

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: CAMO-17-130585

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	4/12/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1441	OK	MEDIA:	UA	OK
PRS ID:		NA	SAMPLE TECH CODE:	GSP	OK
LOCATION ID:	R-37 S2	OK	FIELD PREP:	UF	OK
LOCATION TYPE:		OK	FIELD QC TYPE:	REG	OK
TOP DEPTH:		OK	SAMPLE USAGE:	INV	OK
BOTTOM DEPTH:		OK	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
NA	WSP-LL-H-3	1 LITER POLY	1	NONE	Y	NA

SAMPLE COMMENTS:

Sampled 50ft from running generator

LOCATION COMMENTS:

windy during sampling

FIELD PARAMETERS:

Dissolved Oxygen	6.35	mg/L	Flow (in gpm)	10.7	GPM	Oxidation-Reduction Potential	202.4	mV
pH	7.99	SU	Specific Conductance	136.8	uS/cm	Temperature	21.5	deg C
Turbidity	.74	NTU						

COLLECTED BY (PRINT): D. Jaramillo

RELINQUISHED BY (Printed Name) <u>Daniel Jaramillo</u> (Signature) <u>[Signature]</u>	Date/Time 4/12/17 1515	RECEIVED BY (Printed Name) <u>K. Greene</u> (Signature) <u>[Signature]</u>	Date/Time 4/12/17 3:15
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: CAMO-17-130592

WORK ORDER:

	AS PLANNED	AS COLLECTED		AS PLANNED	AS COLLECTED
Date Collected (MM/DD/YYYY):	4/12/2017	OK	FIELD MATRIX:	WG	OK
TIME COLLECTED (HH:MM):	1441	OK	MEDIA:	UA	OK
PRS ID:		NA	SAMPLE TECH CODE:	GSP	OK
LOCATION ID:	R-37 S2	OK	FIELD PREP:	UF	OK
LOCATION TYPE:		NA	FIELD QC TYPE:	FTB	OK
TOP DEPTH:		NA	SAMPLE USAGE:	QC	OK
BOTTOM DEPTH:		NA	EXCAVATED:		YES / NO / <u>NA</u>

PRIORITY	ORDER	CONTAINER	#	PRESERVATIVE	COLLECTED Y/N	SPECIAL INSTRUCTIONS
NR	WSP-8260B- VOA	40 ML SEPTUM AMBER GLASS	1 2 SUP 4/14	HCL	Y	NA

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Dissolved Oxygen 5.0 mg/L Flow (in gpm) 4/12/2017 GPM 1515 Oxidation-Reduction Potential 3115 mV
 pH SU Conductance us/cm Temperature deg C
 Turbidity NTU

COLLECTED BY (PRINT): D. Jaramillo

RELINQUISHED BY (Printed Name) <u>Daniel Jaramillo</u> (Signature) <u>[Signature]</u>	Date/Time <u>4/12/17</u> <u>1515</u>	RECEIVED BY (Printed Name) <u>K. Green</u> (Signature) <u>[Signature]</u>	Date/Time <u>4/12/17</u> <u>3115</u>
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. 2017-1365

1. Distribution Of Samples In EDD.

SDG	Analytical Method	Regular Samples	Field Duplicates	Trip Blanks	Field Blanks	Equipment Blanks
420673	EPA:170.0	1		1		
420673	SW-846:8260B	1		1		

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
420673	EPA:170.0	NA	NA	1		1															
420673	SW-846:8260B	1658891	1658891	1		1			3					6							

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	CAMO-17-130585	420673001	REG	1	0	0	0
EPA:170.0	VOC	CAMO-17-130592	420673002	FTB	1	0	0	0
SW-846:8260B	VOC	CAMO-17-130585	420673001	REG	80	3	0	0
SW-846:8260B	VOC	CAMO-17-130592	420673002	FTB	80	3	0	0
SW-846:8260B	VOC	LCS	1203774854	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203774855	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1203774856	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203774857	LCS	0	3	10	0
SW-846:8260B	VOC	LCS	1203776467	LCS	0	3	70	0
SW-846:8260B	VOC	LCS	1203776468	LCS	0	3	10	0
SW-846:8260B	VOC	MB	1203774852	MB	80	3	0	0
SW-846:8260B	VOC	MB	1203774853	MB	80	3	0	0
SW-846:8260B	VOC	MB	1203776466	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				
CAMO-17-130592	420673002	TRIP BLANK	EPA:170.0	W	Temperature	3		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.

