Technical Memorandum

TO: Marv Coleman, Washington State Department of Ecology
CC: Eric Huseby, City of Tacoma

FROM: Sierra Mott and Jennifer Wynkoop

DATE: September 13, 2016

RE: **Long-Term Groundwater Monitoring Status Report No. 2 for July 2016**
Former Sauro's Cleanerama Site
Tacoma, Washington
Project No. 0094048.090.093

Introduction

On behalf of the City of Tacoma (City), Landau Associates, Inc. (LAI) 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 conducting semi-annual sampling at nine monitoring wells as outlined in the Cleanup Action Plan (CAP; LAI 2014) and Agreed Order (AO; No. DE 11080). Under the CAP, the City is implementing a monitored natural attenuation (MNA) remedy that includes 2 years of semi-annual groundwater monitoring beginning in January 2016 followed by annual groundwater monitoring in subsequent years until groundwater at the site reaches cleanup goals (CAP estimate is 26 years of annual sampling). Groundwater monitoring includes collection of volatile organic compounds (VOC) and MNA geochemical samples per the AO between the City and Washington State Department of Ecology.

Semi-Annual Groundwater Monitoring Program Summary

The existing site groundwater monitoring well network includes 17 wells. Of the 17 wells, 9 were selected for long-term monitoring under the CAP and AO. Figure 2 shows the monitoring well network and the nine wells selected for continued monitoring. Table 1 presents a sampling matrix for the long-term monitoring wells.

LAI completed the first semi-annual sampling event in January 2016 (LAI 2016). The second sampling event was completed July 7, 2016; this status report presents results of the July 2016 sampling event. Two additional semiannual events will occur (January 2017 and July 2017) before the sampling frequency is transitioned to annual events, to take place in either January or July. LAI will make a recommendation for either wet or dry season sampling, depending on concentration trends.

The nine wells sampled under the current program are MW-2, MW-13, LAI-MW1 through LAI-MW5, RNS-MW2, and RNS-MW6. During the July 2016 sampling event, samples were collected in accordance with the Sampling and Analysis Plan (SAP; LAI 2013) and Table 1. VOC and MNA analyses are collected using a peristaltic pump at MW-2. The other eight wells are sampled using passive diffusion bags for VOCs and Waterra for MNA parameters. VOC samples at RNS-MW6 are collected at two discrete depths since it has a relatively long screen (20 ft) and prior sampling has demonstrated stratification

within the well; all other wells are sampled at a single depth. All samples were submitted under proper chain of custody to TestAmerica Laboratories, Inc. (TestAmerica) in Tacoma, Washington.

All groundwater samples were analyzed by the laboratory for VOC constituents of concern (COCs are tetrachloroethene [PCE], trichloroethene [TCE], cis-1,2-Dichloroethene [cDCE], and vinyl chloride [VC]) and MNA parameters (nitrate, nitrite, total organic carbon [TOC], sulfate, sulfide, chloride, and dissolved gasses [acetylene, methane, ethane, and ethene]). VOCs were analyzed by U.S. Environmental Protection Agency (EPA) Method 8260; nitrate/nitrite by EPA Method 300.0; TOC by EPA Method 5310B; sulfate/sulfide/chloride by EPA Method 4500; and dissolved gasses by EPA Method RSK-175. Field parameters were also collected, including conductivity and dissolved oxygen (DO) using a field meter (YSI model 556 or equivalent) 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 EIM system following submittal of this report. Table 2 presents the analytical methods, reporting limits, preservatives, and holding times. Table 3 presents VOC analytical data. Table 4 presents MNA analytical data. Time series plots of the VOC data are presented in Attachment 1.

Volatile Organic Compound Results

VOC analytical results from the July 2016 sampling event are consistent with historical results. At three wells, LAI-MW1; LAI-MW4; and LAI-MW5, all VOC concentrations have dropped below their respective cleanup levels. At the six remaining wells, one or more VOCs exceed cleanup levels:

- LAI-MW2, MW13, and RNS-MW6 continue to have the highest concentrations of VOCs. Results indicate concentrations above cleanup levels for all four constituents with PCE and TCE concentrations having the largest exceedances of cleanup levels. Concentrations of PCE at these wells ranged from 340 micrograms per liter (µg/L) to 770 µg/L and concentrations of TCE ranged from 100 µg/L to 220 µg/L. The cleanup level for both TCE and PCE is 5 µg/L.
- LAI-MW3 results indicate concentrations of PCE and TCE continue to exceed cleanup levels; however, concentrations are somewhat lower (59 µg/L and 38 µg/L, respectively) than at the three wells discussed above.
- RNS-MW2 results indicate the concentration of PCE continues to exceed the cleanup level.
- MW2 results indicate the concentration of VC narrowly exceeded the cleanup level of 0.2 µg/L with a concentration of 0.24 µg/L.

VOC concentration time series plots (Attachment 1) were examined to identify data trends over time. Several wells have shown steady decreases in VOC concentrations, specifically LAI-MW1, LAI-MW4, LAI-MW5, MW2, MW-13. RNS-MW6 is sampled at two depths within the screen; recent data at this well appear to show decreasing trends from historical maximum concentrations in 2012 and 2013. Data trends at LAI-MW2 and LAI-MW3 are less clear, but VOC concentrations appear to have remained relatively stable over time with the exception of VC, which appears to be declining. Concentration trends at RNS-MW2 vary by constituent. VC is not detected at this well and TCE and

cDCE concentrations appear to be declining; however, PCE concentrations appear to have an overall increasing trend. The laboratory data package for the most recent sampling event (July 2016) is provided in Attachment 2.

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. Measures of aquifer redox conditions include DO, oxygen-reduction potential, nitrate, ferrous iron, sulfate, and methane. MNA data appear to suggest favorable conditions for reductive-dechlorination at LAI-MW5 (near the source area) and LAI-MW4 (the most downgradient well). Indicators of reductive dechlorination are summarized below:

- Nitrate was not detected at LAI-MW4, but detected at low concentrations at LAI-MW5 (0.11 milligrams per liter [mg/L]).
- Ferrous iron was detected at 3 mg/L at LAI-MW4 and 3.6 mg/L at LAI-MW5.
- Sulfate was detected at low concentrations at LAI-MW4 and LAI-MW5 (2.0 and 4.1 mg/L, respectively).
- Methane was detected at a concentration of 6.4 µg/L at LAI-MW4 and 9.0 µg/L at LAI-MW5.

At the remaining seven wells, data were not conclusive regarding the potential for reductive dechlorination; however, concentrations at most wells appear to be declining. The laboratory data package for the most recent sampling event (July 2016) is provided in Attachment 2. July 2016 MNA data is presented in Table 4.

Occurrence of Problems

Due to laboratory error, VOC concentrations were reported down to the method detection limit (MDL) in January and July 2016. Prior to the January 2016 sampling event, TestAmerica was supplied with the reporting limits specified in the project SAP and were not asked to report the MDL. This error was not noticed during data validation for either event, and due to time restraints, these results are reported and "J flagged"[1] in this status report. LAI will require that TestAmerica no longer report down to the MDL for all VOCs going forward.

[1] "J flag" is defined in Table 3; "The analyte was positively identified; the associated numerical value is the approximate concentrations of the analyte in the sample."

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 January 2017.

Please contact us if you have any questions concerning groundwater monitoring activities or results presented in this status report.

LANDAU ASSOCIATES, INC.

Sierra Mott
Senior Staff Scientist

Jennifer Wynkoop
Senior Associate Scientist

SMM/JWW/jrc
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References

LAI. 2013. Draft Sampling and Analysis Plan, Former Sauro's Property, Tacoma, Washington. Landau Associates, Inc. January 24.

LAI. 2014. Draft Cleanup Action Plan, Former Sauro's Cleanerama Site, Tacoma, Washington. Landau Associates, Inc. September 5.

LAI. 2016. Memorandum: Long-Term Groundwater Monitoring Status Report No. 1 for January 2016, Former Sauro's Cleanerama Site, Tacoma, Washington. From Sierra Mott, Landau Associates, Inc., to Marv Coleman, Washington State Department of Ecology. March 3.

Attachments:

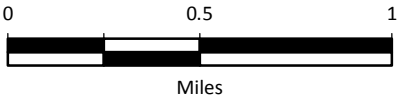
Figure 1: Vicinity Map
Figure 2: Sauro’s Cleanerama Monitoring Well Network

Table 1: Sample Matrix
Table 2: Sampling Laboratory and Field Parameter Details
Table 3: Constituents of Concern Groundwater Analytical Results
Table 4: Monitored Natural Attenuation Parameters

Attachment 1: Chain of Custody Concentrations Time Series Plots
Attachment 2: July 2016 Laboratory Data Packages









Data Source: Esri 2012

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

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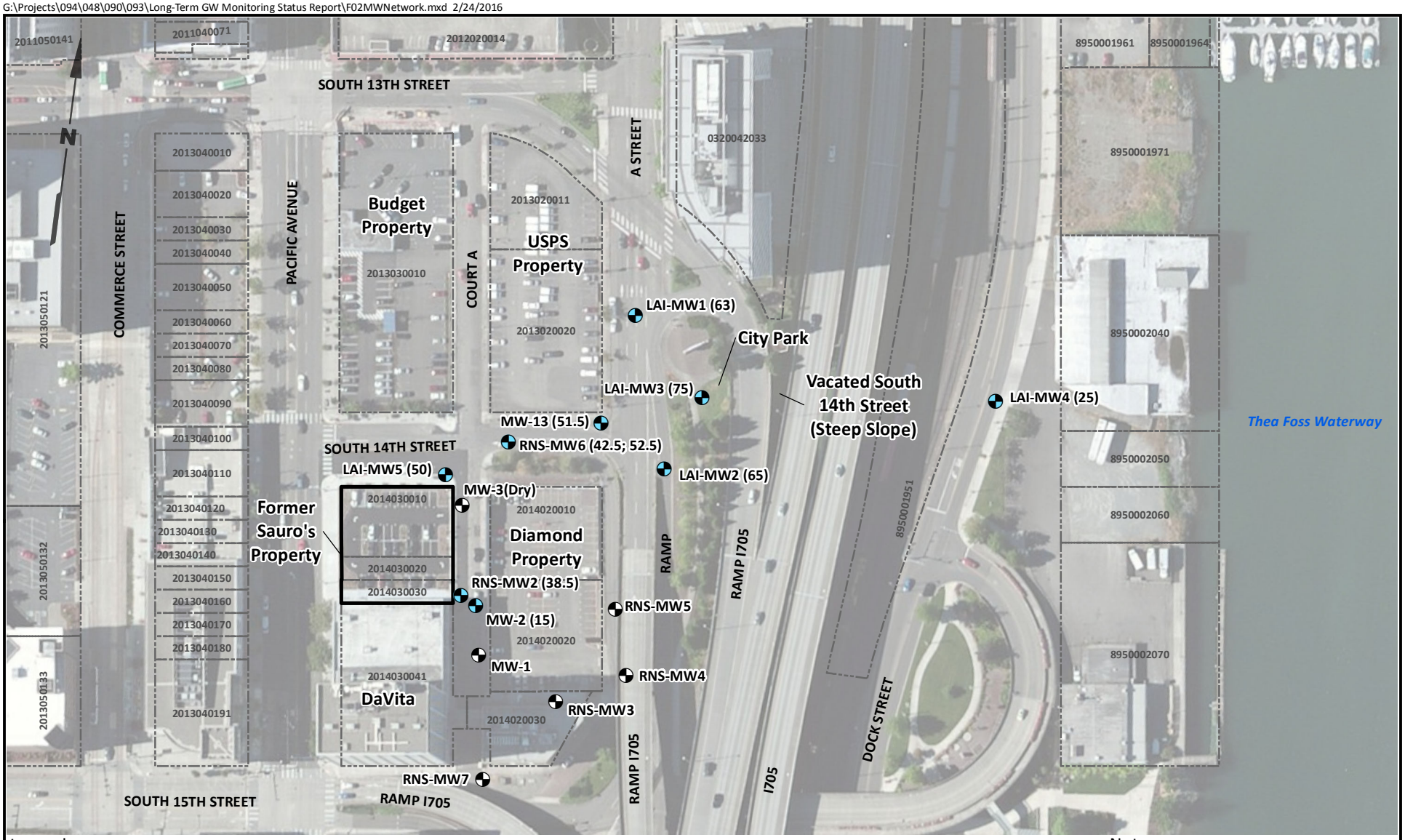

Legend

- Long-Term Groundwater Monitoring Wells
- Other Existing Monitoring Wells
- Subject Property
- Tax Parcels with Parcel ID

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Data Source: Esri World Imagery, 2013.

0 150 300

Scale in Feet

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Sauro's Cleanerama
Tacoma, Washington

Sauro's Cleanerama
Monitoring Well Network

Figure
2

Table 1
Sample Matrix
Sauro's Cleanerama
Tacoma, Washington

Location	VOC Sampling Depth (ft)	VOC Concentration Data 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	PDB	25	WAT
LAI-MW5	50	PDB	50	WAT
MW2-PP	15	PP	15	PP
MW13	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

Abbreviations/Acronyms

ft = feet
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)

Note

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

Table 2
Sampling Laboratory and Field Parameter Details
Sauro's Cleanerama
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	SM 4500-CL-E	1.0 mg/L	Store cool at 6°C	28
Nitrate (NO_3) (Total) as N	353.2	0.2 mg/L (a)	Store cool at 6°C	48 hours
Nitrite (NO_2) (Total) as N	353.2	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)	SM 4500-SO_4 E	5.0 mg/L	Store cool at 6°C	28
Sulfide (SO_2) (Total)	SM 4500-S2 D	0.150 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	YSI (b)	µS/cm
Dissolved Oxygen	Field	YSI	mg/L
Oxidation Reduction Potential	Field	YSI	units +/- mV
pH	Field	YSI	unitless
Temperature	Field	YSI	(°C)
Ferrous Iron (Fe^{2+})	Field	Hach® Kit	mg/L
Turbidity	Field	Turbidity Meter	NTU
Water Level	Field	Water Level Indicator	0.01 ft

Abbreviations/Acronyms

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

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.

