

The order of this data package is as follows:

1. Chain-of-Custody/Lab Request
2. Copies of field COCs
3. Validation Report
4. Laboratory analysis

Comments:

[illegible]

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11162

EVENT NAME: Pajarito (TA-54) MY2017 Q3

SAMPLE ID: CAPA-17-130721

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	04-20-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	12:03		MEDIA:	UA	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-52 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	NA
L	WSP-LL-H-3	1 LITER POLY	1	NONE	L	L

SAMPLE COMMENTS:

susy wind during sampling (325 mph); sample d = 40' from running diesel generator

LOCATION COMMENTS:

None

FIELD PARAMETERS:

Dissolved Oxygen	<u>6.80</u>	mg/L	Flow (in gpm)	<u>3.30</u>	GPM	Oxidation-Reduction Potential	<u>168.9</u>	mV
pH	<u>8.31</u>	SU	Specific Conductance	<u>143.9</u>	uS/cm	Temperature	<u>21.7</u>	deg C
Turbidity	<u>0.60</u>	NTU						

COLLECTED BY (PRINT): A. Vigil, K. Taylor

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) <i>Andrew Vigil</i>	Date/Time 04/20/2017 1400	RECEIVED BY (Printed Name) <i>Sherwood</i> (Signature) <i>Sherwood</i>	Date/Time 4/20/17 1406
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 03/27/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11162

EVENT NAME: Pajarito (TA-54) MY2017 Q3

SAMPLE ID: CAPA-17-130745

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	04-20-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	12:03		MEDIA:	UA	
PRS ID:	NA		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-52 S1		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	FTB	
TOP DEPTH:			SAMPLE USAGE:	QC	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	AS 4/20/17 2	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Flow (in gpm) _____ GPM Oxidation-Reduction Potential _____ mV
pH _____ SU Specific Conductance _____ uS/cm Temperature _____ deg C
Turbidity _____ NTU

COLLECTED BY (PRINT): A. Vigil, K. Tew

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) Andrew Vigil	Date/Time 04/20/2017 1400	RECEIVED BY (Printed Name) J. Sherwood (Signature) J. Sherwood	Date/Time 4/20/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 03/27/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11162

EVENT NAME: Pajarito (TA-54) MY2017 Q3

SAMPLE ID: CAPA-17-130722

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	04-20-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	13:16		MEDIA:	UA	
PRS ID:	NA		SAMPLE TECH CODE:	GSP	
LOCATION ID:	R-52 S2		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	REG	
TOP DEPTH:			SAMPLE USAGE:	INV	
BOTTOM DEPTH:			EXCAVATED:		YES / NO (NA)

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B-VOA	40 ML SEPTUM AMBER GLASS	2	HCL	Y	NA
↓	WSP-LL-H-3	1 LITER POLY	1	NONE	↓	↓

SAMPLE COMMENTS:

gusty wind during sampling (≈ 25 mph) & sampled $\approx 40'$ from running diesel generator

LOCATION COMMENTS:

None

FIELD PARAMETERS:

Dissolved Oxygen	<u>6.63</u>	mg/L	Flow (in gpm)	<u>3.30</u>	GPM	Oxidation-Reduction Potential	<u>243.6</u>	mV
pH	<u>7.90</u>	SU	Specific Conductance	<u>124.7</u>	uS/cm	Temperature	<u>21.9</u>	deg C
Turbidity	<u>0.41</u>	NTU						

COLLECTED BY (PRINT): A. Vigil, K. Tow

RELINQUISHED BY (Printed Name) ANDREW VIGIL (Signature) <i>Andrew Vigil</i>	Date/Time 04/20/2017 1400	RECEIVED BY (Printed Name) S. Sherwood (Signature) <i>S. Sherwood</i>	Date/Time 4/20/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 03/27/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11162

EVENT NAME: Pajarito (TA-54) MY2017 Q3

SAMPLE ID: CAPA-17-130746

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	04-20-2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	13:16		MEDIA:	UA	
PRS ID:	NA		SAMPLE TECH CODE:	DC	
LOCATION ID:	R-52 S2		FIELD PREP:	UF	
LOCATION TYPE:	NA		FIELD QC TYPE:	FTB	
TOP DEPTH:	1		SAMPLE USAGE:	QC	
BOTTOM DEPTH:			EXCAVATED:		YES / NO / NA

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NA	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	AS 4/20/17 21	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Dissolved Oxygen _____ mg/L Flow (in gpm) _____ GPM Oxidation-Reduction Potential _____ mV
pH _____ SU Specific Conductance _____ uS/cm Temperature _____ deg C
Turbidity _____ NTU

COLLECTED BY (PRINT):

RELINQUISHED BY (Printed Name) ANDREW UGIL (Signature) Andrew Ugil	Date/Time 04/20/2017 1400	RECEIVED BY (Printed Name) Sherwood (Signature) Sherwood	Date/Time 4/20/17 1400
RELINQUISHED BY (Printed Name) (Signature)	Date/Time	RECEIVED BY (Printed Name) (Signature)	Date/Time

Report Date: 03/27/2017

DATA VALIDATION REPORT

Chain Of Custody No. 2017-1423

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
421327	EPA:170.0	2		2		
421327	SW-846:8260B	2		2		

SDG	Analytical Method	Analysis Lot ID	Prep Lot ID	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks	Method Blanks	Matrix Spikes	Matrix Spike Dups	Analytical Spikes	Post-Digestion Spikes	Lab Control Samples	Lab Control Sample Dups	Blank Spike	Blank Spike Dups	Lab Duplicates	Storage Blanks	Preparation Blanks	Reagent Blanks
421327	EPA:170.0	NA	NA	2		2															
421327	SW-846:8260B	1660978	1660978	2		2			2					4							

2. Distribution Of Analytes In EDD.

Analytical Method	Analytical Method Category	Field Sample ID	Lab Sample ID	Sample Purpose	Target Analytes	Surrogates	Spiked Compounds	TICS
EPA:170.0	VOC	CAPA-17-130721	421327001	REG	1	0	0	0
EPA:170.0	VOC	CAPA-17-130722	421327003	REG	1	0	0	0
EPA:170.0	VOC	CAPA-17-130745	421327002	FTB	1	0	0	0
EPA:170.0	VOC	CAPA-17-130746	421327004	FTB	1	0	0	0
SW-846:8260B	VOC	CAPA-17-130721	421327001	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-130722	421327003	REG	80	3	0	0
SW-846:8260B	VOC	CAPA-17-130745	421327002	FTB	80	3	0	0
SW-846:8260B	VOC	CAPA-17-130746	421327004	FTB	80	3	0	0
SW-846:8260B	VOC	LCS	1203779612	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203779613	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1203780773	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203780774	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1203779611	MB	80	3	0	0
SW-846:8260B	VOC	MB	1203780772	MB	80	3	0	0

3. Are any analytes missing?

No.

DATA VALIDATION REPORT

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

						Blank Lab Result	Lab Qualifier	Blank Lab Units	Blank Lab Detection Limit
Blank FS ID	Blank Lab Sample	Blank Type	Analytical Method	Sample	Parameter Name				
CAPA-17-130745	421327002	TRIP BLANK	EPA:170.0	W	Temperature	4		Deg C	
CAPA-17-130746	421327004	TRIP BLANK	EPA:170.0	W	Temperature	4		Deg C	

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

DATA VALIDATION REPORT

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

None.

Reason Code

NQ

The analytical laboratory did not qualify the analyte as not detected and/or any other standard qualify. The analyte is detected in the sample.

U_LAB

The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

Field Sample ID	Location ID	Sample Purpose	Analytical Method	No. Unuseable Records	Total Records
CAPA-17-130721	R-52 S1	REG	EPA:170.0	0	1
CAPA-17-130721	R-52 S1	REG	SW-846:8260B	0	80
CAPA-17-130722	R-52 S2	REG	EPA:170.0	0	1
CAPA-17-130722	R-52 S2	REG	SW-846:8260B	0	80
CAPA-17-130745	R-52 S1	FTB	EPA:170.0	0	1
CAPA-17-130745	R-52 S1	FTB	SW-846:8260B	0	80
CAPA-17-130746	R-52 S2	FTB	EPA:170.0	0	1
CAPA-17-130746	R-52 S2	FTB	SW-846:8260B	0	80



May 04, 2017

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

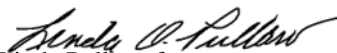
Re: LANL- WQH Water Samples
Work Order: 421327
SDG: 2017-1423

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 22, 2017, and analyzed for GC/MS Volatile. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,


Linda Pullano for
Valerie Davis
Project Manager

Purchase Order: 63641-10
Enclosures



ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Work Order #: 421327
SDG: 2017-1423

Table of Contents

Case Narrative.....	1
Chain of Custody and Supporting Documentation.....	5
Data Review Qualifier Flag Definition Sheet.....	10
Volatile Analysis.....	13
Case Narrative.....	14
Sample Data Summary.....	20
Quality Control Summary.....	33
Quality Control Data.....	57
Miscellaneous.....	88

Case Narrative

**Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Workorder #: 421327
SDG # : 2017-1423**

May 04, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on April 22, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
421327001	CAPA-17-130721
421327002	CAPA-17-130745
421327003	CAPA-17-130722
421327004	CAPA-17-130746

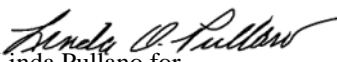
Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: GC/MS Volatile.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.