10. Any Lab Duplicate RPDs outside the desired limits?

DATA VALIDATION REPORT

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

None.

Reason Code

Description

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
CAMO-17-130585	R-37 S2	REG	EPA:170.0	0	1
CAMO-17-130585	R-37 S2	REG	SW-846:8260B	0	80
CAMO-17-130592	R-37 S2	FTB	EPA:170.0	0	1
CAMO-17-130592	R-37 S2	FTB	SW-846:8260B	0	80

May 08, 2017

gel.com

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

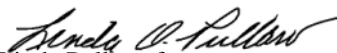
Re: LANL- WQH Water Samples
Work Order: 420673
SDG: 2017-1365

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on April 14, 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

Chain of Custody: 2017-1365
Enclosures



ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Work Order #: 420673
SDG: 2017-1365

Table of Contents

Case Narrative.....	1
Chain of Custody and Supporting Documentation.....	4
Data Review Qualifier Flag Definition Sheet.....	8
Volatile Analysis.....	11
Case Narrative.....	12
Sample Data Summary.....	17
Quality Control Summary.....	24
Quality Control Data.....	48

Case Narrative

**Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Workorder #: 420673
SDG # : 2017-1365**

May 08, 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 14, 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>
420673001	CAMO-17-130585
420673002	CAMO-17-130592

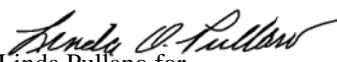
Case Narrative

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 08 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:			SDG/AR/COC/Work Order: <u>420673</u>		
Received By: <u>ZKW</u>			Date Received: <u>4/14/17</u>		
Carrier and Tracking Number			Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <u>5908 1781 9547</u> <u>5908 1781 9552</u>		
Suspected Hazard Information		Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
Shipped as a DOT Hazardous?			<input checked="" type="checkbox"/>	Hazard Class Shipped: _____ UN#: _____	
COC/Samples marked or classified as radioactive?			<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> <input checked="" type="checkbox"/> CPM mR/Hr Classified as: Rad 1 Rad 2 Rad 3	
Is package, COC, and/or Samples marked HAZ?			<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	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Wet Ice <input checked="" type="checkbox"/> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>3°C</u>
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: <u>IR3-16</u> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	<input checked="" 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 <input checked="" type="checkbox"/> No _____ 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: <u>The only vial for -130563 was rec'd w/ headspace</u>
8	Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?		<input checked="" type="checkbox"/>		
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
Comments (Use Continuation Form if needed):					

PM (or PMA) review: Initials MeADate 4/14/17Page 1of 1

GL-CHL-SR-001 Rev 5

ORIGIN ID: SAFA (505) 665-9866
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171

REF: 21PD0AWE991158W100



FedEx
Express

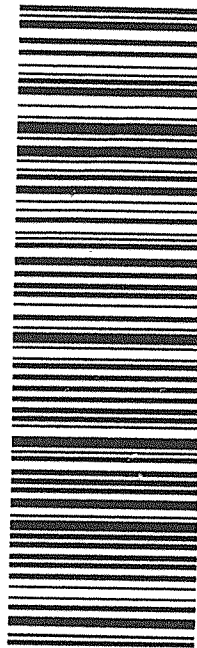


FRI - 14 APR 10:30A
PRIORITY OVERNIGHT

1 of 2
TRK# 5908 1781 9547
MASTER

X7 CHSA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15

RT 0

9547
04.14

FZ 0

ORIGIN ID: SAFA (505) 665-9866
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171