Table 3
Constituents of Concern Groundwater Analytical Results - July 2016
Sauro's Cleanerama
Tacoma, Washington

Sample ID:	Groundwater MTCA	LAI-MW1	LAI-MW2	LAI-MW3	LAI-MW4	LAI-MW4	LAI-MW5	MW2	MW-13	RNS-MW2	RNS-MW6-42.5	RNS-MW6-52.5
Laboratory ID:	Method A CUL or	580-60854-2	580-60854-3	580-60854-4	580-60854-12	580-60854-5	580-60854-6	580-60854-7	580-60854-8	580-60854-9	580-60854-10	580-60854-11
Sample Date:	Federal/State MCL	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016
Sample Type:	(µg/L)	N	N	N	FD	N	N	N	N	N	N	N
VOCs (µg/L; SW-846 8260C)												
cis-1,2-Dichloroethene	70 (a)	0.20 U	**120**	**43**	**0.10 J**	**0.085 J**	**0.081 J**	**1.4**	**81**	**0.14 J**	**140**	**120**
Tetrachloroethene	5	**0.12 J**	**350**	**59**	0.20 U	0.20 U	**0.073 J**	**0.48**	**340**	**21**	**770**	**420**
Trichloroethene	5	0.20 U	**140**	**38**	0.20 U	0.20 U	**0.027 J**	**0.56**	**100**	**0.49**	**220**	**140**
Vinyl Chloride	0.2	0.20 U	**0.61**	**0.095 J**	**0.030 J**	**0.030 J**	**0.039 J**	**0.24**	**0.60**	0.20 U	**0.25**	**0.48**

Abbreviations and Acronyms

CUL = cleanup level
FD = field duplicate
MCL = maximum contaminant levels
µg/L = microgram per liter
MTCA = Model Toxics Control Act
N = primary sample
VOC = volatile organic compound

Notes

Bold = detected compound
Green highlighting = compound detected above cleanup criteria.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = The compound was not detected at the reported concentration.

a. Cis-1,2-DCE 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.

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

Sample ID:	LAI-MW1	LAI-MW2	LAI-MW3	LAI-MW4	LAI-MW4	LAI-MW5	MW2	MW13	RNS-MW2	RNS-MW6-52.5
Laboratory ID:	580-60854-2	580-60854-3	580-60854-4	580-60854-12	580-60854-5	580-60854-6	580-60854-7	580-60854-8	580-60854-9	580-60854-11
Sample Date:	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016	7/7/2016
Sample Type:	N	N	N	FD	N	N	N	N	N	N
Natural Attenuation Parameters (mg/L)										
Chloride	**64**	**15**	**23**	**27**	**27**	**24**	**15**	**16**	**20**	**30**
Nitrate	**1.1**	0.20 U	**0.62**	0.20 U	0.20 U	**0.11 J**	**1.9**	**0.73**	**2.9**	**0.58**
Nitrite	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Sulfate	**21**	**20**	**22**	**2.0**	**2.0**	**4.1**	**20**	**33**	**30**	**31**
Sulfide, Total	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.50 U	0.050 U	0.50 U	0.50 U	0.50 U
Total Organic Carbon	**1.4 J**	**1.3**	**1.5**	**2.9**	**2.9**	**7.5**	**3.3**	**1.5**	**1.1**	**1.7**
Dissolved Gasses (µg/L; RSK-175)										
Methane	**0.00055 J**	**0.027**	**0.0018 J**	**6.1**	**6.4**	**9.0**	**1.1**	**0.0063**	0.0050 U	**0.077**
Ethane	0.0050 U	**0.0037 J**	0.0050 U	**0.00090 J**	**0.00078 J**	0.0050 U	**0.0013 J**	**0.0012 J**	0.0050 U	**0.013**
Ethene	0.0050 U	**0.00065 J**	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Acetylene	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U
Field Parameters										
Dissolved Oxygen (mg/L)	**2.37**	**3.34**	**1.36**	**1.23**	**1.23**	**1.68**	**1.39**	**6.38**	**7.51**	**0.95**
Oxidation Reduction Potential (mV)	**-16.4**	**-28.5**	**-36.6**	**-71.1**	**-71.6**	**-62.1**	**-27.2**	**-25.7**	**-2.2**	**-31.4**
Iron (mg/L)	0	**0.4**	0	**3**	**3**	**3.6**	0	0	0	0

Abbreviations and Acronyms

FD = field duplicate
µg/L = microgram per liter
mg/L = milligram per liter
mV = millivolt
N = primary sample

Notes

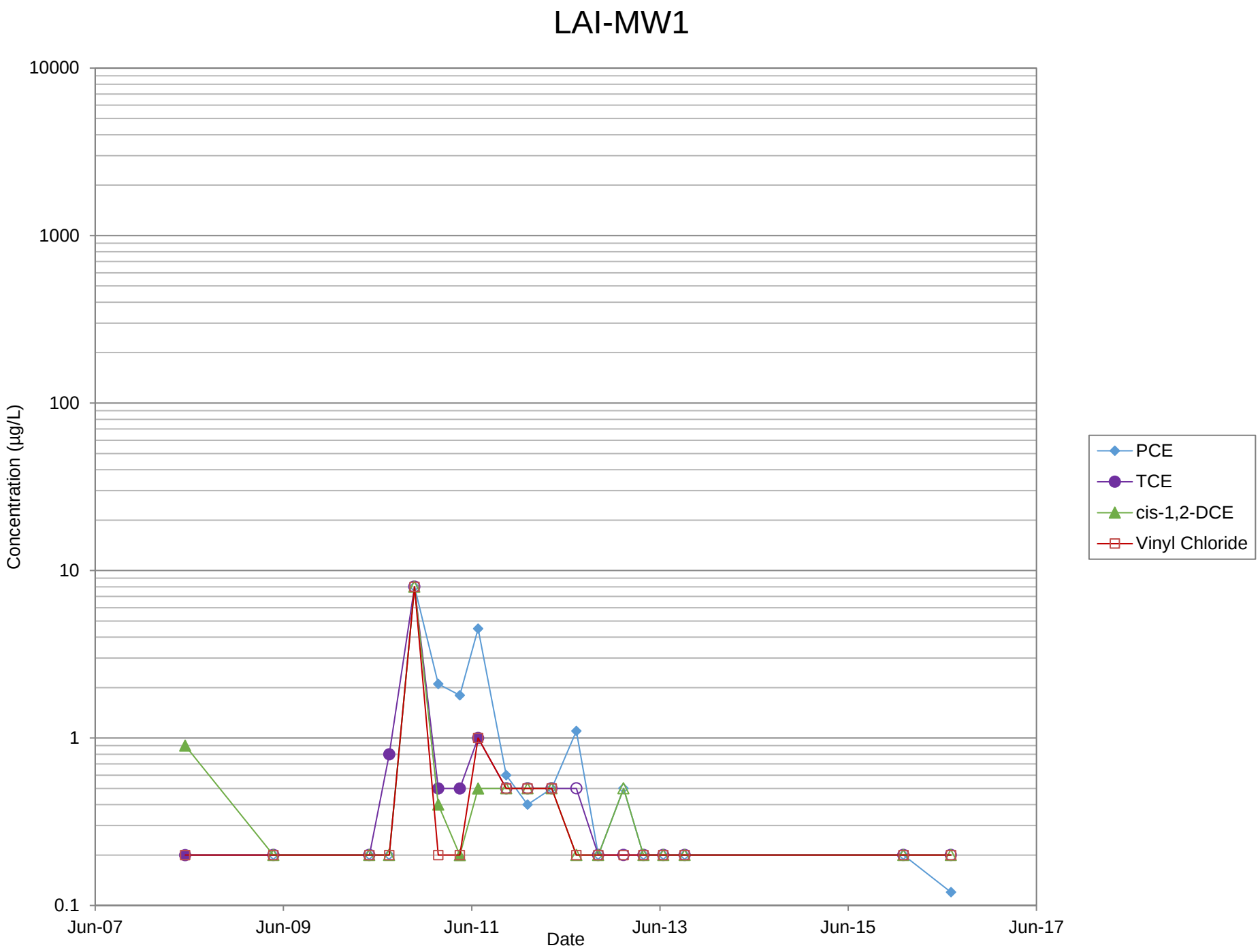
Bold = detected compound
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
U = The compound was not detected at the reported concentration.