Linda Pullano for
Valerie Davis
Project Manager

List of current GEL Certifications as of 04 May 2017

State	Certification
Alaska	UST-0110
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA170010
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-17-12
Utah NELAP	SC000122017-22
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Chain of Custody and Supporting Documentation



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>LANL</u>		SDG/AR/COC/Work Order: <u>421327</u>	
Received By: <u>A.K.</u>		Date Received: <u>4-22-17</u>	
Carrier and Tracking Number		Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other <u>5908 1781 9970</u>	
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
Shipped as a DOT Hazardous?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____	
COC/Samples marked or classified as radioactive?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> <u>0</u> <u>0</u> mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
Is package, COC, and/or Samples marked HAZ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____	
Sample Receipt Criteria	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Comments/Qualifiers (Required for Non-Conforming Items)	
1 Shipping containers received intact and sealed?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)	
2 Chain of custody documents included with shipment?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>		
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius <u>TEMP: 4°C</u>	
4 Daily check performed and passed on IR temperature gun?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temperature Device Serial #: <u>124-V1</u> Secondary Temperature Device Serial # (If Applicable): _____	
5 Sample containers intact and sealed?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)	
6 Samples requiring chemical preservation at proper pH?	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sample ID's and Containers Affected: If Preservation added, Lot#: _____	
7 Do any samples require Volatile Analysis?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	If Yes, Are Encores or Soil Kits present? Yes _____ No <input checked="" type="checkbox"/> (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes _____ No <input checked="" type="checkbox"/> N/A _____ (If unknown, select No) VOA vials free of headspace? Yes _____ No <input checked="" type="checkbox"/> N/A _____ Sample ID's and containers affected: _____	
8 Samples received within holding time?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	ID's and tests affected:	
9 Sample ID's on COC match ID's on bottles?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sample ID's and containers affected:	
10 Date & time on COC match date & time on bottles?	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sample ID's affected:	
11 Number of containers received match number indicated on COC? <u>4-22-17</u>	Yes <input checked="" type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>	Sample ID's affected: <u>Didn't receive tritium Bottle.</u>	
12 Are sample containers identifiable as GEL provided?	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>		
13 COC form is properly signed in relinquished/received sections?	Yes <input type="checkbox"/> NA <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Comments (Use Continuation Form if needed):			

PM (or PMA) review: Initials AKP Date 4/24/17 Page 1 of 1

GL-CHL-SR-001 Rev 5

RT
11
E
ST

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 21APR17
ACTWGT: 44.0 LB MAN
CHD: 0014176/CAFE2916

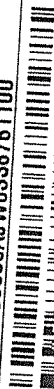
BILL SENDER

TO VALERIE DAVIS

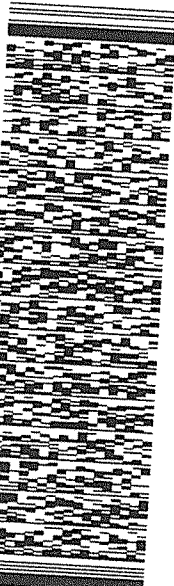
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407
(843) 566-8171

REF: 3S000AJW8S36761100



FedEx
Express

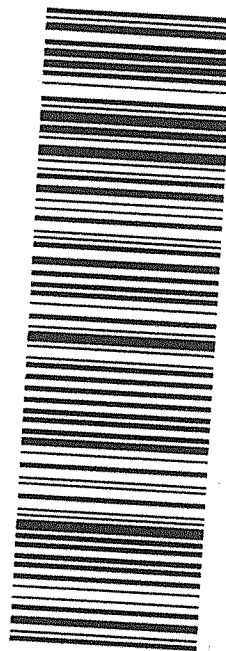


SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 5908 1781 9970
0201

XO CHSA

29407
SC-US CHS



Part # 156148V-434 R1T2 06/15 **

538C2/CFD6/329B

Subject: COC 2017-1423 Two Tritium Samples Not Received
From: Linda Pullano <lop@gel.com>
Date: 4/25/2017 10:36 AM
To: "Greene, Keith Robert" <kgreene@lanl.gov>
CC: Margo Herron <mar01984@gel.com>

Hi Keith,

On Saturday, GEL received water samples for COC 2017-1423. One sample container for Samples CAPA-17-130721 and CAPA-17-130722 for Tritium analysis were not received as part of this shipment.

Linda O. Pullano
Project Manager Assistant



2040 Savage Road, Charleston, SC 29407 | PO Box 30712, Charleston, SC 29417
Office Main: 843.556.8171 ext. 4409 | Fax: 843.766.1178
E-Mail: lop@gel.com | Website: www.gel.com
Environmental | Engineering | Surveying | Analytical Testing

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier	Explanation
*	A quality control analyte recovery is outside of specified acceptance criteria
**	Analyte is a surrogate compound
<	Result is less than value reported
>	Result is greater than value reported
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL
A	The TIC is a suspected aldol-condensation product
B	Target analyte was detected in the associated blank
B	Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL
BD	Results are either below the MDC or tracer recovery is low
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of the sample
d	5-day BOD-The 2:1 depletion requirement was not met for this sample
E	Organics-Concentration of the target analyte exceeds the instrument calibration range
E	Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria
H	Analytical holding time was exceeded
h	Preparation or preservation holding time was exceeded
J	Value is estimated
N	Metals-The Matrix spike sample recovery is not within specified control limits
N	Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor
N/A	Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more
ND	Analyte concentration is not detected above the reporting limit
UI	Gamma Spectroscopy-Uncertain identification
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	QC Samples were not spiked with this compound
Z	Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference.
For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Volatile Analysis

Case Narrative

**GC/MS Volatile
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1423
Work Order #: 421327**

Method/Analysis Information

Procedure: **Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**

Analytical Method: SW-846:8260B

Analytical Batch
Number: 1660978

Sample Analysis

The following client and quality control samples were analyzed to complete this SDG using the methods referenced in the Analysis Information section:

Sample ID	Client ID
421327001	CAPA-17-130721
421327002	CAPA-17-130745
421327003	CAPA-17-130722
421327004	CAPA-17-130746
1203779611	Method Blank (MB)
1203779612	Laboratory Control Sample (LCS)
1203779613	Laboratory Control Sample (LCS)
1203779614	422002001(WSTMO-17-132947) Post Spike (PS)
1203779615	422002001(WSTMO-17-132947) Post Spike (PS)
1203779616	422002001(WSTMO-17-132947) Post Spike Duplicate (PSD)
1203779617	422002001(WSTMO-17-132947) Post Spike Duplicate (PSD)
1203780772	Method Blank (MB)
1203780773	Laboratory Control Sample (LCS)
1203780774	Laboratory Control Sample (LCS)

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

The data results reported met all SOP and method criteria, unless otherwise discussed below.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 25.

Calibration Information

A complete list of the initial calibration data files with the correct dates and times of analysis are shown in the Calibration History report located in the Standard Data section of the data package. The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at a concentration of 50 ug/L or 20 ug/L for low level analyses. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification Requirements

All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Blank (MB) Statement

Target analytes were detected in the blanks 1203779611 (MB) and 1203780772 (MB) below the reporting limit.

Surrogate Recoveries

Surrogate recoveries in all client and quality control samples were within the acceptance limits.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 422002001 (WSTMO-17-132947) was designated for spike analysis.

Matrix Spike/Matrix Spike Duplicate Recovery Statement

The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. The associated spike and/or spike duplicate passed recoveries near the lower/upper end of the limits.

Sample	Analyte	Value
1203779617 (WSTMO-17-132947PSD)	Propionitrile	139* (58%-131%)

Relative Percent Difference (RPD) Statement

The RPDs between the matrix spike pair met the acceptance limits.

Internal Standard (ISTD) Acceptance

The internal standard responses in all client and quality control samples met the required acceptance criteria.

Technical Information

Holding Time Specifications

All samples in this SDG met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Sample Preservation and Integrity

All samples met the sample preservation and integrity requirements.

Sample Dilutions/Methanol Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-analyses were not required for samples in this SDG.

Miscellaneous Information**Data Exception (DER) Documentation**

A data exception report (DER) 1628576 was generated for sample 1203779617 (WSTMO-17-132947PSD) in this SDG/batch.

Manual Integrations

Data files associated with the initial calibration, continuing calibration check, and samples did not require manual integrations.

TIC Comment

Tentatively identified compounds (TIC) may be requested for samples 1203780772 (MB) and All in this delivery group/work order. Please note that non-requested calibrated analytes detected in a client sample may be reported on the Form 1/Certificate of Analysis as TICs. TIC data, if requested, were included on the Sample Data Summary (Form 1) and included with the sample raw data.

Additional Comments

Additional comments were not required for this SDG.