REF: 21PD0AWE991158W100



FedEx
Express



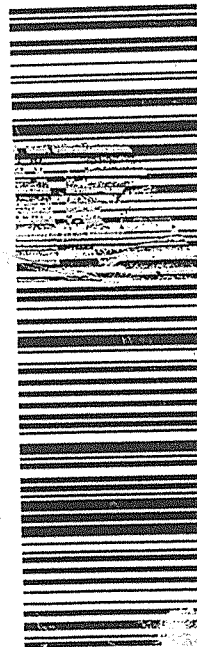
FRI - 14 APR 10:30A
PRIORITY OVERNIGHT

2 of 2
MPS# 5908 1781 9558
Mstr# 5908 1781 9547

0201

X7 CHSA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15

538C2/CFD6/329B

171513150813014V

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 #: 2017-1365
Work Order #: 420673**

Method/Analysis Information

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

Analytical Method: SW-846:8260B

Analytical Batch Number: 1658891

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
420673001	CAMO-17-130585
420673002	CAMO-17-130592
1203774852	Method Blank (MB)
1203774853	Method Blank (MB)
1203774854	Laboratory Control Sample (LCS)
1203774855	Laboratory Control Sample (LCS)
1203774856	Laboratory Control Sample (LCS)
1203774857	Laboratory Control Sample (LCS)
1203774858	420846005(CAPA-17-130757) Post Spike (PS)
1203774859	420846005(CAPA-17-130757) Post Spike (PS)
1203774860	420846005(CAPA-17-130757) Post Spike Duplicate (PSD)
1203774861	420846005(CAPA-17-130757) Post Spike Duplicate (PSD)

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 blank 1203774853 (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 420846005 (CAPA-17-130757) was designated for spike analysis.

Matrix Spike/Matrix Spike Duplicate Recovery Statement

The matrix spike (MS) and matrix spike duplicate (MSD) recoveries were within the required acceptance limits.

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 reports (DERs) was not generated to document procedural anomalies that may deviate from referenced SOP or contractual documents.

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 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: 2017-1365 GEL Work Order: 420673

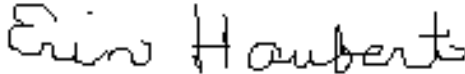
The Qualifiers in this report are defined as follows:

- * 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: 11 MAY 2017

Title: Data Validator

Sample Data Summary

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/12/2017 14:41	Matrix: W
Lab Sample ID: 420673001	Date Received: 04/14/2017 08:55	
Client Sample: VOA ONLY	Client: ARSL004	Project: ESHL00114
Client ID: CAMO-17-130585	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/25/2017 16:37	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/25/2017 16:37		
Data File: 042517V9\9P217.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:	2017-1365	Date Collected:	04/12/2017 14:41	Matrix:	W
Lab Sample ID:	420673001	Date Received:	04/14/2017 08:55		
Client Sample:	VOA ONLY	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAMO-17-130585	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/25/2017 16:37	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/25/2017 16:37				
Data File:	042517V9\9P217.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: 2017-1365	Date Collected: 04/12/2017 14:41	Matrix: W
Lab Sample ID: 420673001	Date Received: 04/14/2017 08:55	
Client Sample: VOA ONLY	Client: ARSL004	Project: ESHL00114
Client ID: CAMO-17-130585	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/25/2017 16:37	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/25/2017 16:37		
Data File: 042517V9\9P217.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	54.2	50.0	ug/L 108	(71%-134%)
Bromofluorobenzene	50.8	50.0	ug/L 102	(70%-131%)
Toluene-d8	49.4	50.0	ug/L 99	(74%-124%)

Tentatively Identified Compound Summary

CAS No.	Tentatively Identified Compound (TIC)	RT	Estimated	Units	Fit	Qual
	unknown siloxane	12.292	30.1	ug/L	0	J
	unknown siloxane	14.652	39.6	ug/L	0	J

