1

Client Sample ID: LAI-MW2-20220111 **Lab Sample ID: 580-109215-3**
Date Collected: 01/11/22 12:40 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24**		1.5		mg/L			01/22/22 01:47	1
Nitrite as N	ND		0.40		mg/L			01/12/22 14:23	1
Nitrate as N	**0.29**		0.20		mg/L			01/12/22 14:23	1
Sulfate	**24**		1.5		mg/L			01/22/22 01:47	1
Sulfide	ND		0.050		mg/L			01/17/22 14:10	1
Total Organic Carbon	**1.8**		1.0		mg/L			01/26/22 14:40	1

Client Sample ID: LAI-MW3-20220111 **Lab Sample ID: 580-109215-4**
Date Collected: 01/11/22 14:05 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**23**		1.5		mg/L			01/22/22 01:59	1
Nitrite as N	ND		0.40		mg/L			01/12/22 14:35	1
Nitrate as N	**0.82**		0.20		mg/L			01/12/22 14:35	1
Sulfate	**24**		1.5		mg/L			01/22/22 01:59	1
Sulfide	ND		0.050		mg/L			01/17/22 14:10	1
Total Organic Carbon	**1.7**		1.0		mg/L			01/26/22 14:53	1

Client Sample ID: LAI-MW4-20220111 **Lab Sample ID: 580-109215-5**
Date Collected: 01/11/22 08:30 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5200**		150		mg/L			01/22/22 02:10	100
Nitrite as N	ND		0.40		mg/L			01/12/22 15:10	1
Nitrate as N	**1.1**		0.20		mg/L			01/12/22 15:10	1
Sulfate	**720**		150		mg/L			01/22/22 02:10	100
Sulfide	ND		0.050		mg/L			01/17/22 14:11	1
Total Organic Carbon	**2.5**		1.0		mg/L			01/26/22 15:05	1

Client Sample ID: DUP1-20220111 **Lab Sample ID: 580-109215-6**
Date Collected: 01/11/22 08:32 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**5300**		150		mg/L			01/24/22 12:02	100
Nitrite as N	ND	H	0.40		mg/L			02/04/22 11:07	1
Nitrate as N	**0.96**	**H**	0.20		mg/L			02/04/22 11:07	1
Sulfate	**710**		150		mg/L			01/24/22 12:02	100
Sulfide	ND		0.050		mg/L			01/17/22 14:12	1
Total Organic Carbon	**2.5**		1.0		mg/L			01/26/22 15:17	1

General Chemistry

Client Sample ID: LAI-MW5-20220112 **Lab Sample ID: 580-109215-7**
Date Collected: 01/12/22 10:10 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**85**		1.5		mg/L			01/22/22 02:45	1
Nitrite as N	ND		0.40		mg/L			01/12/22 16:21	1
Nitrate as N	ND		0.20		mg/L			01/12/22 16:21	1
Sulfate	**4.9**		1.5		mg/L			01/22/22 02:45	1
Sulfide	ND		0.050		mg/L			01/17/22 14:13	1
Total Organic Carbon	**6.2**		1.0		mg/L			01/26/22 15:52	1

Client Sample ID: MW2-20220111 **Lab Sample ID: 580-109215-8**
Date Collected: 01/11/22 15:15 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**50**		1.5		mg/L			01/22/22 02:57	1
Nitrite as N	ND		0.40		mg/L			01/12/22 16:33	1
Nitrate as N	**2.9**		0.20		mg/L			01/12/22 16:33	1
Sulfate	**43**		1.5		mg/L			01/22/22 02:57	1
Sulfide	ND	F1	0.050		mg/L			01/17/22 14:13	1
Total Organic Carbon	**2.8**		1.0		mg/L			01/26/22 16:04	1

Client Sample ID: RNS-MW2-20220111 **Lab Sample ID: 580-109215-9**
Date Collected: 01/11/22 15:31 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**67**	**F1**	1.5		mg/L			01/22/22 03:09	1
Nitrite as N	ND		0.40		mg/L			01/12/22 16:44	1
Nitrate as N	ND		0.20		mg/L			01/12/22 16:44	1
Sulfate	**23**		1.5		mg/L			01/22/22 03:09	1
Sulfide	ND		0.050		mg/L			01/17/22 14:14	1
Total Organic Carbon	**1.8**		1.0		mg/L			01/26/22 16:16	1