ATTACHMENT 1

Constituents of Concern Concentrations Time Series Plots

Notes

1. Open markers on graphs indicate non-detect values. Values shown represent the analytical reporting limit.
2. Open markers shown in the legend indicate the compound has never been detected at this location.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Concentration (µg/L)
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Jun-11
Jun-13
Jun-15
Jun-17
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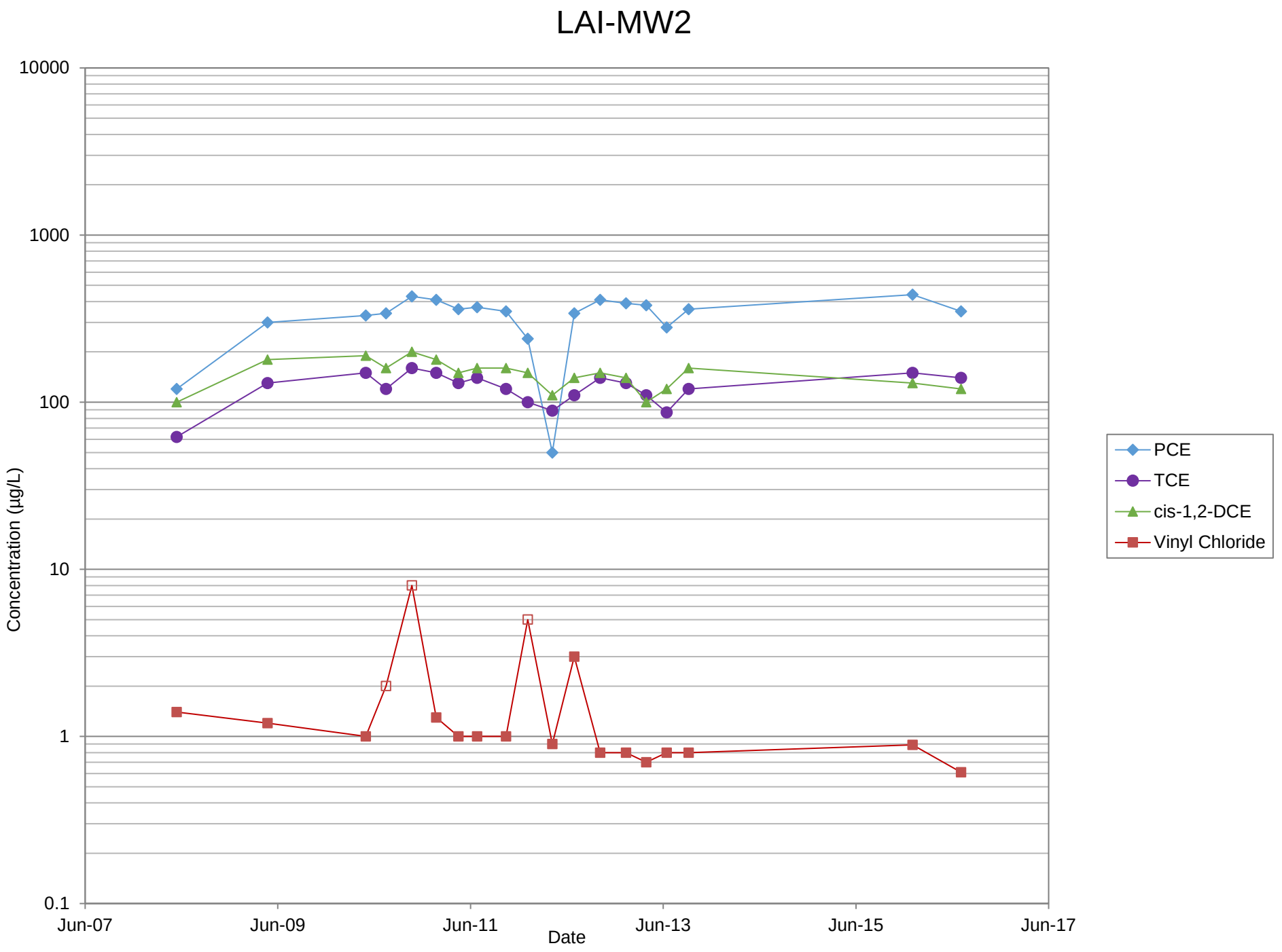
TCE
cis-1,2-DCE
Vinyl Chloride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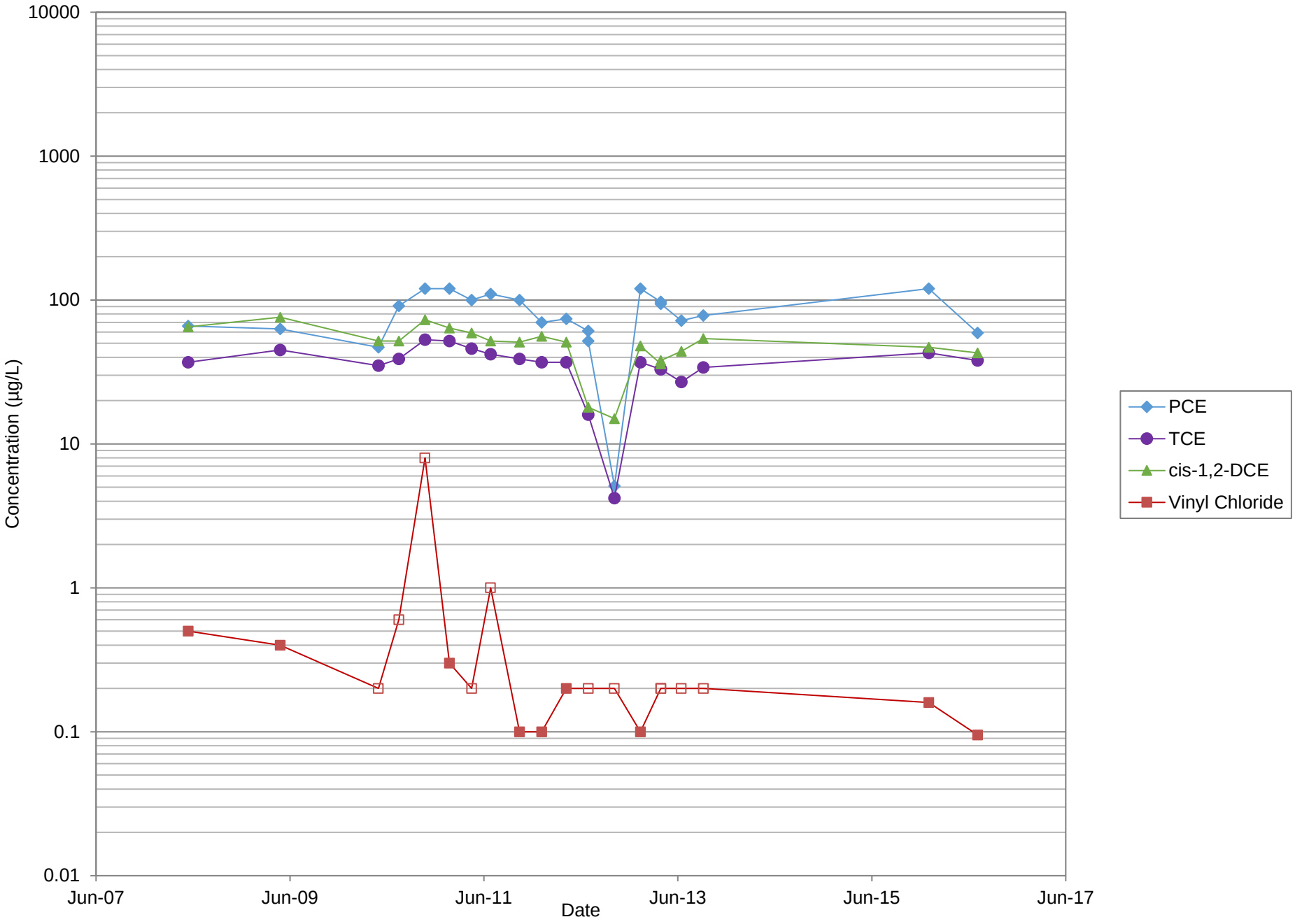
cis-1,2-DCE
Vinyl Chloride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Date
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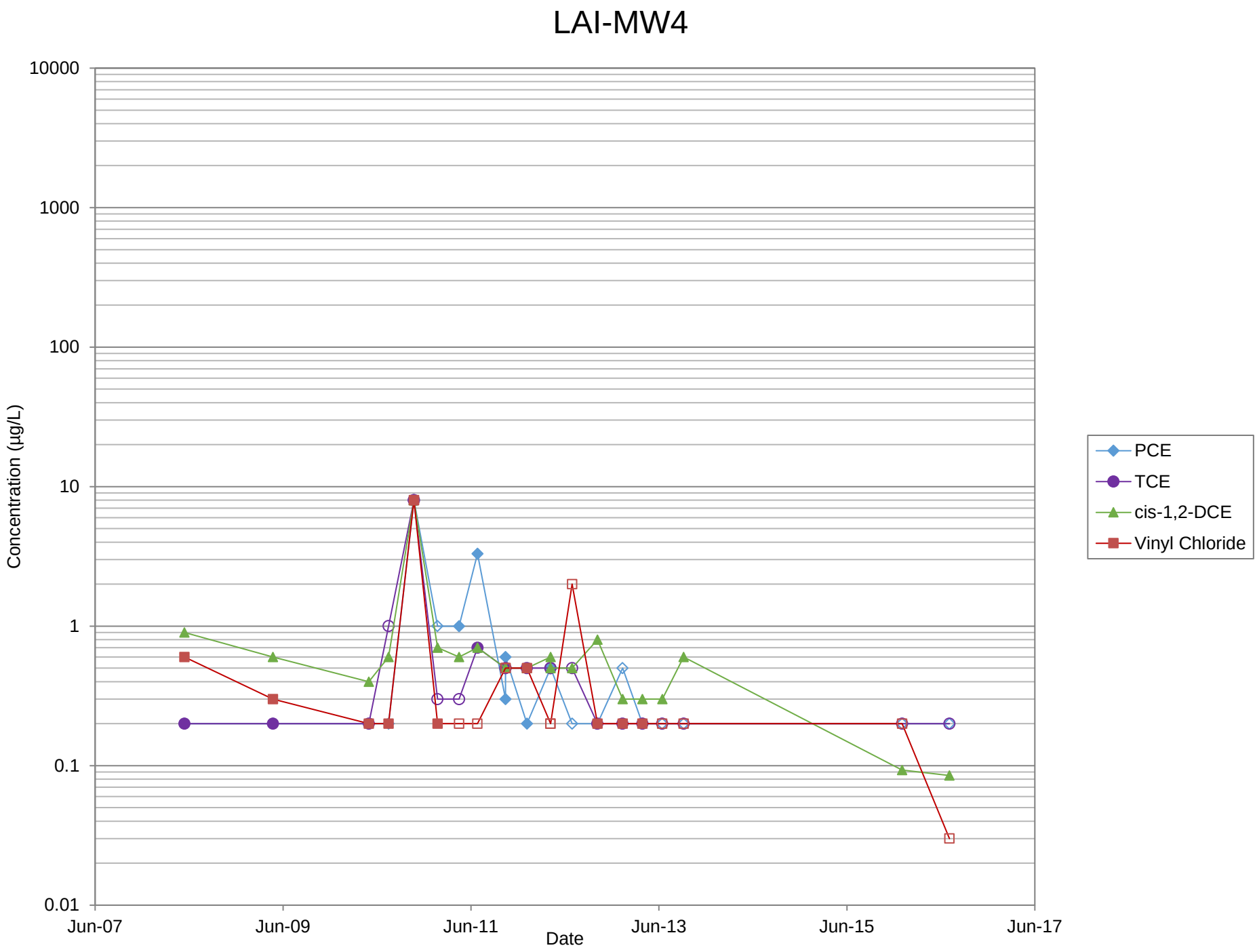
TCE
cis-1,2-DCE
Vinyl Chloride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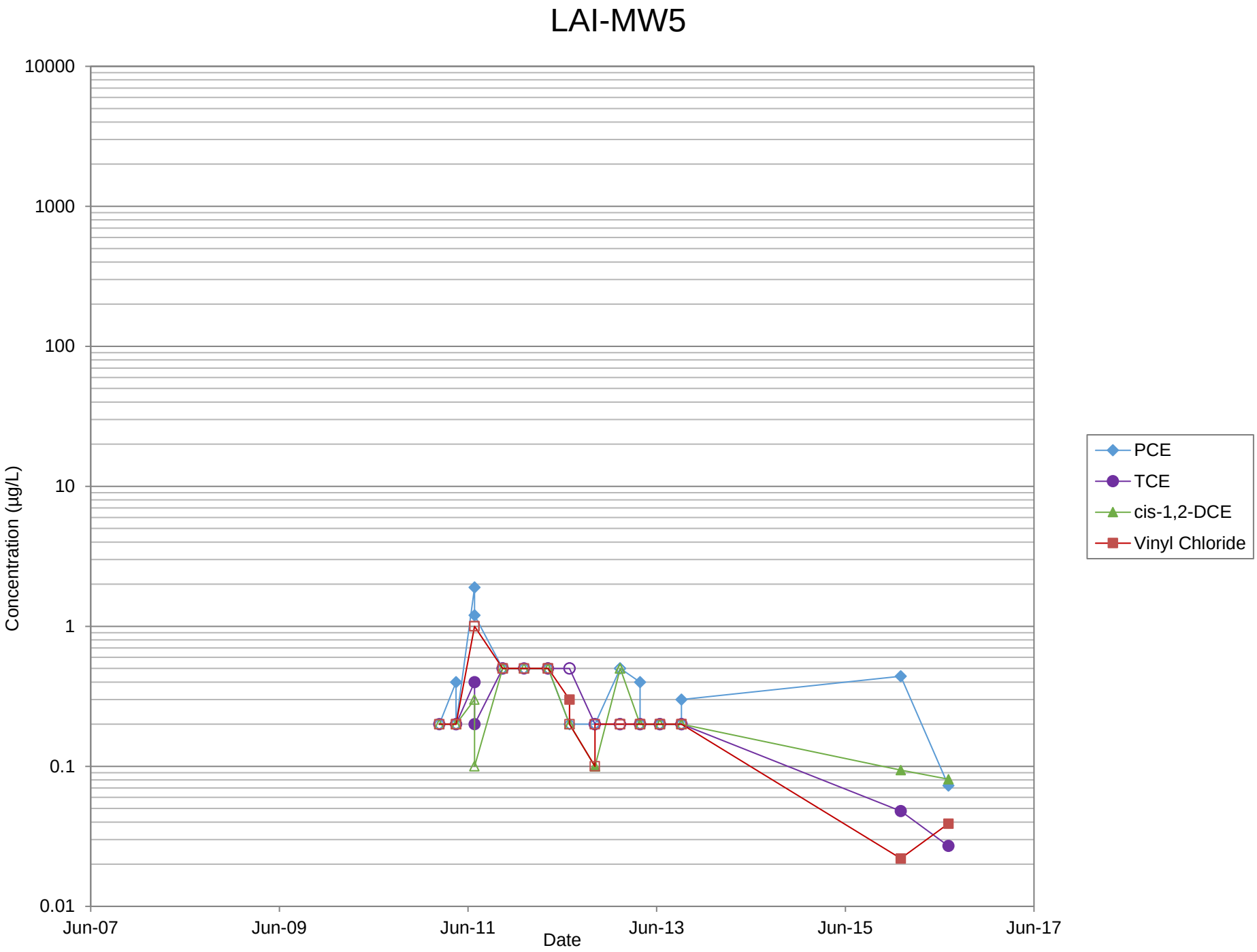
Vinyl Chloride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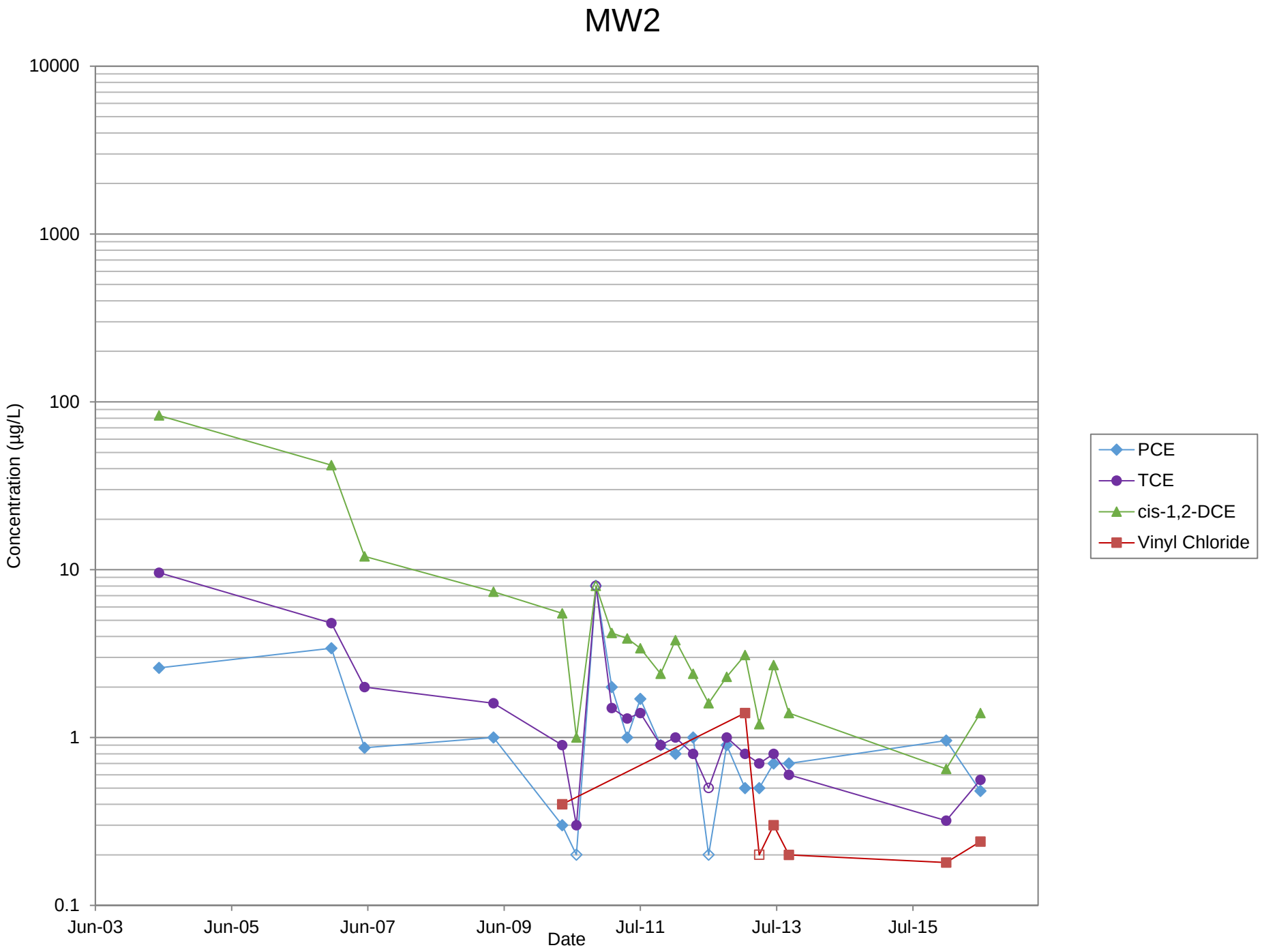
cis-1,2-DCE