Residual Chlorine

Residual Chlorine was not detected in any of the samples in this SDG.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOA9.I	Agilent 6890/5973 GC/MS w/ OI Eclipse/Archon Autosampler	HP6890/HP5973	DB-624	J&W, 60m x 0.25mm x 1.4um	Trap 10

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1423 GEL Work Order: 421327

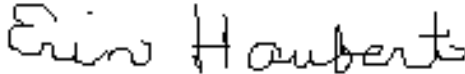
The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Erin Haubert

Date: 17 MAY 2017

Title: Data Validator

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 421327001

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-130721

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/02/2017 18:27

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/02/2017 18:27

Data File: 050217V9\9Q221.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327001

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130721

Batch ID: 1660978

Run Date: 05/02/2017 18:27

Prep Date: 05/02/2017 18:27

Data File: 050217V9\9Q221.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327001

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130721

Batch ID: 1660978

Run Date: 05/02/2017 18:27

Prep Date: 05/02/2017 18:27

Data File: 050217V9\9Q221.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.3	50.0	97	(71%-134%)
Bromofluorobenzene	48.4	50.0	97	(70%-131%)
Toluene-d8	48.1	50.0	96	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.292	8.14	ug/L	0	J
	unknown siloxane	14.663	27.5	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 421327002

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-130745

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/02/2017 17:31

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/02/2017 17:31

Data File: 050217V9\9Q219.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327002

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client: ARSL004

Project: ESHL00114

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/02/2017 17:31

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/02/2017 17:31

Data File: 050217V9\9Q219.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327002

Date Collected: 04/20/2017 12:03

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130745

Batch ID: 1660978

Run Date: 05/02/2017 17:31

Prep Date: 05/02/2017 17:31

Data File: 050217V9\9Q219.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.7	50.0	ug/L 93	(71%-134%)
Bromofluorobenzene	48.6	50.0	ug/L 97	(70%-131%)
Toluene-d8	48.8	50.0	ug/L 98	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.292	9.38	ug/L	0	J
	unknown siloxane	14.652	28.9	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 421327003

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client: ARSL004

Project: ESHL00114

Client ID: CAPA-17-130722

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/02/2017 18:55

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/02/2017 18:55

Data File: 050217V9\9Q222.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327003

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130722

Batch ID: 1660978

Run Date: 05/02/2017 18:55

Prep Date: 05/02/2017 18:55

Data File: 050217V9\9Q222.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number: 2017-1423

Lab Sample ID: 421327003

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130722

Batch ID: 1660978

Run Date: 05/02/2017 18:55

Prep Date: 05/02/2017 18:55

Data File: 050217V9\9Q222.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.5	50.0	ug/L 99	(71%-134%)
Bromofluorobenzene	49.7	50.0	ug/L 99	(70%-131%)
Toluene-d8	49.2	50.0	ug/L 98	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.291	7.55	ug/L	0	J
	unknown siloxane	14.663	22.1	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 421327004

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130746

Batch ID: 1660978

Run Date: 05/02/2017 17:59

Prep Date: 05/02/2017 17:59

Data File: 050217V9\9Q220.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 421327004

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130746

Batch ID: 1660978

Run Date: 05/02/2017 17:59

Prep Date: 05/02/2017 17:59

Data File: 050217V9\9Q220.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 421327004

Date Collected: 04/20/2017 13:16

Date Received: 04/22/2017 09:55

Matrix: W

Client ID: CAPA-17-130746

Batch ID: 1660978

Run Date: 05/02/2017 17:59

Prep Date: 05/02/2017 17:59

Data File: 050217V9\9Q220.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Project: ESHL00114

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.4	50.0	ug/L 95	(71%-134%)
Bromofluorobenzene	48.7	50.0	ug/L 97	(70%-131%)
Toluene-d8	49.3	50.0	ug/L 99	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	14.663	13.7	ug/L	0	J

Quality Control Summary

Volatile
Surrogate Recovery Report

Page 1 of 1

SDG Number: 2017-1423**Matrix Type: LIQUID**

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203779612	LCS for batch 1660978	83	97	95
1203779613	LCS for batch 1660978	85	96	95
1203779611	MB for batch 1660978	85	98	97
421327002	CAPA-17-130745	93	98	97
421327004	CAPA-17-130746	95	99	97
421327001	CAPA-17-130721	97	96	97
421327003	CAPA-17-130722	99	98	99
1203780773	LCS for batch 1660978	97	98	96
1203780774	LCS for batch 1660978	96	98	99
1203780772	MB for batch 1660978	98	98	99
1203779614	WSTMO-17-132947PS	100	98	97
1203779616	WSTMO-17-132947PSD	101	97	96
1203779615	WSTMO-17-132947PS	97	97	100
1203779617	WSTMO-17-132947PSD	94	91	92

Surrogate**Acceptance Limits**

DCED4	= 1,2-Dichloroethane-d4	(71%-134%)
TOL	= Toluene-d8	(74%-124%)
BFB	= Bromofluorobenzene	(70%-131%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203779612

Instrument: VOA9.I

Analysis Date: 05/02/2017 10:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	LCS m,p-Xylenes	100	0.0	94.7	95	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1010	81	61-125
67-64-1	LCS Acetone	250	0.0	230	92	48-157
74-88-4	LCS Iodomethane	250	0.0	241	96	72-128
75-15-0	LCS Carbon disulfide	250	0.0	218	87	69-138
108-05-4	LCS Vinyl acetate	250	0.0	253	101	67-125
78-93-3	LCS 2-Butanone	250	0.0	243	97	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	223	89	66-124
591-78-6	LCS 2-Hexanone	250	0.0	241	96	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	49.9	100	40-160
74-87-3	LCS Chloromethane	50.0	0.0	53.0	106	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	55.5	111	65-137
74-83-9	LCS Bromomethane	50.0	0.0	54.1	108	63-137
75-00-3	LCS Chloroethane	50.0	0.0	52.4	105	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	47.1	94	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	52.6	105	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	39.0	78	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	44.8	90	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	46.3	93	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	42.3	85	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	42.3	85	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	42.3	85	75-123

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203779612

Instrument: VOA9.I

Analysis Date: 05/02/2017 10:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
594-20-7	LCS 2,2-Dichloropropane	50.0	0.0	43.8	88	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	48.2	96	76-125
67-66-3	LCS Chloroform	50.0	0.0	41.7	83	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	41.4	83	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	43.9	88	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	42.0	84	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	38.5	77	74-122
71-43-2	LCS Benzene	50.0	0.0	44.5	89	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	45.0	90	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	42.9	86	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	43.1	86	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	44.4	89	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	46.3	93	78-131
108-88-3	LCS Toluene	50.0	0.0	45.1	90	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	46.6	93	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	43.6	87	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	41.9	84	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	46.3	93	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	50.2	100	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	47.0	94	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	44.7	89	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	43.7	87	73-125

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203779612

Instrument: VOA9.I

Analysis Date: 05/02/2017 10:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
95-47-6	LCS o-Xylene	50.0	0.0	47.7	95	74-126
100-42-5	LCS Styrene	50.0	0.0	49.0	98	72-130
75-25-2	LCS Bromoform	50.0	0.0	52.8	106	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	48.8	98	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	44.0	88	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	43.1	86	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	46.1	92	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	43.2	86	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	46.6	93	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	47.0	94	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	43.0	86	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	51.8	104	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	45.6	91	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	47.2	94	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	47.3	95	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	44.3	89	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	44.2	88	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	44.6	89	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	56.9	114	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	49.6	99	72-136
91-20-3	LCS Naphthalene	50.0	0.0	52.0	104	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	47.0	94	70-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203779612

Instrument: VOA9.I

Analysis Date: 05/02/2017 10:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	50.6	101	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	47.0	94	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	45.8	92	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	4320	86	63-138

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203779613

Instrument: VOA9.I

Analysis Date: 05/02/2017 11:26

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	LCS Acrolein	250	0.0	242	97	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	186	74	61-148
107-05-1	LCS Allyl chloride	250	0.0	187	75	59-125
107-13-1	LCS Acrylonitrile	250	0.0	199	79	65-122
107-12-0	LCS Propionitrile	250	0.0	200	80	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	197	79	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	211	84	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	205	82	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	1920	77	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	38.5	77	66-147