Client Sample ID: MW13-20220112 **Lab Sample ID: 580-109215-10**
Date Collected: 01/12/22 09:35 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**27**		1.5		mg/L			01/22/22 04:07	1
Nitrite as N	ND		0.40		mg/L			01/12/22 16:56	1
Nitrate as N	**0.63**		0.20		mg/L			01/12/22 16:56	1
Sulfate	**23**		1.5		mg/L			01/22/22 04:07	1
Sulfide	ND		0.050		mg/L			01/17/22 14:15	1
Total Organic Carbon	**1.6**		1.0		mg/L			01/26/22 16:29	1

Client Sample ID: RNS-MW6-52.5-20220112 **Lab Sample ID: 580-109215-12**
Date Collected: 01/12/22 08:20 **Matrix: Water**
Date Received: 01/12/22 11:18

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**39**		1.5		mg/L			01/22/22 04:19	1
Nitrite as N	ND		0.40		mg/L			01/12/22 17:08	1
Nitrate as N	**0.67**		0.20		mg/L			01/12/22 17:08	1
Sulfate	**23**		1.5		mg/L			01/22/22 04:19	1
Sulfide	ND		0.050		mg/L			01/19/22 16:52	1
Total Organic Carbon	**2.0**		1.0		mg/L			01/26/22 16:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-379006/6
Matrix: Water
Analysis Batch: 379006

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20		ug/L			01/21/22 18:07	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			01/21/22 18:07	1
Trichloroethene	ND		0.20		ug/L			01/21/22 18:07	1
Tetrachloroethene	ND		0.20		ug/L			01/21/22 18:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*01/21/22 18:07*	*1*
Dibromofluoromethane (Surr)	*103*		*80 - 120*		*01/21/22 18:07*	*1*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*01/21/22 18:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*		*01/21/22 18:07*	*1*

Lab Sample ID: LCS 580-379006/3
Matrix: Water
Analysis Batch: 379006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl chloride			5.00	4.97		ug/L		99	41 - 150		
cis-1,2-Dichloroethene			5.00	4.86		ug/L		97	72 - 120		
Trichloroethene			5.00	4.56		ug/L		91	72 - 120		
Tetrachloroethene			5.00	4.84		ug/L		97	75 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*106*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*95*		*80 - 120*

Lab Sample ID: LCSD 580-379006/4
Matrix: Water
Analysis Batch: 379006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride			5.00	4.77		ug/L		95	41 - 150	4	32
cis-1,2-Dichloroethene			5.00	5.07		ug/L		101	72 - 120	4	22
Trichloroethene			5.00	4.47		ug/L		89	72 - 120	2	22
Tetrachloroethene			5.00	4.61		ug/L		92	75 - 124	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*94*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-379064/6
Matrix: Water
Analysis Batch: 379064

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.20		ug/L			01/22/22 15:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*01/22/22 15:48*	*1*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*01/22/22 15:48*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*01/22/22 15:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*80 - 120*		*01/22/22 15:48*	*1*

Lab Sample ID: LCS 580-379064/3
Matrix: Water
Analysis Batch: 379064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Tetrachloroethene			5.00	4.84		ug/L		97	75 - 124		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 580-379064/4
Matrix: Water
Analysis Batch: 379064

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tetrachloroethene			5.00	5.02		ug/L		100	75 - 124	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*80 - 120*
Dibromofluoromethane (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*
1,2-Dichloroethane-d4 (Surr)	*104*		*80 - 120*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-563833/4
Matrix: Water
Analysis Batch: 563833

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			01/19/22 16:42	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 280-563833/2
Matrix: Water
Analysis Batch: 563833

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methane			0.0657	0.0663		mg/L		101	75 - 125		

Lab Sample ID: LCSD 280-563833/3
Matrix: Water
Analysis Batch: 563833

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane			0.0657	0.0661		mg/L		101	75 - 125	0	20

Lab Sample ID: 580-109215-12 DU
Matrix: Water
Analysis Batch: 563833

Client Sample ID: RNS-MW6-52.5-20220112
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	0.048			0.0386	F3	mg/L				21	20

Lab Sample ID: MB 280-564319/4
Matrix: Water
Analysis Batch: 564319

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			01/25/22 12:37	1

Lab Sample ID: LCS 280-564319/2
Matrix: Water
Analysis Batch: 564319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methane			0.0657	0.0658		mg/L		100	75 - 125		