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/12/2017 14:41	Matrix: W
Lab Sample ID: 420673002	Date Received: 04/14/2017 08:55	
Client Sample: VOA ONLY	Client: ARSL004	Project: ESHL00114
Client ID: CAMO-17-130592	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/25/2017 17:05	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/25/2017 17:05		
Data File: 042517V9\9P218.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:	2017-1365	Date Collected:	04/12/2017 14:41	Matrix:	W
Lab Sample ID:	420673002	Date Received:	04/14/2017 08:55		
Client Sample:	VOA ONLY	Client:	ARSL004	Project:	ESHL00114
Client ID:	CAMO-17-130592	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/25/2017 17:05	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/25/2017 17:05				
Data File:	042517V9\9P218.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: 2017-1365	Date Collected: 04/12/2017 14:41	Matrix: W
Lab Sample ID: 420673002	Date Received: 04/14/2017 08:55	
Client Sample: VOA ONLY	Client: ARSL004	Project: ESHL00114
Client ID: CAMO-17-130592	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/25/2017 17:05	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/25/2017 17:05		
Data File: 042517V9\9P218.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	54.3	50.0	ug/L 109	(71%-134%)
Bromofluorobenzene	51.0	50.0	ug/L 102	(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	13.8	ug/L	0	J
	unknown siloxane	14.663	21	ug/L	0	J

Quality Control Summary

Volatile
Surrogate Recovery Report

Page 1 of 1

SDG Number: 2017-1365

Matrix Type: LIQUID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203774854	LCS for batch 1658891	97	98	99
1203774855	LCS for batch 1658891	94	99	98
1203774852	MB for batch 1658891	97	99	99
420673001	CAMO-17-130585	108	99	102
420673002	CAMO-17-130592	109	98	102
1203774856	LCS for batch 1658891	93	97	98
1203774857	LCS for batch 1658891	95	99	95
1203774853	MB for batch 1658891	95	98	96
1203774858	CAPA-17-130757PS	104	97	96
1203774860	CAPA-17-130757PSD	98	97	96
1203774859	CAPA-17-130757PS	98	97	98
1203774861	CAPA-17-130757PSD	98	96	96

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: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774854

Instrument: VOA9.I

Analysis Date: 04/25/2017 10:07

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	101	101	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1090	87	61-125
67-64-1	LCS Acetone	250	0.0	321	128	48-157
74-88-4	LCS Iodomethane	250	0.0	252	101	72-128
75-15-0	LCS Carbon disulfide	250	0.0	240	96	69-138
108-05-4	LCS Vinyl acetate	250	0.0	254	102	67-125
78-93-3	LCS 2-Butanone	250	0.0	313	125	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	242	97	66-124
591-78-6	LCS 2-Hexanone	250	0.0	312	125	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	54.3	109	40-160
74-87-3	LCS Chloromethane	50.0	0.0	50.7	101	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	53.0	106	65-137
74-83-9	LCS Bromomethane	50.0	0.0	51.6	103	63-137
75-00-3	LCS Chloroethane	50.0	0.0	50.5	101	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	50.8	102	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	51.6	103	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	45.6	91	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	48.8	98	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	53.4	107	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	47.9	96	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	47.7	95	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	48.8	98	75-123

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774854

Instrument: VOA9.I

Analysis Date: 04/25/2017 10:07

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	51.4	103	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	49.7	99	76-125
67-66-3	LCS Chloroform	50.0	0.0	47.2	94	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	49.0	98	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	48.3	97	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	50.8	102	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	46.8	94	74-122
71-43-2	LCS Benzene	50.0	0.0	47.4	95	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	49.2	98	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	47.2	94	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	49.1	98	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	51.5	103	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	52.2	104	78-131
108-88-3	LCS Toluene	50.0	0.0	46.8	94	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	51.8	104	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	46.2	92	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	45.3	91	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	46.4	93	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	54.4	109	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	49.1	98	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	46.5	93	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	47.1	94	73-125

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774854

Instrument: VOA9.I

Analysis Date: 04/25/2017 10:07

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	50.5	101	74-126
100-42-5	LCS Styrene	50.0	0.0	52.0	104	72-130
75-25-2	LCS Bromoform	50.0	0.0	55.9	112	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	50.9	102	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	46.4	93	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	46.7	93	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	47.7	95	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	46.3	93	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	49.3	99	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	48.8	98	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	46.7	93	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	52.0	104	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	48.9	98	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	49.5	99	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	49.6	99	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	46.3	93	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	46.1	92	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	48.2	96	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	56.1	112	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	51.0	102	72-136
91-20-3	LCS Naphthalene	50.0	0.0	51.3	103	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	47.1	94	70-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774854