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 8

SDG Number: 2017-1423

Sample Type: Post Spike

Client ID: WSTMO-17-132947PS

Matrix: W

Lab Sample ID 1203779614

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:00

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	PS m,p-Xylenes	100	0.00 U	108	108	59-132
75-05-8	PS Acetonitrile	1250	0.00 U	1290	104	56-131
67-64-1	PS Acetone	250	2.90 BJ	176	69	25-155
74-88-4	PS Iodomethane	250	0.00 U	257	103	66-133
75-15-0	PS Carbon disulfide	250	0.00 U	246	99	61-141
108-05-4	PS Vinyl acetate	250	0.00 U	273	109	48-133
78-93-3	PS 2-Butanone	250	0.00 U	226	91	25-143
108-10-1	PS 4-Methyl-2-pentanone	250	0.00 U	263	105	61-127
591-78-6	PS 2-Hexanone	250	0.00 U	259	103	33-138
75-71-8	PS Dichlorodifluoromethane	50.0	0.00 U	64.6	129	33-164
74-87-3	PS Chloromethane	50.0	0.00 U	58.1	116	53-139
75-01-4	PS Vinyl chloride	50.0	0.00 U	61.1	122	58-140
74-83-9	PS Bromomethane	50.0	0.00 U	58.1	116	59-146
75-00-3	PS Chloroethane	50.0	0.00 U	55.6	111	65-129
75-69-4	PS Trichlorofluoromethane	50.0	0.00 U	62.2	124	65-141
60-29-7	PS Ethyl ether	50.0	0.00 U	51.8	104	69-127
75-35-4	PS 1,1-Dichloroethylene	50.0	0.00 U	47.2	94	59-130
75-09-2	PS Methylene chloride	50.0	0.00 U	47.4	95	62-123
1634-04-4	PS tert-Butyl methyl ether	50.0	0.00 U	51.6	103	69-132
156-60-5	PS trans-1,2-Dichloroethylene	50.0	0.00 U	49.3	99	65-127
75-34-3	PS 1,1-Dichloroethane	50.0	0.00 U	48.1	96	67-127
156-59-2	PS cis-1,2-Dichloroethylene	50.0	0.00 U	49.6	99	69-127

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 8

SDG Number: 2017-1423

Sample Type: Post Spike

Client ID: WSTMO-17-132947PS

Matrix: W

Lab Sample ID 1203779614

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:00

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
594-20-7	PS 2,2-Dichloropropane	50.0	0.00 U	54.1	108	66-137
74-97-5	PS Bromochloromethane	50.0	0.00 U	48.9	98	71-130
67-66-3	PS Chloroform	50.0	0.00 U	50.3	101	71-129
71-55-6	PS 1,1,1-Trichloroethane	50.0	0.00 U	53.4	107	69-139
563-58-6	PS 1,1-Dichloropropene	50.0	0.00 U	51.2	102	67-130
56-23-5	PS Carbon tetrachloride	50.0	0.00 U	57.0	114	66-143
107-06-2	PS 1,2-Dichloroethane	50.0	0.00 U	49.9	100	69-130
71-43-2	PS Benzene	50.0	0.00 U	48.4	97	66-125
79-01-6	PS Trichloroethylene	50.0	0.00 U	52.3	105	65-131
78-87-5	PS 1,2-Dichloropropane	50.0	0.00 U	48.6	97	67-127
74-95-3	PS Dibromomethane	50.0	0.00 U	51.1	102	72-129
75-27-4	PS Bromodichloromethane	50.0	0.00 U	54.5	109	70-138
10061-01-5	PS cis-1,3-Dichloropropylene	50.0	0.00 U	51.6	103	70-134
108-88-3	PS Toluene	50.0	0.00 U	49.9	100	60-126
10061-02-6	PS trans-1,3-Dichloropropylene	50.0	0.00 U	54.2	108	69-135
79-00-5	PS 1,1,2-Trichloroethane	50.0	0.00 U	48.8	98	66-125
142-28-9	PS 1,3-Dichloropropane	50.0	0.00 U	48.3	97	67-124
127-18-4	PS Tetrachloroethylene	50.0	0.00 U	51.4	103	60-130
124-48-1	PS Dibromochloromethane	50.0	0.00 U	58.0	116	68-143
106-93-4	PS 1,2-Dibromoethane	50.0	0.00 U	52.1	104	71-127
108-90-7	PS Chlorobenzene	50.0	0.00 U	50.4	101	64-124
100-41-4	PS Ethylbenzene	50.0	0.00 U	51.8	104	61-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 8

SDG Number: 2017-1423

Sample Type: Post Spike

Client ID: WSTMO-17-132947PS

Matrix: W

Lab Sample ID 1203779614

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:00

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
95-47-6	PS o-Xylene	50.0	0.00 U	53.9	108	62-131
100-42-5	PS Styrene	50.0	0.00 U	54.4	109	59-135
75-25-2	PS Bromoform	50.0	0.00 U	58.4	117	64-138
98-82-8	PS Isopropylbenzene	50.0	0.00 U	54.4	109	55-133
79-34-5	PS 1,1,2,2-Tetrachloroethane	50.0	0.00 U	50.5	101	62-129
96-18-4	PS 1,2,3-Trichloropropane	50.0	0.00 U	53.2	106	70-124
108-86-1	PS Bromobenzene	50.0	0.00 U	49.1	98	62-124
103-65-1	PS n-Propylbenzene	50.0	0.00 U	49.7	99	50-133
108-67-8	PS 1,3,5-Trimethylbenzene	50.0	0.00 U	53.8	108	53-135
95-49-8	PS 2-Chlorotoluene	50.0	0.00 U	51.3	103	56-128
106-43-4	PS 4-Chlorotoluene	50.0	0.00 U	48.8	98	53-130
98-06-6	PS tert-Butylbenzene	50.0	0.00 U	56.1	112	55-135
95-63-6	PS 1,2,4-Trimethylbenzene	50.0	0.00 U	52.5	105	53-132
135-98-8	PS sec-Butylbenzene	50.0	0.00 U	53.9	108	50-138
99-87-6	PS 4-Isopropyltoluene	50.0	0.00 U	53.8	108	49-138
541-73-1	PS 1,3-Dichlorobenzene	50.0	0.00 U	48.4	97	56-126
106-46-7	PS 1,4-Dichlorobenzene	50.0	0.00 U	48.3	97	55-125
104-51-8	PS n-Butylbenzene	50.0	0.00 U	52.6	105	43-142
96-12-8	PS 1,2-Dibromo-3-chloropropane	50.0	0.00 U	64.4	129	62-141
87-68-3	PS Hexachlorobutadiene	50.0	0.00 U	55.5	111	40-147
91-20-3	PS Naphthalene	50.0	0.00 U	55.5	111	62-134
87-61-6	PS 1,2,3-Trichlorobenzene	50.0	0.00 U	48.7	97	52-135

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 8

SDG Number: 2017-1423

Sample Type: Post Spike

Client ID: WSTMO-17-132947PS

Matrix: W

Lab Sample ID 1203779614

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:00

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
120-82-1	PS 1,2,4-Trichlorobenzene	50.0	0.00 U	50.9	102	50-133
630-20-6	PS 1,1,1,2-Tetrachloroethane	50.0	0.00 U	53.6	107	71-133
95-50-1	PS 1,2-Dichlorobenzene	50.0	0.00 U	49.2	98	60-125
71-36-3	PS n-Butyl alcohol	5000	0.00 U	6870	137	60-140

Volatile
Quality Control Summary
Spike Recovery Report

Page 5 of 8

SDG Number: 2017-1423

Sample Type: Post Spike Duplicate

Client ID: WSTMO-17-132947PSD

Matrix: W

Lab Sample ID 1203779616

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
179601-23-1	PSD m,p-Xylenes	100	0.00 U	99.8	100	59-132	8	0-20
75-05-8	PSD Acetonitrile	1250	0.00 U	1300	104	56-131	0	0-20
67-64-1	PSD Acetone	250	2.90 BJ	173	68	25-155	2	0-20
74-88-4	PSD Iodomethane	250	0.00 U	238	95	66-133	8	0-20
75-15-0	PSD Carbon disulfide	250	0.00 U	230	92	61-141	7	0-20
108-05-4	PSD Vinyl acetate	250	0.00 U	289	115	48-133	6	0-20
78-93-3	PSD 2-Butanone	250	0.00 U	223	89	25-143	2	0-20
108-10-1	PSD 4-Methyl-2-pentanone	250	0.00 U	253	101	61-127	4	0-20
591-78-6	PSD 2-Hexanone	250	0.00 U	249	100	33-138	4	0-20
75-71-8	PSD Dichlorodifluoromethane	50.0	0.00 U	67.2	134	33-164	4	0-20
74-87-3	PSD Chloromethane	50.0	0.00 U	63.4	127	53-139	9	0-20
75-01-4	PSD Vinyl chloride	50.0	0.00 U	66.1	132	58-140	8	0-20
74-83-9	PSD Bromomethane	50.0	0.00 U	61.2	122	59-146	5	0-20
75-00-3	PSD Chloroethane	50.0	0.00 U	57.7	115	65-129	4	0-20
75-69-4	PSD Trichlorofluoromethane	50.0	0.00 U	61.3	123	65-141	2	0-20
60-29-7	PSD Ethyl ether	50.0	0.00 U	55.8	112	69-127	7	0-20
75-35-4	PSD 1,1-Dichloroethylene	50.0	0.00 U	44.1	88	59-130	7	0-20
75-09-2	PSD Methylene chloride	50.0	0.00 U	44.6	89	62-123	6	0-20
1634-04-4	PSD tert-Butyl methyl ether	50.0	0.00 U	49.7	99	69-132	4	0-20
156-60-5	PSD trans-1,2-Dichloroethylene	50.0	0.00 U	46.1	92	65-127	7	0-20
75-34-3	PSD 1,1-Dichloroethane	50.0	0.00 U	46.0	92	67-127	5	0-20
156-59-2	PSD cis-1,2-Dichloroethylene	50.0	0.00 U	46.9	94	69-127	6	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 6 of 8