Lab Sample ID: LCSD 280-564319/3
Matrix: Water
Analysis Batch: 564319

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane			0.0657	0.0655		mg/L		100	75 - 125	0	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-378174/3
Matrix: Water
Analysis Batch: 378174

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40		mg/L			01/12/22 12:38	1
Nitrate as N	ND		0.20		mg/L			01/12/22 12:38	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 580-378174/4
Matrix: Water
Analysis Batch: 378174

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite as N			5.00	5.20		mg/L		104	90 - 110		
Nitrate as N			5.00	4.91		mg/L		98	90 - 110		

Lab Sample ID: LCSD 580-378174/5
Matrix: Water
Analysis Batch: 378174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N			5.00	5.21		mg/L		104	90 - 110	0	15
Nitrate as N			5.00	4.94		mg/L		99	90 - 110	1	15

Lab Sample ID: 580-109215-4 MS
Matrix: Water
Analysis Batch: 378174

Client Sample ID: LAI-MW3-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrite as N	ND		5.00	5.25		mg/L		105	90 - 110		
Nitrate as N	0.82		5.00	5.66		mg/L		97	90 - 110		

Lab Sample ID: 580-109215-4 MSD
Matrix: Water
Analysis Batch: 378174

Client Sample ID: LAI-MW3-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N	ND		5.00	5.25		mg/L		105	90 - 110	0	15
Nitrate as N	0.82		5.00	5.70		mg/L		98	90 - 110	1	15

Lab Sample ID: MB 580-379147/7
Matrix: Water
Analysis Batch: 379147

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5		mg/L			01/22/22 00:36	1
Sulfate	ND		1.5		mg/L			01/22/22 00:36	1

Lab Sample ID: LCS 580-379147/8
Matrix: Water
Analysis Batch: 379147

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride			50.0	50.2		mg/L		100	90 - 110		
Sulfate			50.0	49.5		mg/L		99	90 - 110		

Lab Sample ID: LCSD 580-379147/9
Matrix: Water
Analysis Batch: 379147

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride			50.0	50.4		mg/L		101	90 - 110	0	15
Sulfate			50.0	49.5		mg/L		99	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 580-109215-9 MS
Matrix: Water
Analysis Batch: 379147

Client Sample ID: RNS-MW2-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	67	F1	50.0	108	F1	mg/L		83	90 - 110
Sulfate	23		50.0	72.4		mg/L		100	90 - 110

Lab Sample ID: 580-109215-9 MSD
Matrix: Water
Analysis Batch: 379147

Client Sample ID: RNS-MW2-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	67	F1	50.0	108	F1	mg/L		83	90 - 110	0	15
Sulfate	23		50.0	72.3		mg/L		99	90 - 110	0	15

Lab Sample ID: MB 580-379198/3
Matrix: Water
Analysis Batch: 379198

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.5		mg/L			01/24/22 11:27	1
Sulfate	ND		1.5		mg/L			01/24/22 11:27	1

Lab Sample ID: LCS 580-379198/4
Matrix: Water
Analysis Batch: 379198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	51.6		mg/L		103	90 - 110
Sulfate	50.0	50.0		mg/L		100	90 - 110

Lab Sample ID: LCSD 580-379198/5
Matrix: Water
Analysis Batch: 379198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	50.0	51.6		mg/L		103	90 - 110	0	15
Sulfate	50.0	50.0		mg/L		100	90 - 110	0	15

Lab Sample ID: MB 580-380393/7
Matrix: Water
Analysis Batch: 380393

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40		mg/L			02/04/22 11:43	1
Nitrate as N	ND		0.20		mg/L			02/04/22 11:43	1

Lab Sample ID: LCS 580-380393/8
Matrix: Water
Analysis Batch: 380393

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	5.00	5.05		mg/L		101	90 - 110
Nitrate as N	5.00	5.07		mg/L		101	90 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 580-380393/9
Matrix: Water
Analysis Batch: 380393

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrite as N			5.00	5.05		mg/L		101	90 - 110	0	15
Nitrate as N			5.00	5.08		mg/L		102	90 - 110	0	15

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 280-563540/11
Matrix: Water
Analysis Batch: 563540

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050		mg/L			01/17/22 13:47	1