Instrument: VOA9.I

Analysis Date: 04/25/2017 10:07

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	51.1	102	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	49.9	100	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	47.4	95	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	4750	95	63-138

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774855

Instrument: VOA9.I

Analysis Date: 04/25/2017 11:30

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	250	100	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	236	94	61-148
107-05-1	LCS Allyl chloride	250	0.0	232	93	59-125
107-13-1	LCS Acrylonitrile	250	0.0	227	91	65-122
107-12-0	LCS Propionitrile	250	0.0	234	93	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	234	94	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	243	97	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	238	95	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2190	88	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	47.9	96	66-147

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774856

Instrument: VOA9.I

Analysis Date: 04/26/2017 10:33

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	102	102	71-127
75-05-8	LCS Acetonitrile	1250	0.0	1090	87	61-125
67-64-1	LCS Acetone	250	0.0	274	109	48-157
74-88-4	LCS Iodomethane	250	0.0	260	104	72-128
75-15-0	LCS Carbon disulfide	250	0.0	239	96	69-138
108-05-4	LCS Vinyl acetate	250	0.0	249	100	67-125
78-93-3	LCS 2-Butanone	250	0.0	278	111	55-138
108-10-1	LCS 4-Methyl-2-pentanone	250	0.0	236	94	66-124
591-78-6	LCS 2-Hexanone	250	0.0	270	108	56-140
75-71-8	LCS Dichlorodifluoromethane	50.0	0.0	45.2	90	40-160
74-87-3	LCS Chloromethane	50.0	0.0	46.8	94	58-135
75-01-4	LCS Vinyl chloride	50.0	0.0	49.4	99	65-137
74-83-9	LCS Bromomethane	50.0	0.0	49.8	100	63-137
75-00-3	LCS Chloroethane	50.0	0.0	47.5	95	69-129
75-69-4	LCS Trichlorofluoromethane	50.0	0.0	46.1	92	69-138
60-29-7	LCS Ethyl ether	50.0	0.0	49.9	100	72-125
75-35-4	LCS 1,1-Dichloroethylene	50.0	0.0	44.6	89	66-126
75-09-2	LCS Methylene chloride	50.0	0.0	48.8	98	68-119
1634-04-4	LCS tert-Butyl methyl ether	50.0	0.0	53.2	106	76-128
156-60-5	LCS trans-1,2-Dichloroethylene	50.0	0.0	47.2	94	71-124
75-34-3	LCS 1,1-Dichloroethane	50.0	0.0	47.1	94	73-123
156-59-2	LCS cis-1,2-Dichloroethylene	50.0	0.0	48.0	96	75-123

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774856

Instrument: VOA9.I

Analysis Date: 04/26/2017 10:33

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	50.1	100	72-138
74-97-5	LCS Bromochloromethane	50.0	0.0	51.3	103	76-125
67-66-3	LCS Chloroform	50.0	0.0	47.1	94	76-123
71-55-6	LCS 1,1,1-Trichloroethane	50.0	0.0	48.3	97	74-136
563-58-6	LCS 1,1-Dichloropropene	50.0	0.0	48.4	97	72-129
56-23-5	LCS Carbon tetrachloride	50.0	0.0	49.6	99	72-140
107-06-2	LCS 1,2-Dichloroethane	50.0	0.0	46.3	93	74-122
71-43-2	LCS Benzene	50.0	0.0	48.4	97	72-121
79-01-6	LCS Trichloroethylene	50.0	0.0	49.9	100	74-125
78-87-5	LCS 1,2-Dichloropropane	50.0	0.0	48.0	96	73-121
74-95-3	LCS Dibromomethane	50.0	0.0	49.6	99	78-123
75-27-4	LCS Bromodichloromethane	50.0	0.0	52.2	104	77-131
10061-01-5	LCS cis-1,3-Dichloropropylene	50.0	0.0	53.4	107	78-131
108-88-3	LCS Toluene	50.0	0.0	47.6	95	71-121
10061-02-6	LCS trans-1,3-Dichloropropylene	50.0	0.0	52.7	105	78-131
79-00-5	LCS 1,1,2-Trichloroethane	50.0	0.0	46.9	94	74-118
142-28-9	LCS 1,3-Dichloropropane	50.0	0.0	46.3	93	74-118
127-18-4	LCS Tetrachloroethylene	50.0	0.0	47.8	96	69-129
124-48-1	LCS Dibromochloromethane	50.0	0.0	56.5	113	76-137
106-93-4	LCS 1,2-Dibromoethane	50.0	0.0	51.2	102	78-122
108-90-7	LCS Chlorobenzene	50.0	0.0	48.1	96	74-120
100-41-4	LCS Ethylbenzene	50.0	0.0	47.6	95	73-125