SDG Number: 2017-1423

Sample Type: Post Spike Duplicate

Client ID: WSTMO-17-132947PSD

Matrix: W

Lab Sample ID 1203779616

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
594-20-7	PSD 2,2-Dichloropropane	50.0	0.00 U	49.8	100	66-137	8	0-20
74-97-5	PSD Bromochloromethane	50.0	0.00 U	46.1	92	71-130	6	0-20
67-66-3	PSD Chloroform	50.0	0.00 U	46.7	93	71-129	7	0-20
71-55-6	PSD 1,1,1-Trichloroethane	50.0	0.00 U	48.9	98	69-139	9	0-20
563-58-6	PSD 1,1-Dichloropropene	50.0	0.00 U	47.5	95	67-130	8	0-20
56-23-5	PSD Carbon tetrachloride	50.0	0.00 U	51.4	103	66-143	10	0-20
107-06-2	PSD 1,2-Dichloroethane	50.0	0.00 U	46.7	93	69-130	7	0-20
71-43-2	PSD Benzene	50.0	0.00 U	46.0	92	66-125	5	0-20
79-01-6	PSD Trichloroethylene	50.0	0.00 U	48.4	97	65-131	8	0-20
78-87-5	PSD 1,2-Dichloropropane	50.0	0.00 U	46.3	93	67-127	5	0-20
74-95-3	PSD Dibromomethane	50.0	0.00 U	47.9	96	72-129	6	0-20
75-27-4	PSD Bromodichloromethane	50.0	0.00 U	50.1	100	70-138	8	0-20
10061-01-5	PSD cis-1,3-Dichloropropylene	50.0	0.00 U	49.2	98	70-134	5	0-20
108-88-3	PSD Toluene	50.0	0.00 U	46.2	92	60-126	8	0-20
10061-02-6	PSD trans-1,3-Dichloropropylene	50.0	0.00 U	49.4	99	69-135	9	0-20
79-00-5	PSD 1,1,2-Trichloroethane	50.0	0.00 U	45.3	91	66-125	7	0-20
142-28-9	PSD 1,3-Dichloropropane	50.0	0.00 U	44.8	90	67-124	8	0-20
127-18-4	PSD Tetrachloroethylene	50.0	0.00 U	46.5	93	60-130	10	0-20
124-48-1	PSD Dibromochloromethane	50.0	0.00 U	52.4	105	68-143	10	0-20
106-93-4	PSD 1,2-Dibromoethane	50.0	0.00 U	48.6	97	71-127	7	0-20
108-90-7	PSD Chlorobenzene	50.0	0.00 U	46.1	92	64-124	9	0-20
100-41-4	PSD Ethylbenzene	50.0	0.00 U	47.3	95	61-130	9	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 7 of 8

SDG Number: 2017-1423

Sample Type: Post Spike Duplicate

Client ID: WSTMO-17-132947PSD

Matrix: W

Lab Sample ID 1203779616

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
95-47-6	PSD o-Xylene	50.0	0.00 U	49.8	100	62-131	8	0-20
100-42-5	PSD Styrene	50.0	0.00 U	50.0	100	59-135	9	0-20
75-25-2	PSD Bromoform	50.0	0.00 U	54.6	109	64-138	7	0-20
98-82-8	PSD Isopropylbenzene	50.0	0.00 U	50.2	100	55-133	8	0-20
79-34-5	PSD 1,1,2,2-Tetrachloroethane	50.0	0.00 U	47.7	95	62-129	6	0-20
96-18-4	PSD 1,2,3-Trichloropropane	50.0	0.00 U	49.7	99	70-124	7	0-20
108-86-1	PSD Bromobenzene	50.0	0.00 U	45.4	91	62-124	8	0-20
103-65-1	PSD n-Propylbenzene	50.0	0.00 U	45.9	92	50-133	8	0-20
108-67-8	PSD 1,3,5-Trimethylbenzene	50.0	0.00 U	49.1	98	53-135	9	0-20
95-49-8	PSD 2-Chlorotoluene	50.0	0.00 U	47.2	94	56-128	8	0-20
106-43-4	PSD 4-Chlorotoluene	50.0	0.00 U	44.8	90	53-130	9	0-20
98-06-6	PSD tert-Butylbenzene	50.0	0.00 U	51.3	103	55-135	9	0-20
95-63-6	PSD 1,2,4-Trimethylbenzene	50.0	0.00 U	48.0	96	53-132	9	0-20
135-98-8	PSD sec-Butylbenzene	50.0	0.00 U	49.9	100	50-138	8	0-20
99-87-6	PSD 4-Isopropyltoluene	50.0	0.00 U	49.9	100	49-138	8	0-20
541-73-1	PSD 1,3-Dichlorobenzene	50.0	0.00 U	44.4	89	56-126	9	0-20
106-46-7	PSD 1,4-Dichlorobenzene	50.0	0.00 U	44.1	88	55-125	9	0-20
104-51-8	PSD n-Butylbenzene	50.0	0.00 U	48.5	97	43-142	8	0-20
96-12-8	PSD 1,2-Dibromo-3-chloropropane	50.0	0.00 U	61.8	124	62-141	4	0-20
87-68-3	PSD Hexachlorobutadiene	50.0	0.00 U	51.2	102	40-147	8	0-20
91-20-3	PSD Naphthalene	50.0	0.00 U	53.2	106	62-134	4	0-20
87-61-6	PSD 1,2,3-Trichlorobenzene	50.0	0.00 U	45.8	92	52-135	6	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 8 of 8

SDG Number: 2017-1423

Sample Type: Post Spike Duplicate

Client ID: WSTMO-17-132947PSD

Matrix: W

Lab Sample ID 1203779616

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:29

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
120-82-1	PSD 1,2,4-Trichlorobenzene	50.0	0.00 U	48.4	97	50-133	5	0-20
630-20-6	PSD 1,1,1,2-Tetrachloroethane	50.0	0.00 U	48.9	98	71-133	9	0-20
95-50-1	PSD 1,2-Dichlorobenzene	50.0	0.00 U	45.6	91	60-125	8	0-20
71-36-3	PSD n-Butyl alcohol	5000	0.00 U	6660	133	60-140	3	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 2

SDG Number: 2017-1423

Sample Type: Post Spike

Client ID: WSTMO-17-132947PS

Matrix: W

Lab Sample ID 1203779615

Instrument: VOA9.I

Analysis Date: 05/03/2017 18:56

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	PS Acrolein	250	0.00 U	294	118	49-141
76-13-1	PS Trichlorotrifluoroethane	250	0.00 U	271	108	57-149
107-05-1	PS Allyl chloride	250	0.00 U	255	102	54-128
107-13-1	PS Acrylonitrile	250	0.00 U	287	115	59-129
107-12-0	PS Propionitrile	250	0.00 U	308	123	58-131
126-98-7	PS Methacrylonitrile	250	0.00 U	283	113	59-134
80-62-6	PS Methyl methacrylate	250	0.00 U	284	114	62-135
97-63-2	PS Ethyl methacrylate	250	0.00 U	267	107	60-136
78-83-1	PS Isobutyl alcohol	2500	0.00 U	3320	133	60-143
126-99-8	PS 2-Chloro-1,3-butadiene	50.0	0.00 U	53.3	107	63-146

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 2

SDG Number: 2017-1423

Sample Type: Post Spike Duplicate

Client ID: WSTMO-17-132947PSD

Matrix: W

Lab Sample ID 1203779617

Instrument: VOA9.I

Analysis Date: 05/03/2017 19:25

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	Acceptance RPD %	Acceptance Limits
107-02-8	PSD Acrolein	250	0.00 U	297	119	49-141	1	0-20
76-13-1	PSD Trichlorotrifluoroethane	250	0.00 U	284	114	57-149	5	0-20
107-05-1	PSD Allyl chloride	250	0.00 U	263	105	54-128	3	0-20
107-13-1	PSD Acrylonitrile	250	0.00 U	301	121	59-129	5	0-20
107-12-0	PSD Propionitrile	250	0.00 U	348	139 *	58-131	12	0-20
126-98-7	PSD Methacrylonitrile	250	0.00 U	306	122	59-134	8	0-20
80-62-6	PSD Methyl methacrylate	250	0.00 U	310	124	62-135	9	0-20
97-63-2	PSD Ethyl methacrylate	250	0.00 U	255	102	60-136	5	0-20
78-83-1	PSD Isobutyl alcohol	2500	0.00 U	3530	141	60-143	6	0-20
126-99-8	PSD 2-Chloro-1,3-butadiene	50.0	0.00 U	55.5	111	63-146	4	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203780773

Instrument: VOA9.I

Analysis Date: 05/03/2017 11:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
179601-23-1	LCS m,p-Xylenes	100	0.0	95.9	96	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1110	88	61-125
67-64-1	LCS Acetone	250	0.0	256	102	48-157
74-88-4	LCS Iodomethane	250	0.0	239	95	72-128
75-15-0	LCS Carbon disulfide	250	0.0	221	88	69-138
108-05-4	LCS Vinyl acetate	250	0.0	266	106	67-125
78-93-3	LCS 2-Butanone	250	0.0	263	105	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	236	95	66-124
591-78-6	LCS 2-Hexanone	250	0.0	258	103	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	58.3	117	40-160
74-87-3	LCS Chloromethane	50.0	0.0	54.5	109	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	56.6	113	65-137
74-83-9	LCS Bromomethane	50.0	0.0	55.5	111	63-137
75-00-3	LCS Chloroethane	50.0	0.0	52.4	105	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	53.8	108	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	52.8	106	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	41.5	83	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	45.3	91	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	49.7	99	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	44.0	88	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	43.6	87	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	44.7	89	75-123