Vinyl Chloride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Date
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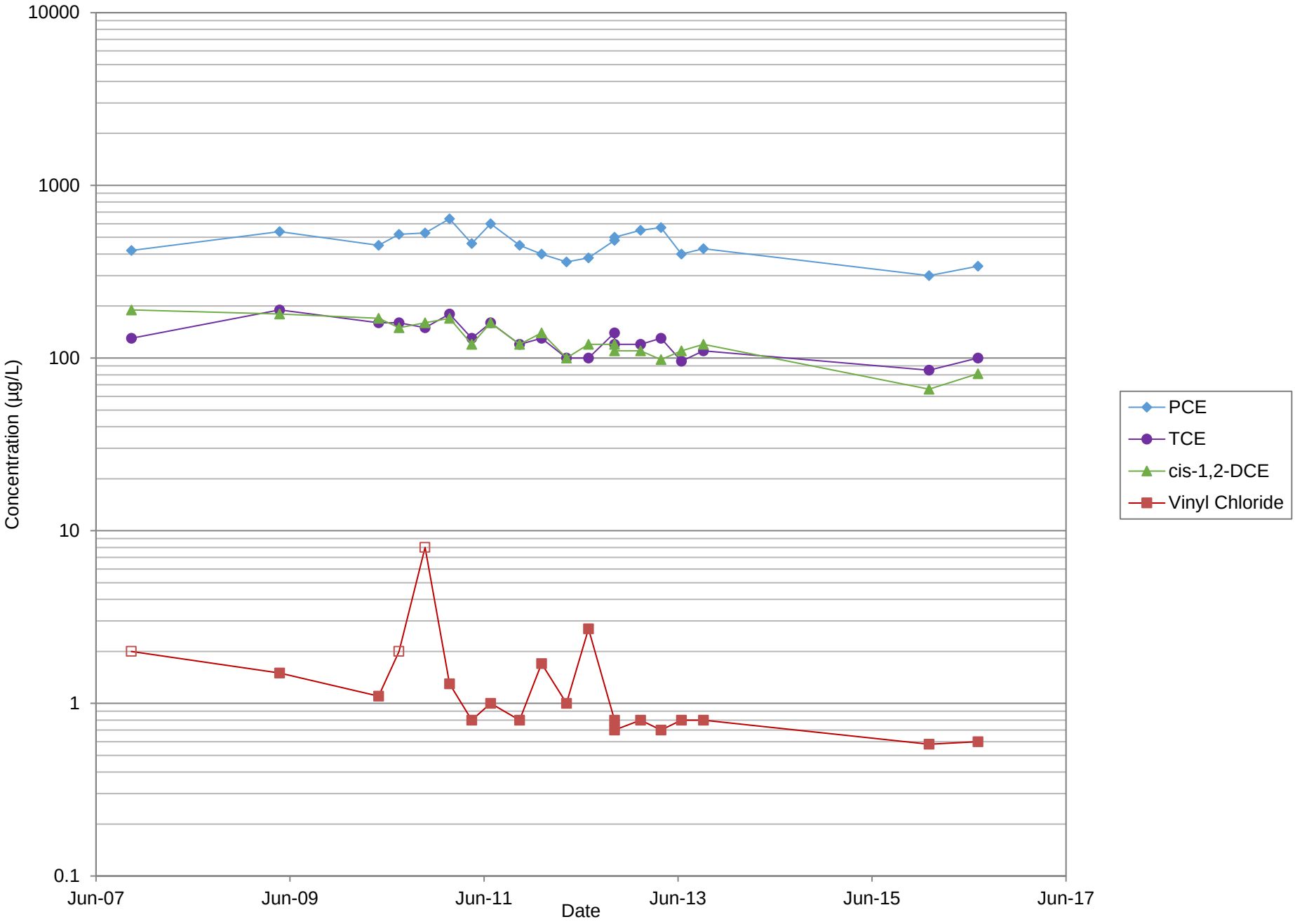
TCE
cis-1,2-DCE
Vinyl Chloride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Concentration (µg/L)
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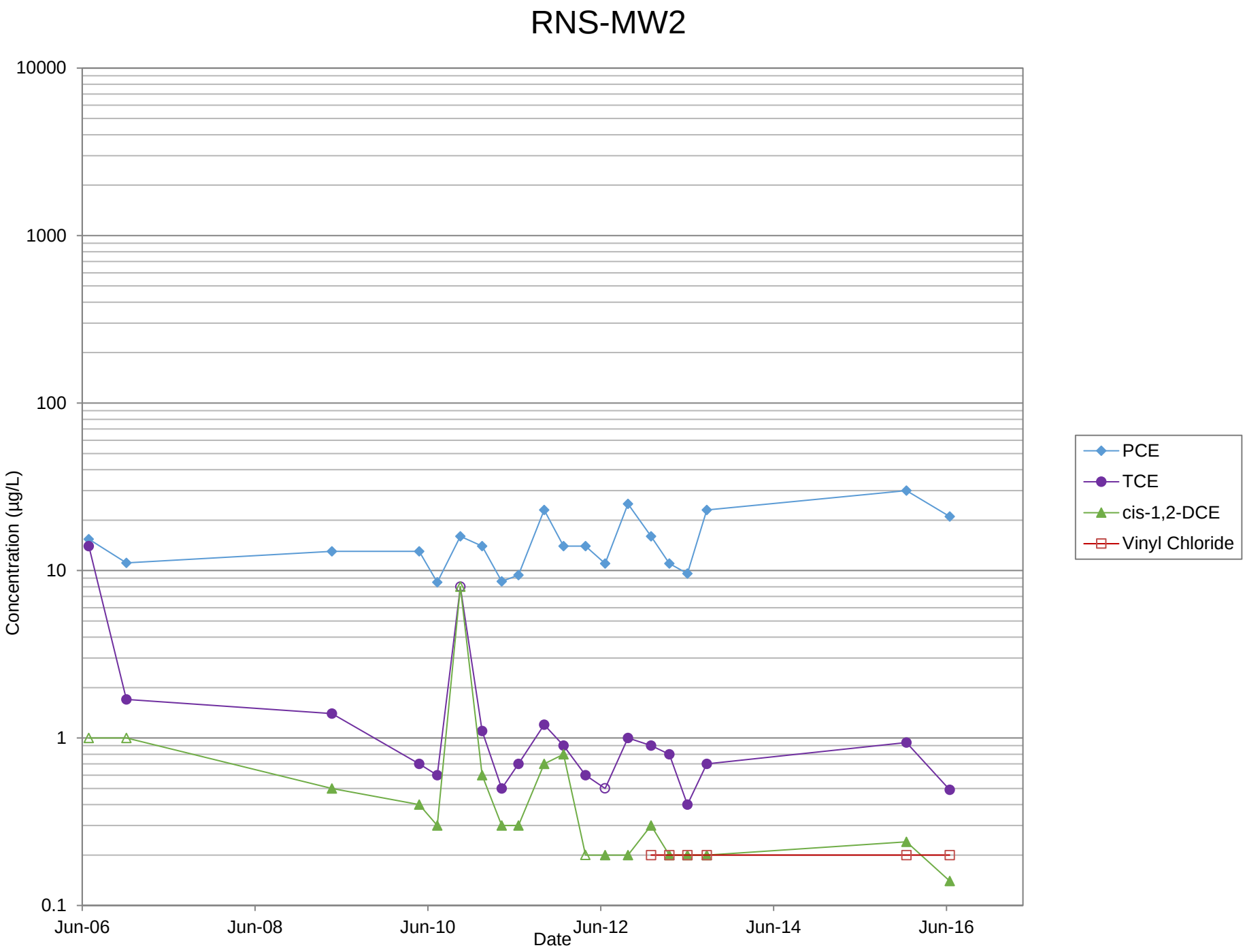
Jun-11
Jun-13
Jun-15
Jun-17
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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Concentration (µg/L)
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Jun-10
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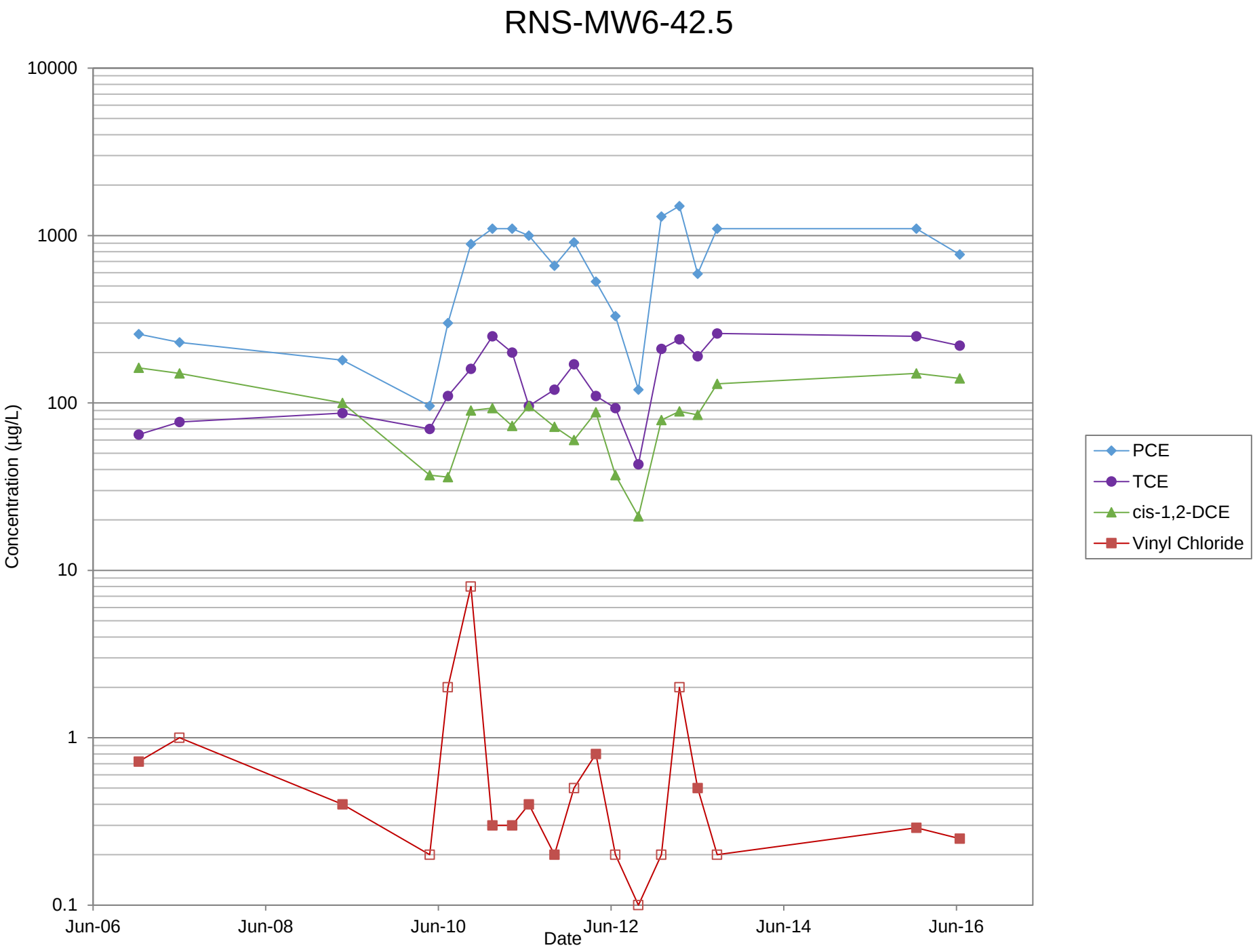
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride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Concentration (µg/L)
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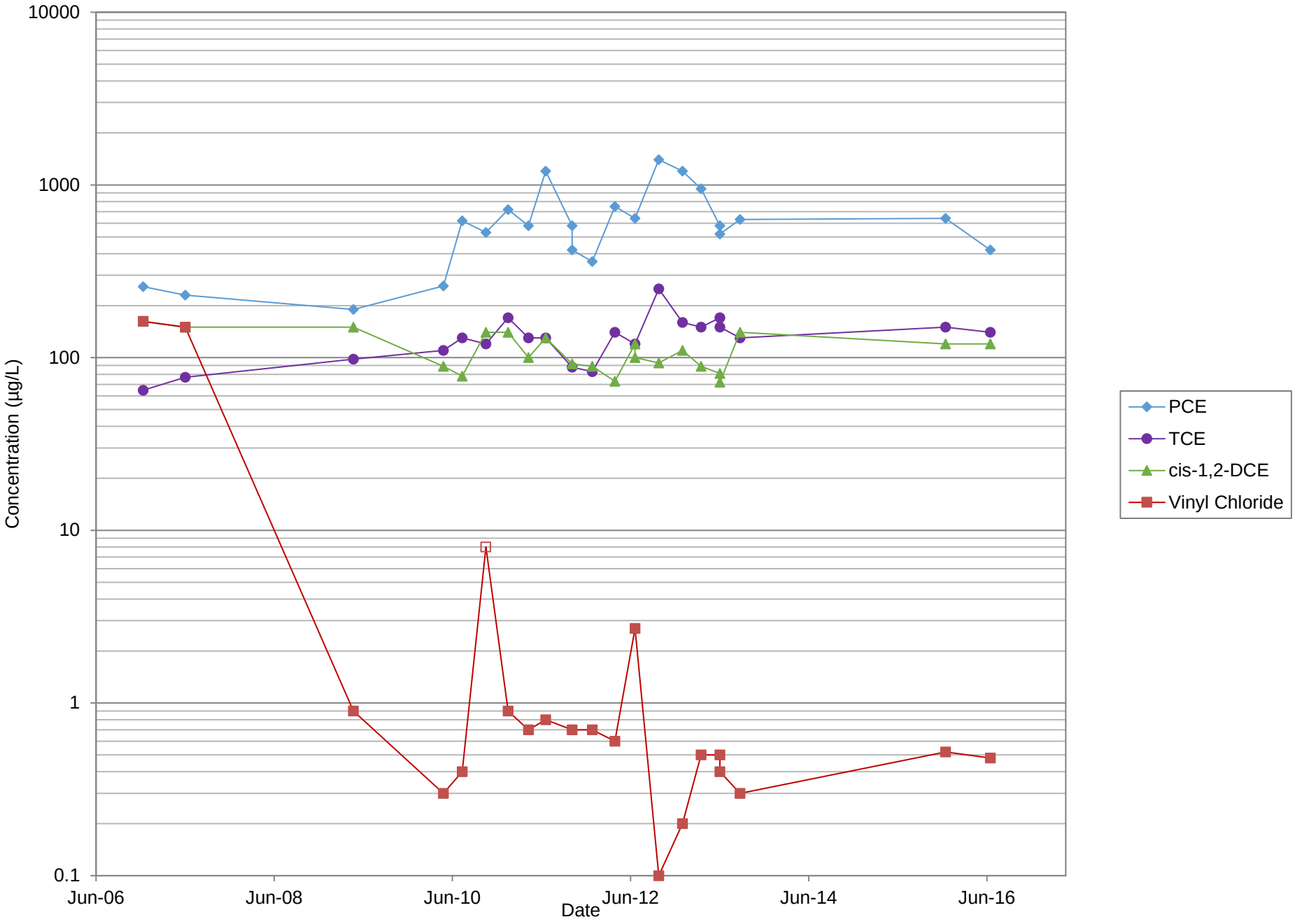
cis-1,2-DCE
Vinyl Chloride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1000
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10
1
0.1
Concentration (µg/L)
Jun-06
Jun-08
Jun-10
Jun-12
Jun-14
Jun-16
Date
PCE
TCE
cis-1,2-DCE
Vinyl Chloride