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774856

Instrument: VOA9.I

Analysis Date: 04/26/2017 10:33

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	51.6	103	74-126
100-42-5	LCS Styrene	50.0	0.0	53.0	106	72-130
75-25-2	LCS Bromoform	50.0	0.0	58.8	118	72-136
98-82-8	LCS Isopropylbenzene	50.0	0.0	51.6	103	70-130
79-34-5	LCS 1,1,2,2-Tetrachloroethane	50.0	0.0	47.3	95	70-126
96-18-4	LCS 1,2,3-Trichloropropane	50.0	0.0	48.0	96	74-122
108-86-1	LCS Bromobenzene	50.0	0.0	49.4	99	74-120
103-65-1	LCS n-Propylbenzene	50.0	0.0	46.2	92	67-128
108-67-8	LCS 1,3,5-Trimethylbenzene	50.0	0.0	50.3	101	70-129
95-49-8	LCS 2-Chlorotoluene	50.0	0.0	50.1	100	71-124
106-43-4	LCS 4-Chlorotoluene	50.0	0.0	46.8	94	69-125
98-06-6	LCS tert-Butylbenzene	50.0	0.0	53.8	108	72-130
95-63-6	LCS 1,2,4-Trimethylbenzene	50.0	0.0	49.5	99	70-126
135-98-8	LCS sec-Butylbenzene	50.0	0.0	50.1	100	70-131
99-87-6	LCS 4-Isopropyltoluene	50.0	0.0	50.6	101	71-131
541-73-1	LCS 1,3-Dichlorobenzene	50.0	0.0	47.7	95	72-121
106-46-7	LCS 1,4-Dichlorobenzene	50.0	0.0	47.1	94	71-120
104-51-8	LCS n-Butylbenzene	50.0	0.0	48.0	96	68-134
96-12-8	LCS 1,2-Dibromo-3-chloropropane	50.0	0.0	59.4	119	68-141
87-68-3	LCS Hexachlorobutadiene	50.0	0.0	52.9	106	72-136
91-20-3	LCS Naphthalene	50.0	0.0	52.9	106	72-132
87-61-6	LCS 1,2,3-Trichlorobenzene	50.0	0.0	48.3	97	70-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 4

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774856

Instrument: VOA9.I

Analysis Date: 04/26/2017 10:33

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	52.8	106	71-129
630-20-6	LCS 1,1,1,2-Tetrachloroethane	50.0	0.0	50.8	102	79-127
95-50-1	LCS 1,2-Dichlorobenzene	50.0	0.0	48.6	97	74-120
71-36-3	LCS n-Butyl alcohol	5000	0.0	4880	98	63-138