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203780773

Instrument: VOA9.I

Analysis Date: 05/03/2017 11:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
594-20-7	LCS 2,2-Dichloropropane	50.0	0.0	47.9	96	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	46.9	94	76-125
67-66-3	LCS Chloroform	50.0	0.0	44.8	90	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	46.3	93	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	45.5	91	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	48.4	97	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	44.4	89	74-122
71-43-2	LCS Benzene	50.0	0.0	44.4	89	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	46.8	94	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	44.4	89	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	47.1	94	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	48.7	97	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	48.8	98	78-131
108-88-3	LCS Toluene	50.0	0.0	44.9	90	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	49.5	99	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	44.5	89	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	43.6	87	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	45.8	92	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	52.2	104	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	48.0	96	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	45.4	91	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	45.4	91	73-125

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203780773

Instrument: VOA9.I

Analysis Date: 05/03/2017 11:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
95-47-6	LCS o-Xylene	50.0	0.0	48.3	97	74-126
100-42-5	LCS Styrene	50.0	0.0	50.0	100	72-130
75-25-2	LCS Bromoform	50.0	0.0	53.5	107	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	47.6	95	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	44.2	88	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	45.8	92	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	45.0	90	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	43.0	86	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	46.8	94	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	46.1	92	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	43.3	87	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	49.7	99	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	46.0	92	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	47.1	94	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	47.2	94	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	44.1	88	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	43.9	88	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	45.8	92	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	56.2	112	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	50.3	101	72-136
91-20-3	LCS Naphthalene	50.0	0.0	50.8	102	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	45.7	91	70-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 4

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203780773

Instrument: VOA9.I

Analysis Date: 05/03/2017 11:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
120-82-1	LCS 1,2,4-Trichlorobenzene	50.0	0.0	49.2	98	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	48.4	97	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	44.9	90	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	5040	101	63-138

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1423

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1660978

Matrix: WATER

Lab Sample ID 1203780774

Instrument: VOA9.I

Analysis Date: 05/03/2017 11:59

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1660978

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits
107-02-8	LCS Acrolein	250	0.0	222	89	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	242	97	61-148
107-05-1	LCS Allyl chloride	250	0.0	229	91	59-125
107-13-1	LCS Acrylonitrile	250	0.0	228	91	65-122
107-12-0	LCS Propionitrile	250	0.0	238	95	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	232	93	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	240	96	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	235	94	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2270	91	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	47.6	95	66-147

Method Blank Summary

Page 1 of 1

SDG Number:	2017-1423	Client:	ARSL004	Matrix:	WATER
Client ID:	MB for batch 1660978	Instrument ID:	VOA9.I	Data File:	050217V9\9Q207B1.D
Lab Sample ID:	1203779611	Prep Date:	05/02/2017 11:54	Analyzed:	05/02/17 11:54
Column:	DB-624				

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 1660978	1203779612	050217V9\9Q204L1.D	05/02/17	1030
02 LCS for batch 1660978	1203779613	050217V9\9Q206L1.D	05/02/17	1126
03 CAPA-17-130745	421327002	050217V9\9Q219.D	05/02/17	1731
04 CAPA-17-130746	421327004	050217V9\9Q220.D	05/02/17	1759
05 CAPA-17-130721	421327001	050217V9\9Q221.D	05/02/17	1827
06 CAPA-17-130722	421327003	050217V9\9Q222.D	05/02/17	1855

Method Blank Summary

Page 1 of 1

SDG Number:	2017-1423	Client:	ARSL004	Matrix:	WATER
Client ID:	MB for batch 1660978	Instrument ID:	VOA9.I	Data File:	050317V9\9Q308B.D
Lab Sample ID:	1203780772	Prep Date:	05/03/2017 12:27	Analyzed:	05/03/17 12:27
Column:	DB-624				

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
08 LCS for batch 1660978	1203780773	050317V9\9Q305L.D	05/03/17	1103
09 LCS for batch 1660978	1203780774	050317V9\9Q307L.D	05/03/17	1159
10 WSTMO-17-132947PS	1203779614	050317V9\9Q320.D	05/03/17	1800
11 WSTMO-17-132947PSD	1203779616	050317V9\9Q321.D	05/03/17	1829
12 WSTMO-17-132947PS	1203779615	050317V9\9Q322.D	05/03/17	1856
13 WSTMO-17-132947PSD	1203779617	050317V9\9Q323.D	05/03/17	1925

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203779611

Client Sample: QC for batch 1660978

Client ID: MB for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 11:54

Prep Date: 05/02/2017 11:54

Data File: 050217V9\9Q207B1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	J	0.400	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 1203779611

Client Sample: QC for batch 1660978

Client ID: MB for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 11:54

Prep Date: 05/02/2017 11:54

Data File: 050217V9\9Q207B1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	J	0.340	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	J	0.390	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

Page 3 of 3

SDG Number: 2017-1423

Lab Sample ID: 1203779611

Client Sample: QC for batch 1660978

Client ID: MB for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 11:54

Prep Date: 05/02/2017 11:54

Data File: 050217V9\9Q207B1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.3	50.0	ug/L 85	(71%-134%)
Bromofluorobenzene	48.7	50.0	ug/L 97	(70%-131%)
Toluene-d8	49.0	50.0	ug/L 98	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
No Tentatively Identified Compounds Found				ug/L		

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203779612

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 10:30

Prep Date: 05/02/2017 10:30

Data File: 050217V9\9Q204L1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		47.0	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		41.4	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		44.0	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		43.6	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		42.3	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		39.0	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		43.9	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	B	47.0	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		43.1	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		50.6	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		45.6	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		56.9	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		47.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		45.8	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		38.5	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		42.9	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		46.6	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		44.3	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		41.9	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		44.2	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		43.8	ug/L	0.300	1.00
78-93-3	2-Butanone		243	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		47.0	ug/L	0.300	1.00
591-78-6	2-Hexanone		241	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		43.0	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		47.3	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		223	ug/L	1.50	5.00
67-64-1	Acetone		230	ug/L	1.50	10.0
75-05-8	Acetonitrile		1010	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		44.5	ug/L	0.300	1.00
108-86-1	Bromobenzene		46.1	ug/L	0.300	1.00
74-97-5	Bromochloromethane		48.2	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		44.4	ug/L	0.300	1.00
75-25-2	Bromoform		52.8	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423

Lab Sample ID: 1203779612

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 10:30

Prep Date: 05/02/2017 10:30

Data File: 050217V9\9Q204L1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		54.1	ug/L	0.300	1.00
75-15-0	Carbon disulfide		218	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		42.0	ug/L	0.300	1.00
108-90-7	Chlorobenzene	B	44.7	ug/L	0.300	1.00
75-00-3	Chloroethane		52.4	ug/L	0.300	1.00
67-66-3	Chloroform		41.7	ug/L	0.300	1.00
74-87-3	Chloromethane		53.0	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		50.2	ug/L	0.300	1.00
74-95-3	Dibromomethane		43.1	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		49.9	ug/L	0.300	1.00
60-29-7	Ethyl ether		52.6	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		43.7	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		49.6	ug/L	0.300	1.00
74-88-4	Iodomethane		241	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		48.8	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		44.8	ug/L	1.00	10.0
91-20-3	Naphthalene	B	52.0	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		49.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		46.3	ug/L	0.300	1.00
108-88-3	Toluene		45.1	ug/L	0.300	1.00
79-01-6	Trichloroethylene		45.0	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		47.1	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		253	ug/L	1.50	5.00
75-01-4	Vinyl chloride		55.5	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		42.3	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		46.3	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		94.7	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		4320	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		44.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		43.2	ug/L	0.300	1.00
95-47-6	o-Xylene		47.7	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		47.2	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Matrix:	WATER
Lab Sample ID:	1203779612		
Client Sample:	QC for batch 1660978	Client:	ARSL004
Client ID:	LCS for batch 1660978	Method:	SW-846:8260B
Batch ID:	1660978	Inst:	VOA9.I
Run Date:	05/02/2017 10:30	Analyst:	RXY1
Prep Date:	05/02/2017 10:30		
Data File:	050217V9\9Q204L1.D	Column:	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		46.3	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		51.8	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		42.3	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		46.6	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	41.5	50.0	83	(71%-134%)
Bromofluorobenzene	47.4	50.0	95	(70%-131%)
Toluene-d8	48.6	50.0	97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203779613

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 11:26

Prep Date: 05/02/2017 11:26

Data File: 050217V9\9Q206L1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		38.5	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		242	ug/L	1.50	5.00
107-13-1	Acrylonitrile		199	ug/L	1.50	5.00
107-05-1	Allyl chloride		187	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203779613