ATTACHMENT 2

July 2016 Laboratory Data Packages

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING



ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-60854-1
Client Project/Site: Sauro's - Groundwater Monitoring
Revision: 1

For:
Landau & Associates, Inc.
950 Pacific Avenue, Suite 515
Tacoma, Washington 98402

Attn: Jennifer Wynkoop

Authorized for release by:
7/28/2016 9:41:37 AM

Robert Greer, Project Manager II
(253)922-2310
robert.greer@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

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

TestAmerica Job ID: 580-60854-1

Job ID: 580-60854-1

Laboratory: TestAmerica Seattle

Narrative

Chloride analysis was added by client on July 27th, 2016

Job Narrative
580-60854-1

Comments
No additional comments.

Receipt
The samples were received on 7/7/2016 4:18 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2º C.

GC/MS VOA
Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: LAI-MW2-20160707 (580-60854-3), MW13-20160707 (580-60854-8), RNS-MW6-42.5-20160707 (580-60854-10) and RNS-MW6-52.5-20160707 (580-60854-11). 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(s) RSK-175: Ethane eluted outside the retention time window on the front column for the following samples: LAI-MW4-20160707 (580-60854-5) and Dup1-20160707 (580-60854-12). This retention time shift is the result of matrix interference. Ethane is qualitatively confirmed on the rear column. However, since the rear column does not provide ethane quantitation due to coelution with acetylene, data has been reported from the front column. (RSK batch 280-334088)

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

General Chemistry
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

TestAmerica Job ID: 580-60854-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
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)

Sample Summary

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

TestAmerica Job ID: 580-60854-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-60854-1	Trip Blanks	Water	07/07/16 00:01	07/07/16 16:18
580-60854-2	LAI-MW1-20160707	Water	07/07/16 11:23	07/07/16 16:18
580-60854-3	LAI-MW2-20160707	Water	07/07/16 09:53	07/07/16 16:18
580-60854-4	LAI-MW3-20160707	Water	07/07/16 12:09	07/07/16 16:18
580-60854-5	LAI-MW4-20160707	Water	07/07/16 08:40	07/07/16 16:18
580-60854-6	LAI-MW5-20160707	Water	07/07/16 15:41	07/07/16 16:18
580-60854-7	MW2-20160707	Water	07/07/16 13:20	07/07/16 16:18
580-60854-8	MW13-20160707	Water	07/07/16 10:38	07/07/16 16:18
580-60854-9	RNS-MW2-20160707	Water	07/07/16 13:05	07/07/16 16:18
580-60854-10	RNS-MW6-42.5-20160707	Water	07/07/16 13:41	07/07/16 16:18
580-60854-11	RNS-MW6-52.5-20160707	Water	07/07/16 14:01	07/07/16 16:18
580-60854-12	Dup1-20160707	Water	07/07/16 08:42	07/07/16 16:18

REVISED COC

LANDAU ASSOCIATES

- [ ] Seattle/Edmonds (425) 778-0907
- [x] Tacoma (253) 926-2493
- [ ] Spokane (509) 327-9737
- [ ] Portland (503) 542-1080
- [ ] _____

Chain-of-Custody Record

Date 7/7/16

Page 1 of 1

60854

Project Name Sauro's Project No. 094048.090.094

Project Location/Event Tacoma, WA / July 2016

Sampler's Name Sierra Mott and Katie Gauglitz

Project Contact Sierra Mott

Send Results To Dani Jorgensen, Sierra Mott

Testing Parameters

Turnaround Time
- [x] Standard
- [ ] Accelerated
- [ ] _____

	Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (Method 8260C)	Sulfate (300.0)	Nitrate (300.0)	TOC (5310 B)	Sulfide (4500-SD2)	AMEE (RSK175)	Chloride Added 7/27/16 By client				
-1	TripBlanks	—	—	H2O	6	X										
	LA1-MW1-20160707	7/7/16	1123		9	X	X	X	X	X	X	X				
-3	LA1-MW2-20160707		953		9	X	X	X	X	X	X	X				
	LA1-MW3-20160707		1209		9	X	X	X	X	X	X	X				
-5	LA1-MW4-20160707		840		9	X	X	X	X	X	X	X				
	LA1-MW5-20160707		1541		9	X	X	X	X	X	X	X				
-7	MW2-20160707		1320		9	X	X	X	X	X	X	X				
	MW13-20160707		1038		9	X	X	X	X	X	X	X				
-9	RNS-MW2-20160707		1305		9	X	X	X	X	X	X	X				
	RNS-MW6-42.5-20160707		1341		3	X										
-11	RNS-MW6-52.5-20160707		1401		9	X	X	X	X	X	X	X				
	Dup 1-20160707		842		9	X	X	X	X	X	X	X				

Observations/Comments

- X Allow water samples to settle, collect aliquot from clear portion
- ___ NWTPH-Dx - run acid wash silica gel cleanup
- ___ Analyze for EPH if no specific product identified

VOC/BTEX/VPH (soil):
- ___ non-preserved
- ___ preserved w/methanol
- ___ preserved w/sodium bisulfate
- ___ Freeze upon receipt
- ___ Dissolved metal water samples field filtered

Other Allow all samples to settle, collect aliquot from clear portion.

580-60854 Chain of Custody

TB A2 Cooler ___ Cor 3.2 w/o Unc 3.0

Cooler Dsc Ly White @Lab ___

Wet Packs Packing other clidro

Special Shipment/Handling or Storage Requirements cooler on ice

Method of Shipment drop off

Relinquished by	Received by	Relinquished by	Received by
Signature Katie M. Gauglitz	Signature Tom Blankinship	Signature	Signature
Printed Name Katie Gauglitz	Printed Name Blankinship	Printed Name	Printed Name
Company Landau Associates	Company TA-Sea	Company	Company
Date 7/7/2016 Time 1618	Date 7/7/16 Time 1618	Date Time	Date Time

WHITE COPY - Project File YELLOW COPY - Laboratory PINK COPY - Client Representative 12/2014

LANDAU ASSOCIATES

- ☐ Seattle/Edmonds (425) 778-0907
- ☒ Tacoma (253) 926-2493
- ☐ Spokane (509) 327-9737
- ☐ Portland (503) 542-1080
- ☐ _____

Chain-of-Custody Record

Date 7/7/16

Page 1 of 1

60854

Project Name Saura's Project No. 0940048.090.094

Project Location/Event Tacoma, WA / July 2016

Sampler's Name Sierra Mott and Katie Gauglitz

Project Contact Sierra Mott

Send Results To Dani Jorgensen, Sierra Mott

Testing Parameters

Turnaround Time
- ☒ Standard
- ☐ Accelerated
- ☐ _____

	Sample I.D.	Date	Time	Matrix	No. of Containers	VOCs (Method 8260C)	Sulfate (300.0)	Nitrate (300.0)	TOC (5310 B)	Sulfide (4500-S2)	AMEE (RSK DS)	Observations/Comments
-1	TripBlanks	—	—	H2O	6	X						X Allow water samples to settle, collect aliquot from clear portion
	LA1-MW1-20160707	7/7/16	1123		9	X	X	X	X	X	X	___ NWTPH-Dx - run acid wash silica gel cleanup
-3	LA1-MW2-20160707		953		9	X	X	X	X	X	X	
	LA1-MW3-20160707		1209		9	X	X	X	X	X	X	___ Analyze for EPH if no specific product identified
-5	LA1-MW4-20160707		840		9	X	X	X	X	X	X	
	LA1-MW5-20160707		1541		9	X	X	X	X	X	X	VOC/BTEX/VPH (soil):
-7	MW2-20160707		1320		9	X	X	X	X	X	X	___ non-preserved
	MW13-20160707		1038		9	X	X	X	X	X	X	___ preserved w/methanol
-9	RNS-MW2-20160707		1305		9	X	X	X	X	X	X	___ preserved w/sodium bisulfate
	RNS-MW6-42.5-20160707		1341		3	X						___ Freeze upon receipt
-11	RNS-MW6-52.5-20160707		1401		9	X	X	X	X	X	X	___ Dissolved metal water samples field filtered
	Dup 1-20160707		842		9	X	X	X	X	X	X	Other Allow all samples to settle collect aliquot from clear portion.