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 1

SDG Number: 2017-1365

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 1658891

Matrix: WATER

Lab Sample ID 1203774857

Instrument: VOA9.I

Analysis Date: 04/26/2017 11:58

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	280	112	60-140
76-13-1	LCS Trichlorotrifluoroethane	250	0.0	222	89	61-148
107-05-1	LCS Allyl chloride	250	0.0	210	84	59-125
107-13-1	LCS Acrylonitrile	250	0.0	225	90	65-122
107-12-0	LCS Propionitrile	250	0.0	234	94	64-124
126-98-7	LCS Methacrylonitrile	250	0.0	230	92	64-126
80-62-6	LCS Methyl methacrylate	250	0.0	237	95	69-127
97-63-2	LCS Ethyl methacrylate	250	0.0	229	92	66-130
78-83-1	LCS Isobutyl alcohol	2500	0.0	2350	94	65-135
126-99-8	LCS 2-Chloro-1,3-butadiene	50.0	0.0	44.5	89	66-147

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 8

SDG Number: 2017-1365

Sample Type: Post Spike

Client ID: CAPA-17-130757PS

Matrix: W

Lab Sample ID 1203774858

Instrument: VOA9.I

Analysis Date: 04/26/2017 19:35

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	97.0	97	59-132
75-05-8	PS Acetonitrile	1250	0.00 U	1170	93	56-131
67-64-1	PS Acetone	250	0.00 U	164	65	25-155
74-88-4	PS Iodomethane	250	0.00 U	254	102	66-133
75-15-0	PS Carbon disulfide	250	0.00 U	235	94	61-141
108-05-4	PS Vinyl acetate	250	0.00 U	266	107	48-133
78-93-3	PS 2-Butanone	250	0.00 U	207	83	25-143
108-10-1	PS 4-Methyl-2-pentanone	250	0.00 U	239	96	61-127
591-78-6	PS 2-Hexanone	250	0.00 U	236	94	33-138
75-71-8	PS Dichlorodifluoromethane	50.0	0.00 U	58.7	117	33-164
74-87-3	PS Chloromethane	50.0	0.00 U	51.9	104	53-139
75-01-4	PS Vinyl chloride	50.0	0.00 U	54.6	109	58-140
74-83-9	PS Bromomethane	50.0	0.00 U	54.6	109	59-146
75-00-3	PS Chloroethane	50.0	0.00 U	50.9	102	65-129
75-69-4	PS Trichlorofluoromethane	50.0	0.00 U	58.6	117	65-141
60-29-7	PS Ethyl ether	50.0	0.00 U	52.9	106	69-127
75-35-4	PS 1,1-Dichloroethylene	50.0	0.00 U	44.7	89	59-130
75-09-2	PS Methylene chloride	50.0	0.00 U	46.3	93	62-123
1634-04-4	PS tert-Butyl methyl ether	50.0	0.00 U	53.7	107	69-132
156-60-5	PS trans-1,2-Dichloroethylene	50.0	0.00 U	46.2	92	65-127
75-34-3	PS 1,1-Dichloroethane	50.0	0.00 U	45.3	91	67-127
156-59-2	PS cis-1,2-Dichloroethylene	50.0	0.00 U	47.4	95	69-127

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 8

SDG Number: 2017-1365

Sample Type: Post Spike

Client ID: CAPA-17-130757PS

Matrix: W

Lab Sample ID 1203774858

Instrument: VOA9.I

Analysis Date: 04/26/2017 19:35

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	50.0	100	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	47.7	95	71-129
71-55-6	PS 1,1,1-Trichloroethane	50.0	0.00 U	50.1	100	69-139
563-58-6	PS 1,1-Dichloropropene	50.0	0.00 U	47.2	94	67-130
56-23-5	PS Carbon tetrachloride	50.0	0.00 U	53.4	107	66-143
107-06-2	PS 1,2-Dichloroethane	50.0	0.00 U	50.3	101	69-130
71-43-2	PS Benzene	50.0	0.00 U	45.5	91	66-125
79-01-6	PS Trichloroethylene	50.0	0.00 U	48.4	97	65-131
78-87-5	PS 1,2-Dichloropropane	50.0	0.00 U	45.9	92	67-127
74-95-3	PS Dibromomethane	50.0	0.00 U	51.3	103	72-129
75-27-4	PS Bromodichloromethane	50.0	0.00 U	52.8	106	70-138
10061-01-5	PS cis-1,3-Dichloropropylene	50.0	0.00 U	50.0	100	70-134
108-88-3	PS Toluene	50.0	0.00 U	44.7	89	60-126
10061-02-6	PS trans-1,3-Dichloropropylene	50.0	0.00 U	51.0	102	69-135
79-00-5	PS 1,1,2-Trichloroethane	50.0	0.00 U	46.2	92	66-125
142-28-9	PS 1,3-Dichloropropane	50.0	0.00 U	45.7	91	67-124
127-18-4	PS Tetrachloroethylene	50.0	0.00 U	46.0	92	60-130
124-48-1	PS Dibromochloromethane	50.0	0.00 U	55.8	112	68-143
106-93-4	PS 1,2-Dibromoethane	50.0	0.00 U	50.0	100	71-127
108-90-7	PS Chlorobenzene	50.0	0.00 U	45.3	91	64-124
100-41-4	PS Ethylbenzene	50.0	0.00 U	46.2	92	61-130