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/02/2017 11:26

Prep Date: 05/02/2017 11:26

Data File: 050217V9\9Q206L1.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		205	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		1920	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		197	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		211	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		200	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		186	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number:	2017-1423	Matrix:	WATER
Lab Sample ID:	1203779613		
Client Sample:	QC for batch 1660978	Client:	ARSL004
Client ID:	LCS for batch 1660978	Method:	SW-846:8260B
Batch ID:	1660978	Inst:	VOA9.I
Run Date:	05/02/2017 11:26	Analyst:	RXY1
Prep Date:	05/02/2017 11:26	Purge Vol:	5 mL
Data File:	050217V9\9Q206L1.D	Column:	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	42.3	50.0	85	(71%-134%)
Bromofluorobenzene	47.3	50.0	95	(70%-131%)
Toluene-d8	48.2	50.0	96	(74%-124%)

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779614	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:00	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:00				
Data File:	050317V9\9Q320.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		53.6	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		53.4	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		50.5	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		48.8	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		48.1	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		47.2	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		51.2	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		48.7	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		53.2	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		50.9	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		52.5	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		64.4	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		52.1	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		49.2	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		49.9	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		48.6	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		53.8	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		48.4	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		48.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		48.3	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		54.1	ug/L	0.300	1.00
78-93-3	2-Butanone		226	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		51.3	ug/L	0.300	1.00
591-78-6	2-Hexanone		259	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		48.8	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		53.8	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		263	ug/L	1.50	5.00
67-64-1	Acetone	B	176	ug/L	1.50	10.0
75-05-8	Acetonitrile		1290	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		48.4	ug/L	0.300	1.00
108-86-1	Bromobenzene		49.1	ug/L	0.300	1.00
74-97-5	Bromochloromethane		48.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		54.5	ug/L	0.300	1.00
75-25-2	Bromoform		58.4	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779614	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:00	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:00				
Data File:	050317V9\9Q320.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		58.1	ug/L	0.300	1.00
75-15-0	Carbon disulfide		246	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		57.0	ug/L	0.300	1.00
108-90-7	Chlorobenzene		50.4	ug/L	0.300	1.00
75-00-3	Chloroethane		55.6	ug/L	0.300	1.00
67-66-3	Chloroform		50.3	ug/L	0.300	1.00
74-87-3	Chloromethane		58.1	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		58.0	ug/L	0.300	1.00
74-95-3	Dibromomethane		51.1	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		64.6	ug/L	0.300	1.00
60-29-7	Ethyl ether		51.8	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		51.8	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		55.5	ug/L	0.300	1.00
74-88-4	Iodomethane		257	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		54.4	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		47.4	ug/L	1.00	10.0
91-20-3	Naphthalene		55.5	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		54.4	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		51.4	ug/L	0.300	1.00
108-88-3	Toluene		49.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		52.3	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		62.2	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		273	ug/L	1.50	5.00
75-01-4	Vinyl chloride		61.1	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		49.6	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		51.6	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		108	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		6870	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		52.6	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		49.7	ug/L	0.300	1.00
95-47-6	o-Xylene		53.9	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		53.9	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423	Date Collected: 04/27/2017 09:15	Matrix: W
Lab Sample ID: 1203779614	Date Received: 04/29/2017 09:45	
Client Sample: QC for batch 1660978	Client: ARSL004	Project: QC
Client ID: WSTMO-17-132947PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1660978	Inst: VOA9.I	Dilution: 1
Run Date: 05/03/2017 18:00	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 05/03/2017 18:00		
Data File: 050317V9\9Q320.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		51.6	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		56.1	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		49.3	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		54.2	ug/L	0.300	1.00
Surrogate/Tracer recovery		Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4		50.2	50.0	ug/L	100	(71%-134%)
Bromofluorobenzene		48.7	50.0	ug/L	97	(70%-131%)
Toluene-d8		49.2	50.0	ug/L	98	(74%-124%)

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779615	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:56	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:56				
Data File:	050317V9\9Q322.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		53.3	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		294	ug/L	1.50	5.00
107-13-1	Acrylonitrile		287	ug/L	1.50	5.00
107-05-1	Allyl chloride		255	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779615	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:56	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:56				
Data File:	050317V9\9Q322.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		267	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		3320	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		283	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		284	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		308	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		271	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779615	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:56	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:56				
Data File:	050317V9\9Q322.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.6	50.0	97	(71%-134%)
Bromofluorobenzene	49.9	50.0	100	(70%-131%)
Toluene-d8	48.6	50.0	97	(74%-124%)

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779616	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:29	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:29				
Data File:	050317V9\9Q321.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		48.9	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.9	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.7	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		45.3	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		46.0	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		44.1	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		47.5	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		45.8	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		48.4	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		48.0	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		61.8	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		48.6	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		45.6	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		46.7	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		46.3	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		49.1	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		44.4	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		44.8	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		44.1	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		49.8	ug/L	0.300	1.00
78-93-3	2-Butanone		223	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		47.2	ug/L	0.300	1.00
591-78-6	2-Hexanone		249	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		44.8	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.9	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		253	ug/L	1.50	5.00
67-64-1	Acetone	B	173	ug/L	1.50	10.0
75-05-8	Acetonitrile		1300	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		46.0	ug/L	0.300	1.00
108-86-1	Bromobenzene		45.4	ug/L	0.300	1.00
74-97-5	Bromochloromethane		46.1	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		50.1	ug/L	0.300	1.00
75-25-2	Bromoform		54.6	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779616	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 18:29	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 18:29				
Data File:	050317V9\9Q321.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		61.2	ug/L	0.300	1.00
75-15-0	Carbon disulfide		230	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		51.4	ug/L	0.300	1.00
108-90-7	Chlorobenzene		46.1	ug/L	0.300	1.00
75-00-3	Chloroethane		57.7	ug/L	0.300	1.00
67-66-3	Chloroform		46.7	ug/L	0.300	1.00
74-87-3	Chloromethane		63.4	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.4	ug/L	0.300	1.00
74-95-3	Dibromomethane		47.9	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		67.2	ug/L	0.300	1.00
60-29-7	Ethyl ether		55.8	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		47.3	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		51.2	ug/L	0.300	1.00
74-88-4	Iodomethane		238	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		50.2	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		44.6	ug/L	1.00	10.0
91-20-3	Naphthalene		53.2	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		50.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		46.5	ug/L	0.300	1.00
108-88-3	Toluene		46.2	ug/L	0.300	1.00
79-01-6	Trichloroethylene		48.4	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		61.3	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		289	ug/L	1.50	5.00
75-01-4	Vinyl chloride		66.1	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		46.9	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		49.2	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		99.8	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		6660	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		48.5	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		45.9	ug/L	0.300	1.00
95-47-6	o-Xylene		49.8	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.9	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423	Date Collected: 04/27/2017 09:15	Matrix: W
Lab Sample ID: 1203779616	Date Received: 04/29/2017 09:45	
Client Sample: QC for batch 1660978	Client: ARSL004	Project: QC
Client ID: WSTMO-17-132947PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1660978	Inst: VOA9.I	Dilution: 1
Run Date: 05/03/2017 18:29	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 05/03/2017 18:29		
Data File: 050317V9\9Q321.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		49.7	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		51.3	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		46.1	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		49.4	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	50.5	50.0	101	(71%-134%)
Bromofluorobenzene	48.1	50.0	96	(70%-131%)
Toluene-d8	48.3	50.0	97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423	Date Collected: 04/27/2017 09:15	Matrix: W
Lab Sample ID: 1203779617	Date Received: 04/29/2017 09:45	
Client Sample: QC for batch 1660978	Client: ARSL004	Project: QC
Client ID: WSTMO-17-132947PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1660978	Inst: VOA9.I	Dilution: 1
Run Date: 05/03/2017 19:25	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 05/03/2017 19:25		
Data File: 050317V9\9Q323.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		55.5	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		297	ug/L	1.50	5.00
107-13-1	Acrylonitrile		301	ug/L	1.50	5.00
107-05-1	Allyl chloride		263	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1423	Date Collected:	04/27/2017 09:15	Matrix:	W
Lab Sample ID:	1203779617	Date Received:	04/29/2017 09:45		
Client Sample:	QC for batch 1660978	Client:	ARSL004	Project:	QC
Client ID:	WSTMO-17-132947PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1660978	Inst:	VOA9.I	Dilution:	1
Run Date:	05/03/2017 19:25	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	05/03/2017 19:25				
Data File:	050317V9\9Q323.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		255	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		3530	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		306	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		310	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		348	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		284	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1423	Date Collected: 04/27/2017 09:15	Matrix: W
Lab Sample ID: 1203779617	Date Received: 04/29/2017 09:45	
Client Sample: QC for batch 1660978	Client: ARSL004	Project: QC
Client ID: WSTMO-17-132947PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1660978	Inst: VOA9.I	Dilution: 1
Run Date: 05/03/2017 19:25	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 05/03/2017 19:25		
Data File: 050317V9\9Q323.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	47.2	50.0	94	(71%-134%)
Bromofluorobenzene	45.8	50.0	92	(70%-131%)
Toluene-d8	45.6	50.0	91	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Matrix: WATER