Lab Sample ID: LCS 280-563540/9
Matrix: Water
Analysis Batch: 563540

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			0.500	0.501		mg/L		100	81 - 122		

Lab Sample ID: LCSD 280-563540/10
Matrix: Water
Analysis Batch: 563540

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			0.500	0.483		mg/L		97	81 - 122	4	10

Lab Sample ID: 580-109215-8 MS
Matrix: Water
Analysis Batch: 563540

Client Sample ID: MW2-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide	ND	F1	0.500	0.350	F1	mg/L		70	81 - 122		

Lab Sample ID: 580-109215-8 MSD
Matrix: Water
Analysis Batch: 563540

Client Sample ID: MW2-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND	F1	0.500	0.384	F1	mg/L		77	81 - 122	9	10

Lab Sample ID: MB 280-563850/11
Matrix: Water
Analysis Batch: 563850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050		mg/L			01/19/22 16:44	1

Method: SM 4500 S2 D - Sulfide, Total (Continued)

Lab Sample ID: LCS 280-563850/9
Matrix: Water
Analysis Batch: 563850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			0.500	0.450		mg/L		90	81 - 122		

Lab Sample ID: LCSD 280-563850/10
Matrix: Water
Analysis Batch: 563850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide			0.500	0.456		mg/L		91	81 - 122	1	10

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 400-564476/4
Matrix: Water
Analysis Batch: 564476

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			01/26/22 13:34	1

Lab Sample ID: LCS 400-564476/6
Matrix: Water
Analysis Batch: 564476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			20.0	19.8		mg/L		99	85 - 115		

Lab Sample ID: LCSD 400-564476/7
Matrix: Water
Analysis Batch: 564476

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon			20.0	19.0		mg/L		95	85 - 115	4	30

Lab Sample ID: MRL 400-564476/3
Matrix: Water
Analysis Batch: 564476

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			1.00	1.17		mg/L		117	50 - 150		

Lab Sample ID: 580-109215-2 DU
Matrix: Water
Analysis Batch: 564476

Client Sample ID: LAI-MW1-20220111
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.3			1.35		mg/L				6	16

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Client Sample ID: TRIP BLANK-20220111
Lab Sample ID: 580-109215-1
Date Collected: 01/11/22 00:01
Matrix: Water
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/21/22 21:43	B1M	FGS SEA

Client Sample ID: LAI-MW1-20220111
Lab Sample ID: 580-109215-2
Date Collected: 01/11/22 11:30
Matrix: Water
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/21/22 22:07	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 19:30	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 13:48	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 01:12	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:09	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 14:17	DEK	TAL PEN

Client Sample ID: LAI-MW2-20220111
Lab Sample ID: 580-109215-3
Date Collected: 01/11/22 12:40
Matrix: Water
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		10	379006	01/21/22 22:31	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 19:43	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 14:23	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 01:47	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:10	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 14:40	DEK	TAL PEN

Client Sample ID: LAI-MW3-20220111
Lab Sample ID: 580-109215-4
Date Collected: 01/11/22 14:05
Matrix: Water
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/21/22 22:55	B1M	FGS SEA
Total/NA	Analysis	8260D	DL	10	379064	01/22/22 23:54	T1W	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 19:56	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 14:35	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 01:59	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:10	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 14:53	DEK	TAL PEN

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Client Sample ID: LAI-MW4-20220111
Date Collected: 01/11/22 08:30
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/21/22 23:19	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 20:09	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 15:10	E1S	FGS SEA
Total/NA	Analysis	300.0		100	379147	01/22/22 02:10	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:11	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 15:05	DEK	TAL PEN

Client Sample ID: DUP1-20220111
Date Collected: 01/11/22 08:32
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/21/22 23:43	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 20:22	CAS	TAL DEN
Total/NA	Analysis	300.0		100	379198	01/24/22 12:02	E1S	FGS SEA
Total/NA	Analysis	300.0		1	380393	02/04/22 11:07	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:12	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 15:17	DEK	TAL PEN

Client Sample ID: LAI-MW5-20220112
Date Collected: 01/12/22 10:10
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/22/22 00:07	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 20:35	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 16:21	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 02:45	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:13	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 15:52	DEK	TAL PEN

Client Sample ID: MW2-20220111
Date Collected: 01/11/22 15:15
Date Received: 01/12/22 11:18