580-60854 Chain of Custody

TB A2 Cooler ___ Cor 3.2 w/o Unc 3.0

Cooler Dsc Lg White @Lab ___

Wet/Packs Packing ___ other clidro

Special Shipment/Handling or Storage Requirements cooler on ice

Method of Shipment drop off

Relinquished by	Received by	Relinquished by	Received by
Signature Katie M Gauglitz	Signature Tom Blankinship	Signature	Signature
Printed Name Katie Gauglitz	Printed Name Blankinship	Printed Name	Printed Name
Company Landau Associates	Company TA-Sea	Company	Company
Date 7/7/2016 Time 1618	Date 7/7/16 Time 1618	Date Time	Date Time

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

7/28/2016 2/2014

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Greer, Robert A	Carrier Tracking No(s):	COC No: 580-39573.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: robert.greer@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 580-60854-1
Address: 4955 Yarrow Street,	Due Date Requested: 7/19/2016			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(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)	RSK_175/ (MOD) Local Method	SM4500_S2_D/ Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LAI-MW1-20160707 (580-60854-2)	7/7/16	11:23 Pacific		Water			X	X	1	
LAI-MW2-20160707 (580-60854-3)	7/7/16	09:53 Pacific		Water			X	X	1	
LAI-MW3-20160707 (580-60854-4)	7/7/16	12:09 Pacific		Water			X	X	1	
LAI-MW4-20160707 (580-60854-5)	7/7/16	08:40 Pacific		Water			X	X	1	
LAI-MW5-20160707 (580-60854-6)	7/7/16	15:41 Pacific		Water			X	X	1	
MW2-20160707 (580-60854-7)	7/7/16	13:20 Pacific		Water			X	X	1	
MW13-20160707 (580-60854-8)	7/7/16	10:38 Pacific		Water			X	X	1	
RNS-MW2-20160707 (580-60854-9)	7/7/16	13:05 Pacific		Water			X	X	1	
RNS-MW6-52.5-20160707 (580-60854-11)	7/7/16	14:01 Pacific		Water			X	X	1	
Dup1-20160707 (580-60854-12)	7/7/16	08:42 Pacific		Water			X	X	1	

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)

Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	B. Hall	7-8-16 1340	SEATA		7/9/16 0845	TAO
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 1.8+0.0 IR#5 DW 7/9/16

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7/28/2016

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Greer, Robert A	Carrier Tracking No(s):	COC No: 580-39574.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: robert.greer@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 580-60854-1

Address: 4955 Yarrow Street,	Due Date Requested: 7/19/2016
City: Arvada	TAT Requested (days):
State, Zip: CO, 80002	
Phone: 303-736-0100(Tel) 303-431-7171(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)	RSK_175/ (MOD) Local Method	SM4500_S2_D/ Sulfide	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LAI-MW1-20160707 (580-60854-2)	7/7/16	11:23 Pacific		Water			X	X	3	
LAI-MW2-20160707 (580-60854-3)	7/7/16	09:53 Pacific		Water			X	X	3	
LAI-MW3-20160707 (580-60854-4)	7/7/16	12:09 Pacific		Water			X	X	3	
LAI-MW4-20160707 (580-60854-5)	7/7/16	08:40 Pacific		Water			X	X	3	
LAI-MW5-20160707 (580-60854-6)	7/7/16	15:41 Pacific		Water			X	X	3	
MW2-20160707 (580-60854-7)	7/7/16	13:20 Pacific		Water			X	X	3	
MW13-20160707 (580-60854-8)	7/7/16	10:38 Pacific		Water			X	X	3	
RNS-MW2-20160707 (580-60854-9)	7/7/16	13:05 Pacific		Water			X	X	3	
RNS-MW6-52.5-20160707 (580-60854-11)	7/7/16	14:01 Pacific		Water			X	X	3	
Dup1-20160707 (580-60854-12)	7/7/16	08:42 Pacific		Water			X	X	3	

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)	Special Instructions/QC Requirements:

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

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	B. Stell	7-8-16 1340	SEATA		7/9/16 0845	TAL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Page 9 of 33

7/28/2016

Login Sample Receipt Checklist

Client: Landau & Associates, Inc.

Job Number: 580-60854-1

Login Number: 60854
List Number: 1
Creator: Blankinship, Tom X

List Source: TestAmerica Seattle

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?	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: 580-60854-1

Login Number: 60854
List Number: 2
Creator: White, Denise E

List Source: TestAmerica Denver
List Creation: 07/09/16 11:35 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.	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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method: 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: Trip Blanks
Date Collected: 07/07/16 00:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-1
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20	ug/L			07/19/16 21:37	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 21:37	1
cis-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 21:37	1
Trichloroethene	ND		0.20	ug/L			07/19/16 21:37	1
Tetrachloroethene	ND		0.20	ug/L			07/19/16 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*89*		*74 - 118*		*07/19/16 21:37*	*1*
Toluene-d8 (Surr)	*95*		*75 - 125*		*07/19/16 21:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*07/19/16 21:37*	*1*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*		*07/19/16 21:37*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*07/19/16 21:37*	*1*

Client Sample ID: LAI-MW1-20160707
Date Collected: 07/07/16 11:23
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-2
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20	ug/L			07/19/16 23:21	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 23:21	1
cis-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 23:21	1
Trichloroethene	ND		0.20	ug/L			07/19/16 23:21	1
Tetrachloroethene	**0.12**	**J**	0.20	ug/L			07/19/16 23:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*97*		*74 - 118*		*07/19/16 23:21*	*1*
Toluene-d8 (Surr)	*102*		*75 - 125*		*07/19/16 23:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*46 - 150*		*07/19/16 23:21*	*1*
4-Bromofluorobenzene (Surr)	*101*		*81 - 120*		*07/19/16 23:21*	*1*
Dibromofluoromethane (Surr)	*106*		*42 - 132*		*07/19/16 23:21*	*1*

Client Sample ID: LAI-MW2-20160707
Date Collected: 07/07/16 09:53
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-3
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.61**		0.20	ug/L			07/19/16 23:47	1
trans-1,2-Dichloroethene	**1.3**		0.20	ug/L			07/19/16 23:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*98*		*74 - 118*		*07/19/16 23:47*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*		*07/19/16 23:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*46 - 150*		*07/19/16 23:47*	*1*
4-Bromofluorobenzene (Surr)	*99*		*81 - 120*		*07/19/16 23:47*	*1*
Dibromofluoromethane (Surr)	*100*		*42 - 132*		*07/19/16 23:47*	*1*

Client Sample ID: LAI-MW3-20160707
Date Collected: 07/07/16 12:09
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-4
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.095**	**J**	0.20	ug/L			07/20/16 00:13	1
trans-1,2-Dichloroethene	**0.38**		0.20	ug/L			07/20/16 00:13	1
cis-1,2-Dichloroethene	**43**		0.20	ug/L			07/20/16 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*98*		*74 - 118*		*07/20/16 00:13*	*1*
Toluene-d8 (Surr)	*98*		*75 - 125*		*07/20/16 00:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*46 - 150*		*07/20/16 00:13*	*1*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*		*07/20/16 00:13*	*1*
Dibromofluoromethane (Surr)	*104*		*42 - 132*		*07/20/16 00:13*	*1*

Client Sample ID: LAI-MW4-20160707
Date Collected: 07/07/16 08:40
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-5
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.030**	**J**	0.20	ug/L			07/20/16 00:39	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 00:39	1
cis-1,2-Dichloroethene	**0.085**	**J**	0.20	ug/L			07/20/16 00:39	1
Trichloroethene	ND		0.20	ug/L			07/20/16 00:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*99*		*74 - 118*		*07/20/16 00:39*	*1*
Toluene-d8 (Surr)	*96*		*75 - 125*		*07/20/16 00:39*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*46 - 150*		*07/20/16 00:39*	*1*
4-Bromofluorobenzene (Surr)	*101*		*81 - 120*		*07/20/16 00:39*	*1*
Dibromofluoromethane (Surr)	*99*		*42 - 132*		*07/20/16 00:39*	*1*

Client Sample ID: LAI-MW5-20160707
Date Collected: 07/07/16 15:41
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-6
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.039**	**J**	0.20	ug/L			07/20/16 01:05	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 01:05	1
cis-1,2-Dichloroethene	**0.081**	**J**	0.20	ug/L			07/20/16 01:05	1
Trichloroethene	**0.027**	**J**	0.20	ug/L			07/20/16 01:05	1
Tetrachloroethene	**0.073**	**J**	0.20	ug/L			07/20/16 01:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*97*		*74 - 118*		*07/20/16 01:05*	*1*
Toluene-d8 (Surr)	*96*		*75 - 125*		*07/20/16 01:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*46 - 150*		*07/20/16 01:05*	*1*
4-Bromofluorobenzene (Surr)	*100*		*81 - 120*		*07/20/16 01:05*	*1*
Dibromofluoromethane (Surr)	*103*		*42 - 132*		*07/20/16 01:05*	*1*

Client Sample ID: MW2-20160707
Date Collected: 07/07/16 13:20
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-7
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.24**		0.20	ug/L			07/20/16 01:31	1
trans-1,2-Dichloroethene	**0.060**	**J**	0.20	ug/L			07/20/16 01:31	1
cis-1,2-Dichloroethene	**1.4**		0.20	ug/L			07/20/16 01:31	1
Trichloroethene	**0.56**		0.20	ug/L			07/20/16 01:31	1
Tetrachloroethene	**0.48**		0.20	ug/L			07/20/16 01:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*99*		*74 - 118*		*07/20/16 01:31*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*		*07/20/16 01:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*46 - 150*		*07/20/16 01:31*	*1*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*		*07/20/16 01:31*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*07/20/16 01:31*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW13-20160707
Date Collected: 07/07/16 10:38
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-8
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.60**		0.20	ug/L			07/20/16 01:57	1
trans-1,2-Dichloroethene	**0.96**		0.20	ug/L			07/20/16 01:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*97*		*74 - 118*		*07/20/16 01:57*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*		*07/20/16 01:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*46 - 150*		*07/20/16 01:57*	*1*
4-Bromofluorobenzene (Surr)	*99*		*81 - 120*		*07/20/16 01:57*	*1*
Dibromofluoromethane (Surr)	*103*		*42 - 132*		*07/20/16 01:57*	*1*

Client Sample ID: RNS-MW2-20160707
Date Collected: 07/07/16 13:05
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-9
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20	ug/L			07/20/16 02:24	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 02:24	1
cis-1,2-Dichloroethene	**0.14**	**J**	0.20	ug/L			07/20/16 02:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*98*		*74 - 118*		*07/20/16 02:24*	*1*
Toluene-d8 (Surr)	*95*		*75 - 125*		*07/20/16 02:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*46 - 150*		*07/20/16 02:24*	*1*
4-Bromofluorobenzene (Surr)	*99*		*81 - 120*		*07/20/16 02:24*	*1*
Dibromofluoromethane (Surr)	*102*		*42 - 132*		*07/20/16 02:24*	*1*

Client Sample ID: RNS-MW6-42.5-20160707
Date Collected: 07/07/16 13:41
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-10
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.25**		0.20	ug/L			07/20/16 02:50	1
trans-1,2-Dichloroethene	**1.2**		0.20	ug/L			07/20/16 02:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*99*		*74 - 118*		*07/20/16 02:50*	*1*
Toluene-d8 (Surr)	*95*		*75 - 125*		*07/20/16 02:50*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*46 - 150*		*07/20/16 02:50*	*1*
4-Bromofluorobenzene (Surr)	*96*		*81 - 120*		*07/20/16 02:50*	*1*
Dibromofluoromethane (Surr)	*100*		*42 - 132*		*07/20/16 02:50*	*1*

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.48**		0.20	ug/L			07/20/16 03:16	1
trans-1,2-Dichloroethene	**1.4**		0.20	ug/L			07/20/16 03:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*96*		*74 - 118*		*07/20/16 03:16*	*1*
Toluene-d8 (Surr)	*96*		*75 - 125*		*07/20/16 03:16*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*46 - 150*		*07/20/16 03:16*	*1*
4-Bromofluorobenzene (Surr)	*99*		*81 - 120*		*07/20/16 03:16*	*1*

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

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*42 - 132*		*07/20/16 03:16*	*1*

Client Sample ID: Dup1-20160707
Date Collected: 07/07/16 08:42
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-12
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.030**	**J**	0.20	ug/L			07/20/16 03:42	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 03:42	1
cis-1,2-Dichloroethene	**0.10**	**J**	0.20	ug/L			07/20/16 03:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*102*		*74 - 118*		*07/20/16 03:42*	*1*
Toluene-d8 (Surr)	*98*		*75 - 125*		*07/20/16 03:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*106*		*46 - 150*		*07/20/16 03:42*	*1*
4-Bromofluorobenzene (Surr)	*100*		*81 - 120*		*07/20/16 03:42*	*1*
Dibromofluoromethane (Surr)	*98*		*42 - 132*		*07/20/16 03:42*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS) - DL

Client Sample ID: LAI-MW2-20160707
Date Collected: 07/07/16 09:53
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-3
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	120		4.0	ug/L			07/20/16 23:02	20
Trichloroethene	140		4.0	ug/L			07/20/16 23:02	20
Tetrachloroethene	350		4.0	ug/L			07/20/16 23:02	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*101*		*74 - 118*		*07/20/16 23:02*	*20*
Toluene-d8 (Surr)	*90*		*75 - 125*		*07/20/16 23:02*	*20*
1,2-Dichloroethane-d4 (Surr)	*118*		*46 - 150*		*07/20/16 23:02*	*20*
4-Bromofluorobenzene (Surr)	*93*		*81 - 120*		*07/20/16 23:02*	*20*
Dibromofluoromethane (Surr)	*109*		*42 - 132*		*07/20/16 23:02*	*20*

Client Sample ID: MW13-20160707
Date Collected: 07/07/16 10:38
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-8
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	81		2.0	ug/L			07/20/16 23:28	10
Trichloroethene	100		2.0	ug/L			07/20/16 23:28	10
Tetrachloroethene	340		2.0	ug/L			07/20/16 23:28	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*88*		*74 - 118*		*07/20/16 23:28*	*10*
Toluene-d8 (Surr)	*92*		*75 - 125*		*07/20/16 23:28*	*10*
1,2-Dichloroethane-d4 (Surr)	*116*		*46 - 150*		*07/20/16 23:28*	*10*
4-Bromofluorobenzene (Surr)	*100*		*81 - 120*		*07/20/16 23:28*	*10*
Dibromofluoromethane (Surr)	*114*		*42 - 132*		*07/20/16 23:28*	*10*