Lab Sample ID: 1203780772

Client Sample: QC for batch 1660978

Client: ARSL004

Project: QC

Client ID: MB for batch 1660978

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/03/2017 12:27

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/03/2017 12:27

Data File: 050317V9\9Q308B.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	J	1.91	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Matrix: WATER

Lab Sample ID: 1203780772

Client Sample: QC for batch 1660978

Client: ARSL004

Project: QC

Client ID: MB for batch 1660978

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1660978

Inst: VOA9.I

Dilution: 1

Run Date: 05/03/2017 12:27

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 05/03/2017 12:27

Data File: 050317V9\9Q308B.D

Column: DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

Page 3 of 3

SDG Number: 2017-1423

Lab Sample ID: 1203780772

Client Sample: QC for batch 1660978

Client ID: MB for batch 1660978

Batch ID: 1660978

Run Date: 05/03/2017 12:27

Prep Date: 05/03/2017 12:27

Data File: 050317V9\9Q308B.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	49.0	50.0	ug/L 98	(71%-134%)
Bromofluorobenzene	49.5	50.0	ug/L 99	(70%-131%)
Toluene-d8	48.9	50.0	ug/L 98	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
No Tentatively Identified Compounds Found				ug/L		

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203780773

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/03/2017 11:03

Prep Date: 05/03/2017 11:03

Data File: 050317V9\9Q305L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		48.4	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		46.3	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		44.2	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		44.5	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		43.6	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		41.5	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		45.5	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		45.7	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		45.8	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		49.2	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		46.0	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		56.2	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		48.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		44.9	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		44.4	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		44.4	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		46.8	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		44.1	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		43.6	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		43.9	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		47.9	ug/L	0.300	1.00
78-93-3	2-Butanone		263	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene	U	1.00	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene		46.1	ug/L	0.300	1.00
591-78-6	2-Hexanone		258	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		43.3	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		47.2	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		236	ug/L	1.50	5.00
67-64-1	Acetone	B	256	ug/L	1.50	10.0
75-05-8	Acetonitrile		1110	ug/L	8.00	25.0
107-02-8	Acrolein	U	5.00	ug/L	1.50	5.00
107-13-1	Acrylonitrile	U	5.00	ug/L	1.50	5.00
107-05-1	Allyl chloride	U	5.00	ug/L	1.50	5.00
71-43-2	Benzene		44.4	ug/L	0.300	1.00
108-86-1	Bromobenzene		45.0	ug/L	0.300	1.00
74-97-5	Bromochloromethane		46.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		48.7	ug/L	0.300	1.00
75-25-2	Bromoform		53.5	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203780773

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/03/2017 11:03

Prep Date: 05/03/2017 11:03

Data File: 050317V9\9Q305LD

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		55.5	ug/L	0.300	1.00
75-15-0	Carbon disulfide		221	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		48.4	ug/L	0.300	1.00
108-90-7	Chlorobenzene		45.4	ug/L	0.300	1.00
75-00-3	Chloroethane		52.4	ug/L	0.300	1.00
67-66-3	Chloroform		44.8	ug/L	0.300	1.00
74-87-3	Chloromethane		54.5	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		52.2	ug/L	0.300	1.00
74-95-3	Dibromomethane		47.1	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		58.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		52.8	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		45.4	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		50.3	ug/L	0.300	1.00
74-88-4	Iodomethane		239	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		47.6	ug/L	0.300	1.00
126-98-7	Methacrylonitrile	U	5.00	ug/L	1.50	5.00
80-62-6	Methyl methacrylate	U	5.00	ug/L	1.50	5.00
75-09-2	Methylene chloride		45.3	ug/L	1.00	10.0
91-20-3	Naphthalene		50.8	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		50.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		45.8	ug/L	0.300	1.00
108-88-3	Toluene		44.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		46.8	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		53.8	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		266	ug/L	1.50	5.00
75-01-4	Vinyl chloride		56.6	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		44.7	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		48.8	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		95.9	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5040	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		45.8	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		43.0	ug/L	0.300	1.00
95-47-6	o-Xylene		48.3	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		47.1	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number:	2017-1423	Matrix:	WATER
Lab Sample ID:	1203780773		
Client Sample:	QC for batch 1660978	Client:	ARSL004
Client ID:	LCS for batch 1660978	Method:	SW-846:8260B
Batch ID:	1660978	Inst:	VOA9.I
Run Date:	05/03/2017 11:03	Analyst:	RXY1
Prep Date:	05/03/2017 11:03		
Data File:	050317V9\9Q305L.D	Column:	DB-624
		Project:	QC
		SOP Ref:	GL-OA-E-038
		Dilution:	1
		Purge Vol:	5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		49.7	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		49.7	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		44.0	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		49.5	ug/L	0.300	1.00
Surrogate/Tracer recovery		Result	Nominal		Recovery%	Acceptable Limits
1,2-Dichloroethane-d4		48.4	50.0	ug/L	97	(71%-134%)
Bromofluorobenzene		48.0	50.0	ug/L	96	(70%-131%)
Toluene-d8		48.9	50.0	ug/L	98	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203780774

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/03/2017 11:59

Prep Date: 05/03/2017 11:59

Data File: 050317V9\9Q307L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene	U	1.00	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane	U	1.00	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene	U	1.00	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane	U	1.00	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane	U	1.00	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene	U	1.00	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane	U	1.00	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene	U	1.00	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	U	5.00	ug/L	1.50	5.00
126-99-8	2-Chloro-1,3-butadiene		47.6	ug/L	0.300	1.00
95-49-8	2-Chlorotoluene	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene	U	1.00	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
67-64-1	Acetone	U	10.0	ug/L	1.50	10.0
75-05-8	Acetonitrile	U	25.0	ug/L	8.00	25.0
107-02-8	Acrolein		222	ug/L	1.50	5.00
107-13-1	Acrylonitrile		228	ug/L	1.50	5.00
107-05-1	Allyl chloride		229	ug/L	1.50	5.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
108-86-1	Bromobenzene	U	1.00	ug/L	0.300	1.00
74-97-5	Bromochloromethane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1423

Lab Sample ID: 1203780774

Client Sample: QC for batch 1660978

Client ID: LCS for batch 1660978

Batch ID: 1660978

Run Date: 05/03/2017 11:59

Prep Date: 05/03/2017 11:59

Data File: 050317V9\9Q307L.D

Client: ARSL004

Method: SW-846:8260B

Inst: VOA9.I

Analyst: RXY1

Column: DB-624

Matrix: WATER

Project: QC

SOP Ref: GL-OA-E-038

Dilution: 1

Purge Vol: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
74-95-3	Dibromomethane	U	1.00	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane	U	1.00	ug/L	0.300	1.00
60-29-7	Ethyl ether	U	1.00	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate		235	ug/L	1.50	5.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene	U	1.00	ug/L	0.300	1.00
74-88-4	Iodomethane	U	5.00	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol		2270	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		232	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		240	ug/L	1.50	5.00
75-09-2	Methylene chloride	U	10.0	ug/L	1.00	10.0
91-20-3	Naphthalene	U	1.00	ug/L	0.300	1.00
107-12-0	Propionitrile		238	ug/L	1.50	5.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane	U	1.00	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane		242	ug/L	2.00	5.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes	U	2.00	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol	U	50.0	ug/L	15.0	50.0
104-51-8	n-Butylbenzene	U	1.00	ug/L	0.300	1.00
103-65-1	n-Propylbenzene	U	1.00	ug/L	0.300	1.00
95-47-6	o-Xylene	U	1.00	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene	U	1.00	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number:	2017-1423	Matrix:	WATER
Lab Sample ID:	1203780774		
Client Sample:	QC for batch 1660978	Client:	ARSL004
Client ID:	LCS for batch 1660978	Method:	SW-846:8260B
Batch ID:	1660978	Inst:	VOA9.I
Run Date:	05/03/2017 11:59	Analyst:	RXY1
Prep Date:	05/03/2017 11:59	Purge Vol:	5 mL
Data File:	050317V9\9Q307L.D	Column:	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.1	50.0	96	(71%-134%)
Bromofluorobenzene	49.6	50.0	99	(70%-131%)
Toluene-d8	49.0	50.0	98	(74%-124%)

Miscellaneous

DATA EXCEPTION REPORT			
Mo.Day Yr. 04-MAY-17	Division: Federal	Quality Criteria: Specifications	Type: Process
Instrument Type: VOA GC/MS	Test / Method: SW846 8260B DOE-AL	Matrix Type: Liquid	Client Code: ESHL
Batch ID: 1660978	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 421327(2017-1423),422002(2017-1464) Application Issues: Failed Recovery for MS/MSD, or PS/PSD			
Specification and Requirements		DER Disposition:	
Exception Description:			
1. Failed Recovery for MS/MSD, or PS/PSD: QC 1203779617PSD		1. The spike and/or spike duplicate (See Below) recoveries were not all within the acceptance limits. 1203779617 (WSTMO-17-132947PSD) Propionitrile [139* (58%-131%)].	

Originator's Name:
Ramona Yarbrough 04-MAY-17

Data Validator/Group Leader:
Erin Haubert 04-MAY-17