Lab Sample ID: 580-109215-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/22/22 00:31	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 20:48	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 16:33	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 02:57	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:13	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 16:04	DEK	TAL PEN

Lab Chronicle

Client: Landau & Associates, Inc.
Project/Site: Sauro's - Groundwater Monitoring

Job ID: 580-109215-1

Client Sample ID: RNS-MW2-20220111

Lab Sample ID: 580-109215-9
Matrix: Water
Date Collected: 01/11/22 15:31
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	379006	01/22/22 00:56	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 21:01	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 16:44	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 03:09	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:14	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 16:16	DEK	TAL PEN

Client Sample ID: MW13-20220112

Lab Sample ID: 580-109215-10
Matrix: Water
Date Collected: 01/12/22 09:35
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		10	379006	01/22/22 01:20	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 21:14	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 16:56	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 04:07	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563540	01/17/22 14:15	SPG	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 16:29	DEK	TAL PEN

Client Sample ID: RNS-MW6-42.5-20220112

Lab Sample ID: 580-109215-11
Matrix: Water
Date Collected: 01/12/22 07:20
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		50	379006	01/22/22 01:43	B1M	FGS SEA

Client Sample ID: RNS-MW6-52.5-20220112

Lab Sample ID: 580-109215-12
Matrix: Water
Date Collected: 01/12/22 08:20
Date Received: 01/12/22 11:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		50	379006	01/22/22 02:07	B1M	FGS SEA
Total/NA	Analysis	RSK-175		1	563833	01/19/22 21:27	CAS	TAL DEN
Total/NA	Analysis	RSK-175	RA	1	564319	01/25/22 13:21	CAS	TAL DEN
Total/NA	Analysis	300.0		1	378174	01/12/22 17:08	E1S	FGS SEA
Total/NA	Analysis	300.0		1	379147	01/22/22 04:19	E1S	FGS SEA
Total/NA	Analysis	SM 4500 S2 D		1	563850	01/19/22 16:52	MMP	TAL DEN
Total/NA	Analysis	SM 5310B		1	564476	01/26/22 16:41	DEK	TAL PEN

Laboratory References:

FGS SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

TAL DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 580-109215-1
Project/Site: Sauro's - Groundwater Monitoring

Laboratory: Eurofins Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
300.0		Water	Chloride
300.0		Water	Nitrate as N
300.0		Water	Nitrite as N
300.0		Water	Sulfate

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-28-22
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22
California	State	2513	01-08-22 *
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-22
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-22
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-22
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-22
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22
New Hampshire	NELAP	205319	04-29-22
New Jersey	NELAP	190002	06-30-22
New York	NELAP	59923	04-01-22
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-22 *
Oklahoma	State	2018-006	08-31-22
Oregon	NELAP	4025-011	01-08-23
Pennsylvania	NELAP	013	07-31-22
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-22
Virginia	NELAP	10490	06-14-22
Washington	State	C583-19	08-03-22
West Virginia DEP	State	354	01-31-22
Wisconsin	State	999615430	08-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Landau & Associates, Inc.
Job ID: 580-109215-1
Project/Site: Sauro's - Groundwater Monitoring

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wyoming (UST)	A2LA	2907.01	10-31-22

Laboratory: Eurofins Pensacola

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State	40150	06-30-22
ANAB	ISO/IEC 17025	L2471	02-23-23
Arkansas DEQ	State	88-0689	09-01-22
California	State	2510	06-30-22
Florida	NELAP	E81010	06-30-22
Georgia	State	E81010(FL)	06-30-22
Illinois	NELAP	200041	10-09-22
Kansas	NELAP	E-10253	10-31-22
Kentucky (UST)	State	53	06-30-22
Kentucky (WW)	State	KY98030	12-31-22
Louisiana	NELAP	30976	06-30-22
Louisiana (DW)	State	LA017	12-31-22
Maryland	State	233	09-30-22
Massachusetts	State	M-FL094	06-30-22
Michigan	State	9912	06-30-22
North Carolina (WW/SW)	State	314	12-31-22
Oklahoma	State	9810	08-31-22
Pennsylvania	NELAP	68-00467	01-31-22
South Carolina	State	96026	06-30-22
Tennessee	State	TN02907	06-30-22
Texas	NELAP	T104704286	09-30-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-21-00056	05-17-24
Virginia	NELAP	460166	06-14-22
West Virginia DEP	State	136	02-28-22