Client Sample ID: RNS-MW6-42.5-20160707
Date Collected: 07/07/16 13:41
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-10
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	140		10	ug/L			07/21/16 00:21	50
Trichloroethene	220		10	ug/L			07/21/16 00:21	50
Tetrachloroethene	770		10	ug/L			07/21/16 00:21	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*93*		*74 - 118*		*07/21/16 00:21*	*50*
Toluene-d8 (Surr)	*102*		*75 - 125*		*07/21/16 00:21*	*50*
1,2-Dichloroethane-d4 (Surr)	*116*		*46 - 150*		*07/21/16 00:21*	*50*
4-Bromofluorobenzene (Surr)	*112*		*81 - 120*		*07/21/16 00:21*	*50*
Dibromofluoromethane (Surr)	*107*		*42 - 132*		*07/21/16 00:21*	*50*

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	120		4.0	ug/L			07/20/16 23:54	20
Trichloroethene	140		4.0	ug/L			07/20/16 23:54	20
Tetrachloroethene	420		4.0	ug/L			07/20/16 23:54	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*96*		*74 - 118*		*07/20/16 23:54*	*20*

Method: 8260C - Volatile Organic Compounds (GC/MS) - DL (Continued)

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		75 - 125		07/20/16 23:54	20
1,2-Dichloroethane-d4 (Surr)	119		46 - 150		07/20/16 23:54	20
4-Bromofluorobenzene (Surr)	107		81 - 120		07/20/16 23:54	20
Dibromofluoromethane (Surr)	113		42 - 132		07/20/16 23:54	20

Method: 8260C - Volatile Organic Compounds (GC/MS) - RA

Client Sample ID: LAI-MW3-20160707
Date Collected: 07/07/16 12:09
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-4
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**38**		0.20	ug/L			07/20/16 22:10	1
Tetrachloroethene	**59**		0.20	ug/L			07/20/16 22:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*93*		*74 - 118*		*07/20/16 22:10*	*1*
Toluene-d8 (Surr)	*101*		*75 - 125*		*07/20/16 22:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*46 - 150*		*07/20/16 22:10*	*1*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*		*07/20/16 22:10*	*1*
Dibromofluoromethane (Surr)	*103*		*42 - 132*		*07/20/16 22:10*	*1*

Client Sample ID: LAI-MW4-20160707
Date Collected: 07/07/16 08:40
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-5
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		0.20	ug/L			07/20/16 21:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*97*		*74 - 118*		*07/20/16 21:44*	*1*
Toluene-d8 (Surr)	*93*		*75 - 125*		*07/20/16 21:44*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*46 - 150*		*07/20/16 21:44*	*1*
4-Bromofluorobenzene (Surr)	*97*		*81 - 120*		*07/20/16 21:44*	*1*
Dibromofluoromethane (Surr)	*107*		*42 - 132*		*07/20/16 21:44*	*1*

Client Sample ID: RNS-MW2-20160707
Date Collected: 07/07/16 13:05
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-9
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.49**		0.20	ug/L			07/20/16 21:17	1
Tetrachloroethene	**21**		0.20	ug/L			07/20/16 21:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*93*		*74 - 118*		*07/20/16 21:17*	*1*
Toluene-d8 (Surr)	*99*		*75 - 125*		*07/20/16 21:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*46 - 150*		*07/20/16 21:17*	*1*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*		*07/20/16 21:17*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*07/20/16 21:17*	*1*

Client Sample ID: Dup1-20160707
Date Collected: 07/07/16 08:42
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-12
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		0.20	ug/L			07/20/16 20:52	1
Tetrachloroethene	ND		0.20	ug/L			07/20/16 20:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*94*		*74 - 118*		*07/20/16 20:52*	*1*
Toluene-d8 (Surr)	*94*		*75 - 125*		*07/20/16 20:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*46 - 150*		*07/20/16 20:52*	*1*
4-Bromofluorobenzene (Surr)	*100*		*81 - 120*		*07/20/16 20:52*	*1*
Dibromofluoromethane (Surr)	*109*		*42 - 132*		*07/20/16 20:52*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: LAI-MW1-20160707
Date Collected: 07/07/16 11:23
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-2
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.00055**	**J**	0.0050	mg/L			07/18/16 21:15	1
Ethylene	ND		0.0050	mg/L			07/18/16 21:15	1
Ethane	ND		0.0050	mg/L			07/18/16 21:15	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:15	1

Client Sample ID: LAI-MW2-20160707
Date Collected: 07/07/16 09:53
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-3
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.027**		0.0050	mg/L			07/18/16 21:24	1
Ethylene	**0.00065**	**J**	0.0050	mg/L			07/18/16 21:24	1
Ethane	**0.0037**	**J**	0.0050	mg/L			07/18/16 21:24	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:24	1

Client Sample ID: LAI-MW3-20160707
Date Collected: 07/07/16 12:09
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-4
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0018**	**J**	0.0050	mg/L			07/18/16 21:29	1
Ethylene	ND		0.0050	mg/L			07/18/16 21:29	1
Ethane	ND		0.0050	mg/L			07/18/16 21:29	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:29	1

Client Sample ID: LAI-MW4-20160707
Date Collected: 07/07/16 08:40
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-5
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**6.4**		0.0050	mg/L			07/18/16 21:44	1
Ethylene	ND		0.0050	mg/L			07/18/16 21:44	1
Ethane	**0.00078**	**J**	0.0050	mg/L			07/18/16 21:44	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:44	1

Client Sample ID: LAI-MW5-20160707
Date Collected: 07/07/16 15:41
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-6
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**9.0**		0.0050	mg/L			07/18/16 21:48	1
Ethylene	ND		0.0050	mg/L			07/18/16 21:48	1
Ethane	ND		0.0050	mg/L			07/18/16 21:48	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:48	1

Client Sample ID: MW2-20160707
Date Collected: 07/07/16 13:20
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-7
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**1.1**		0.0050	mg/L			07/18/16 21:52	1
Ethylene	ND		0.0050	mg/L			07/18/16 21:52	1
Ethane	**0.0013**	**J**	0.0050	mg/L			07/18/16 21:52	1
Acetylene	ND		0.0050	mg/L			07/18/16 21:52	1

Method: RSK-175 - Dissolved Gases (GC)

Client Sample ID: MW13-20160707
Date Collected: 07/07/16 10:38
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-8
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.0063**		0.0050	mg/L			07/18/16 22:07	1
Ethylene	ND		0.0050	mg/L			07/18/16 22:07	1
Ethane	**0.0012**	**J**	0.0050	mg/L			07/18/16 22:07	1
Acetylene	ND		0.0050	mg/L			07/18/16 22:07	1

Client Sample ID: RNS-MW2-20160707
Date Collected: 07/07/16 13:05
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-9
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050	mg/L			07/18/16 22:11	1
Ethylene	ND		0.0050	mg/L			07/18/16 22:11	1
Ethane	ND		0.0050	mg/L			07/18/16 22:11	1
Acetylene	ND		0.0050	mg/L			07/18/16 22:11	1

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**0.077**		0.0050	mg/L			07/18/16 22:16	1
Ethylene	ND		0.0050	mg/L			07/18/16 22:16	1
Ethane	**0.013**		0.0050	mg/L			07/18/16 22:16	1
Acetylene	ND		0.0050	mg/L			07/18/16 22:16	1

Client Sample ID: Dup1-20160707
Date Collected: 07/07/16 08:42
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-12
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**6.1**		0.0050	mg/L			07/18/16 22:20	1
Ethylene	ND		0.0050	mg/L			07/18/16 22:20	1
Ethane	**0.00090**	**J**	0.0050	mg/L			07/18/16 22:20	1
Acetylene	ND		0.0050	mg/L			07/18/16 22:20	1

General Chemistry

Client Sample ID: LAI-MW1-20160707
Date Collected: 07/07/16 11:23
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-2
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 11:13	1
Sulfate	**21**		1.2	mg/L			07/08/16 11:13	1
Chloride	**64**		0.90	mg/L			07/08/16 11:13	1
Nitrate as N	**1.1**		0.20	mg/L			07/08/16 11:13	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**1.4**	**F1**	1.0	mg/L			07/12/16 13:56	1

Client Sample ID: LAI-MW2-20160707
Date Collected: 07/07/16 09:53
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-3
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 11:28	1
Sulfate	**20**		1.2	mg/L			07/08/16 11:28	1
Chloride	**15**		0.90	mg/L			07/08/16 11:28	1
Nitrate as N	ND		0.20	mg/L			07/08/16 11:28	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**1.3**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: LAI-MW3-20160707
Date Collected: 07/07/16 12:09
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-4
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 11:42	1
Sulfate	**22**		1.2	mg/L			07/08/16 11:42	1
Chloride	**23**		0.90	mg/L			07/08/16 11:42	1
Nitrate as N	**0.62**		0.20	mg/L			07/08/16 11:42	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**1.5**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: LAI-MW4-20160707
Date Collected: 07/07/16 08:40
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-5
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 11:56	1
Sulfate	**2.0**		1.2	mg/L			07/08/16 11:56	1
Chloride	**27**		0.90	mg/L			07/08/16 11:56	1
Nitrate as N	ND		0.20	mg/L			07/08/16 11:56	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**2.9**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: LAI-MW5-20160707
Date Collected: 07/07/16 15:41
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-6
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 12:11	1
Sulfate	**4.1**		1.2	mg/L			07/08/16 12:11	1
Chloride	**24**		0.90	mg/L			07/08/16 12:11	1
Nitrate as N	**0.11**	**J**	0.20	mg/L			07/08/16 12:11	1
Sulfide	ND		0.50	mg/L			07/13/16 20:54	10
Total Organic Carbon	**7.5**		1.0	mg/L			07/12/16 13:56	1

General Chemistry

Client Sample ID: MW2-20160707
Date Collected: 07/07/16 13:20
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-7
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 12:25	1
Sulfate	**20**		1.2	mg/L			07/08/16 12:25	1
Chloride	**15**		0.90	mg/L			07/08/16 12:25	1
Nitrate as N	**1.9**		0.20	mg/L			07/08/16 12:25	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**3.3**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: MW13-20160707
Date Collected: 07/07/16 10:38
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-8
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 12:40	1
Sulfate	**33**		1.2	mg/L			07/08/16 12:40	1
Chloride	**16**		0.90	mg/L			07/08/16 12:40	1
Nitrate as N	**0.73**		0.20	mg/L			07/08/16 12:40	1
Sulfide	ND		0.50	mg/L			07/13/16 20:54	10
Total Organic Carbon	**1.5**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: RNS-MW2-20160707
Date Collected: 07/07/16 13:05
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-9
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 12:54	1
Sulfate	**30**		1.2	mg/L			07/08/16 12:54	1
Chloride	**20**		0.90	mg/L			07/08/16 12:54	1
Nitrate as N	**2.9**		0.20	mg/L			07/08/16 12:54	1
Sulfide	ND		0.50	mg/L			07/13/16 20:54	10
Total Organic Carbon	**1.1**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: RNS-MW6-52.5-20160707
Date Collected: 07/07/16 14:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-11
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 13:09	1
Sulfate	**31**		1.2	mg/L			07/08/16 13:09	1
Chloride	**30**		0.90	mg/L			07/08/16 13:09	1
Nitrate as N	**0.58**		0.20	mg/L			07/08/16 13:09	1
Sulfide	ND		0.50	mg/L			07/13/16 20:54	10
Total Organic Carbon	**1.7**		1.0	mg/L			07/12/16 13:56	1

Client Sample ID: Dup1-20160707
Date Collected: 07/07/16 08:42
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-12
Matrix: Water

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 13:23	1
Sulfate	**2.0**		1.2	mg/L			07/08/16 13:23	1
Chloride	**27**		0.90	mg/L			07/08/16 13:23	1
Nitrate as N	ND		0.20	mg/L			07/08/16 13:23	1
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1
Total Organic Carbon	**2.9**		1.0	mg/L			07/12/16 13:56	1

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-222739/4
Matrix: Water
Analysis Batch: 222739

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20	ug/L			07/19/16 19:27	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 19:27	1
cis-1,2-Dichloroethene	ND		0.20	ug/L			07/19/16 19:27	1
Trichloroethene	ND		0.20	ug/L			07/19/16 19:27	1
Tetrachloroethene	ND		0.20	ug/L			07/19/16 19:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Trifluorotoluene (Surr)	*90*		*74 - 118*		*07/19/16 19:27*	*1*
Toluene-d8 (Surr)	*97*		*75 - 125*		*07/19/16 19:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*95*		*46 - 150*		*07/19/16 19:27*	*1*
4-Bromofluorobenzene (Surr)	*108*		*81 - 120*		*07/19/16 19:27*	*1*
Dibromofluoromethane (Surr)	*99*		*42 - 132*		*07/19/16 19:27*	*1*

Lab Sample ID: LCS 580-222739/5
Matrix: Water
Analysis Batch: 222739

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	4.99	4.33		ug/L		87	59 - 140
trans-1,2-Dichloroethene	5.01	5.25		ug/L		105	69 - 124
cis-1,2-Dichloroethene	5.01	5.52		ug/L		110	73 - 130
Trichloroethene	5.01	5.63		ug/L		112	72 - 123
Tetrachloroethene	5.01	5.18		ug/L		103	67 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Trifluorotoluene (Surr)	*102*		*74 - 118*
Toluene-d8 (Surr)	*96*		*75 - 125*
1,2-Dichloroethane-d4 (Surr)	*92*		*46 - 150*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*
Dibromofluoromethane (Surr)	*94*		*42 - 132*

Lab Sample ID: LCSD 580-222739/6
Matrix: Water
Analysis Batch: 222739

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	4.99	4.27		ug/L		86	59 - 140	1	30
trans-1,2-Dichloroethene	5.01	5.12		ug/L		102	69 - 124	3	27
cis-1,2-Dichloroethene	5.01	5.30		ug/L		106	73 - 130	4	20
Trichloroethene	5.01	5.59		ug/L		112	72 - 123	1	20
Tetrachloroethene	5.01	5.05		ug/L		101	67 - 123	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Trifluorotoluene (Surr)	*98*		*74 - 118*
Toluene-d8 (Surr)	*93*		*75 - 125*
1,2-Dichloroethane-d4 (Surr)	*94*		*46 - 150*
4-Bromofluorobenzene (Surr)	*98*		*81 - 120*

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

Lab Sample ID: LCSD 580-222739/6
Matrix: Water
Analysis Batch: 222739

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	*94*		*42 - 132*

Lab Sample ID: MB 580-222813/5
Matrix: Water
Analysis Batch: 222813

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.20	ug/L			07/20/16 17:53	1
trans-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 17:53	1
cis-1,2-Dichloroethene	ND		0.20	ug/L			07/20/16 17:53	1
Trichloroethene	ND		0.20	ug/L			07/20/16 17:53	1
Tetrachloroethene	ND		0.20	ug/L			07/20/16 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	*88*		*74 - 118*		*07/20/16 17:53*	*1*
Toluene-d8 (Surr)	*100*		*75 - 125*		*07/20/16 17:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*46 - 150*		*07/20/16 17:53*	*1*
4-Bromofluorobenzene (Surr)	*105*		*81 - 120*		*07/20/16 17:53*	*1*
Dibromofluoromethane (Surr)	*109*		*42 - 132*		*07/20/16 17:53*	*1*

Lab Sample ID: LCS 580-222813/6
Matrix: Water
Analysis Batch: 222813

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	4.99	4.79		ug/L		96	59 - 140
trans-1,2-Dichloroethene	5.01	5.10		ug/L		102	69 - 124
cis-1,2-Dichloroethene	5.01	5.59		ug/L		112	73 - 130
Trichloroethene	5.01	5.56		ug/L		111	72 - 123
Tetrachloroethene	5.01	5.09		ug/L		101	67 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Trifluorotoluene (Surr)	*93*		*74 - 118*
Toluene-d8 (Surr)	*90*		*75 - 125*
1,2-Dichloroethane-d4 (Surr)	*102*		*46 - 150*
4-Bromofluorobenzene (Surr)	*99*		*81 - 120*
Dibromofluoromethane (Surr)	*96*		*42 - 132*

Lab Sample ID: LCSD 580-222813/7
Matrix: Water
Analysis Batch: 222813

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	4.99	5.34		ug/L		107	59 - 140	11	30
trans-1,2-Dichloroethene	5.01	5.76		ug/L		115	69 - 124	12	27
cis-1,2-Dichloroethene	5.01	5.69		ug/L		114	73 - 130	2	20
Trichloroethene	5.01	5.27		ug/L		105	72 - 123	5	20

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

Lab Sample ID: LCSD 580-222813/7
Matrix: Water
Analysis Batch: 222813

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			5.01	5.10		ug/L		102	67 - 123	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Trifluorotoluene (Surr)	*89*		*74 - 118*
Toluene-d8 (Surr)	*90*		*75 - 125*
1,2-Dichloroethane-d4 (Surr)	*100*		*46 - 150*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*
Dibromofluoromethane (Surr)	*99*		*42 - 132*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-334088/5
Matrix: Water
Analysis Batch: 334088

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050	mg/L			07/18/16 17:58	1
Ethylene	ND		0.0050	mg/L			07/18/16 17:58	1
Ethane	ND		0.0050	mg/L			07/18/16 17:58	1
Acetylene	ND		0.0050	mg/L			07/18/16 17:58	1

Lab Sample ID: LCS 280-334088/6
Matrix: Water
Analysis Batch: 334088

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methane			0.146	0.163		mg/L		112	75 - 125		
Ethylene			0.255	0.278		mg/L		109	75 - 125		
Ethane			0.274	0.311		mg/L		114	75 - 125		
Acetylene			0.237	0.253		mg/L		107	75 - 125		

Lab Sample ID: 580-60854-2 DU
Matrix: Water
Analysis Batch: 334088

Client Sample ID: LAI-MW1-20160707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	0.00055	J		0.000543	J	mg/L				0.8	20
Ethylene	ND			ND		mg/L				NC	20
Ethane	ND			ND		mg/L				NC	20
Acetylene	ND			ND		mg/L				NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-221983/3
Matrix: Water
Analysis Batch: 221983

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.40	mg/L			07/08/16 10:16	1
Nitrate as N	ND		0.20	mg/L			07/08/16 10:16	1

Lab Sample ID: LCS 580-221983/4
Matrix: Water
Analysis Batch: 221983

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	4.83		mg/L		97	90 - 110
Nitrate as N	5.00	4.76		mg/L		95	90 - 110

Lab Sample ID: LCSD 580-221983/5
Matrix: Water
Analysis Batch: 221983

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	4.87		mg/L		97	90 - 110	1	15
Nitrate as N	5.00	4.73		mg/L		95	90 - 110	1	15

Lab Sample ID: MB 580-221984/3
Matrix: Water
Analysis Batch: 221984

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.2	mg/L			07/08/16 10:16	1
Chloride	ND		0.90	mg/L			07/08/16 10:16	1

Lab Sample ID: LCS 580-221984/4
Matrix: Water
Analysis Batch: 221984

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	48.0		mg/L		96	90 - 110
Chloride	50.0	48.9		mg/L		98	90 - 110

Lab Sample ID: LCSD 580-221984/5
Matrix: Water
Analysis Batch: 221984

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
Sulfate	50.0	47.8		mg/L		96	90 - 110	0	15
Chloride	50.0	48.7		mg/L		97	90 - 110	0	15

Method: SM 4500 S2 D - Sulfide, Total

Lab Sample ID: MB 280-333566/4
Matrix: Water
Analysis Batch: 333566

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		0.050	mg/L			07/13/16 20:54	1

Lab Sample ID: LCS 280-333566/3
Matrix: Water
Analysis Batch: 333566

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.488	0.446		mg/L		91	80 - 119

Lab Sample ID: 580-60854-2 MS
Matrix: Water
Analysis Batch: 333566

Client Sample ID: LAI-MW1-20160707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		0.488	0.489		mg/L		100	80 - 119

Lab Sample ID: 580-60854-2 MSD
Matrix: Water
Analysis Batch: 333566

Client Sample ID: LAI-MW1-20160707
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		0.488	0.493		mg/L		101	80 - 119	1	10

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

Lab Sample ID: MB 580-222151/1
Matrix: Water
Analysis Batch: 222151

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

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	mg/L			07/12/16 13:56	1

Lab Sample ID: LCS 580-222151/2
Matrix: Water
Analysis Batch: 222151

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	10.0	8.57		mg/L		86	85 - 115

Lab Sample ID: 580-60854-2 MS
Matrix: Water
Analysis Batch: 222151

Client Sample ID: LAI-MW1-20160707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.4	F1	10.0	8.72	F1	mg/L		74	85 - 115

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

Lab Sample ID: 580-60854-2 MSD
Matrix: Water
Analysis Batch: 222151

Client Sample ID: LAI-MW1-20160707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.4	F1	10.0	8.83	F1	mg/L		75	85 - 115	1	20

Lab Sample ID: 580-60854-2 DU
Matrix: Water
Analysis Batch: 222151

Client Sample ID: LAI-MW1-20160707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Organic Carbon	1.4	F1		1.28		mg/L				6	20

Lab Chronicle

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

TestAmerica Job ID: 580-60854-1

Client Sample ID: Trip Blanks
Date Collected: 07/07/16 00:01
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/19/16 21:37	W1T	TAL SEA

Client Sample ID: LAI-MW1-20160707
Date Collected: 07/07/16 11:23
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/19/16 23:21	W1T	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:15	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 11:13	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 11:13	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: LAI-MW2-20160707
Date Collected: 07/07/16 09:53
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/19/16 23:47	W1T	TAL SEA
Total/NA	Analysis	8260C	DL	20	222813	07/20/16 23:02	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:24	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 11:28	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 11:28	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: LAI-MW3-20160707
Date Collected: 07/07/16 12:09
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 00:13	W1T	TAL SEA
Total/NA	Analysis	8260C	RA	1	222813	07/20/16 22:10	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:29	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 11:42	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 11:42	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: LAI-MW4-20160707

Lab Sample ID: 580-60854-5

Date Collected: 07/07/16 08:40

Matrix: Water

Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 00:39	W1T	TAL SEA
Total/NA	Analysis	8260C	RA	1	222813	07/20/16 21:44	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:44	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 11:56	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 11:56	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: LAI-MW5-20160707

Lab Sample ID: 580-60854-6

Date Collected: 07/07/16 15:41

Matrix: Water

Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 01:05	W1T	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:48	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 12:11	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 12:11	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		10	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: MW2-20160707

Lab Sample ID: 580-60854-7

Date Collected: 07/07/16 13:20

Matrix: Water

Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 01:31	W1T	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 21:52	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 12:25	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 12:25	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: MW13-20160707

Lab Sample ID: 580-60854-8

Date Collected: 07/07/16 10:38

Matrix: Water

Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 01:57	W1T	TAL SEA
Total/NA	Analysis	8260C	DL	10	222813	07/20/16 23:28	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 22:07	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 12:40	RSB	TAL SEA

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	221984	07/08/16 12:40	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		10	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: RNS-MW2-20160707
Lab Sample ID: 580-60854-9
Date Collected: 07/07/16 13:05
Matrix: Water
Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 02:24	W1T	TAL SEA
Total/NA	Analysis	8260C	RA	1	222813	07/20/16 21:17	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 22:11	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 12:54	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 12:54	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		10	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: RNS-MW6-42.5-20160707
Lab Sample ID: 580-60854-10
Date Collected: 07/07/16 13:41
Matrix: Water
Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 02:50	W1T	TAL SEA
Total/NA	Analysis	8260C	DL	50	222813	07/21/16 00:21	TL1	TAL SEA

Client Sample ID: RNS-MW6-52.5-20160707
Lab Sample ID: 580-60854-11
Date Collected: 07/07/16 14:01
Matrix: Water
Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 03:16	W1T	TAL SEA
Total/NA	Analysis	8260C	DL	20	222813	07/20/16 23:54	TL1	TAL SEA
Total/NA	Analysis	RSK-175		1	334088	07/18/16 22:16	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 13:09	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 13:09	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		10	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Client Sample ID: Dup1-20160707
Lab Sample ID: 580-60854-12
Date Collected: 07/07/16 08:42
Matrix: Water
Date Received: 07/07/16 16:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	222739	07/20/16 03:42	W1T	TAL SEA
Total/NA	Analysis	8260C	RA	1	222813	07/20/16 20:52	TL1	TAL SEA

Lab Chronicle

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

TestAmerica Job ID: 580-60854-1

Client Sample ID: Dup1-20160707

Date Collected: 07/07/16 08:42
Date Received: 07/07/16 16:18

Lab Sample ID: 580-60854-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	RSK-175		1	334088	07/18/16 22:20	MPS	TAL DEN
Total/NA	Analysis	300.0		1	221983	07/08/16 13:23	RSB	TAL SEA
Total/NA	Analysis	300.0		1	221984	07/08/16 13:23	RSB	TAL SEA
Total/NA	Analysis	SM 4500 S2 D		1	333566	07/13/16 20:54	NAP	TAL DEN
Total/NA	Analysis	SM 5310B		1	222151	07/12/16 13:56	Z1T	TAL SEA

Laboratory References:

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

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

Certification Summary

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

TestAmerica Job ID: 580-60854-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-17

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2907.01	10-31-17
A2LA	ISO/IEC 17025		2907.01	10-31-17
Alabama	State Program	4	40730	09-30-12 *
Alaska (UST)	State Program	10	UST-30	04-05-17
Arizona	State Program	9	AZ0713	12-19-16
Arkansas DEQ	State Program	6	88-0687	06-01-17
California	State Program	9	2513	08-31-16 *
Connecticut	State Program	1	PH-0686	09-30-16
Florida	NELAP	4	E87667	06-30-16 *
Georgia	State Program	4	N/A	01-09-17
Illinois	NELAP	5	200017	04-30-17
Iowa	State Program	7	370	11-30-16
Kansas	NELAP	7	E-10166	07-31-16 *
Louisiana	NELAP	6	02096	06-30-17
Maine	State Program	1	CO0002	03-03-17
Minnesota	NELAP	5	8-999-405	12-31-16
Nevada	State Program	9	CO0026	07-31-17
New Hampshire	NELAP	1	205310	04-28-17
New Jersey	NELAP	2	CO004	06-30-17
New York	NELAP	2	11964	04-01-17
North Carolina (WW/SW)	State Program	4	358	12-31-16
North Dakota	State Program	8	R-034	01-09-17
Oklahoma	State Program	6	8614	08-31-16 *
Oregon	NELAP	10	4025	01-09-17
Pennsylvania	NELAP	3	68-00664	07-31-16 *
South Carolina	State Program	4	72002001	01-09-17
Texas	NELAP	6	T104704183-15-11	09-30-16
USDA	Federal		P330-13-00369	12-17-16
Utah	NELAP	8	CO00026	07-31-16 *
Virginia	NELAP	3	460232	06-14-17
Washington	State Program	10	C583	08-03-16 *
West Virginia DEP	State Program	3	354	11-30-16
Wisconsin	State Program	5	999615430	08-31-16
Wyoming (UST)	A2LA	8	2907.01	10-31-17

* Certification renewal pending - certification considered valid.