Volatile
Quality Control Summary
Spike Recovery Report

Page 3 of 8

SDG Number: 2017-1365

Sample Type: Post Spike

Client ID: CAPA-17-130757PS

Matrix: W

Lab Sample ID 1203774858

Instrument: VOA9.I

Analysis Date: 04/26/2017 19:35

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	49.1	98	62-131
100-42-5	PS Styrene	50.0	0.00 U	51.0	102	59-135
75-25-2	PS Bromoform	50.0	0.00 U	57.2	114	64-138
98-82-8	PS Isopropylbenzene	50.0	0.00 U	48.0	96	55-133
79-34-5	PS 1,1,2,2-Tetrachloroethane	50.0	0.00 U	47.0	94	62-129
96-18-4	PS 1,2,3-Trichloropropane	50.0	0.00 U	49.3	99	70-124
108-86-1	PS Bromobenzene	50.0	0.00 U	45.7	91	62-124
103-65-1	PS n-Propylbenzene	50.0	0.00 U	43.4	87	50-133
108-67-8	PS 1,3,5-Trimethylbenzene	50.0	0.00 U	47.7	95	53-135
95-49-8	PS 2-Chlorotoluene	50.0	0.00 U	46.1	92	56-128
106-43-4	PS 4-Chlorotoluene	50.0	0.00 U	44.0	88	53-130
98-06-6	PS tert-Butylbenzene	50.0	0.00 U	49.9	100	55-135
95-63-6	PS 1,2,4-Trimethylbenzene	50.0	0.00 U	47.0	94	53-132
135-98-8	PS sec-Butylbenzene	50.0	0.00 U	48.2	96	50-138
99-87-6	PS 4-Isopropyltoluene	50.0	0.00 U	48.0	96	49-138
541-73-1	PS 1,3-Dichlorobenzene	50.0	0.00 U	44.3	89	56-126
106-46-7	PS 1,4-Dichlorobenzene	50.0	0.00 U	44.1	88	55-125
104-51-8	PS n-Butylbenzene	50.0	0.00 U	46.1	92	43-142
96-12-8	PS 1,2-Dibromo-3-chloropropane	50.0	0.00 U	62.1	124	62-141
87-68-3	PS Hexachlorobutadiene	50.0	0.00 U	51.5	103	40-147
91-20-3	PS Naphthalene	50.0	0.00 U	52.7	105	62-134
87-61-6	PS 1,2,3-Trichlorobenzene	50.0	0.00 U	46.3	93	52-135

Volatile
Quality Control Summary
Spike Recovery Report

Page 4 of 8

SDG Number: 2017-1365

Sample Type: Post Spike

Client ID: CAPA-17-130757PS

Matrix: W

Lab Sample ID 1203774858

Instrument: VOA9.I

Analysis Date: 04/26/2017 19:35

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	47.7	95	50-133
630-20-6	PS 1,1,1,2-Tetrachloroethane	50.0	0.00 U	50.5	101	71-133
95-50-1	PS 1,2-Dichlorobenzene	50.0	0.00 U	46.0	92	60-125
71-36-3	PS n-Butyl alcohol	5000	0.00 U	5790	116	60-140

Volatile
Quality Control Summary
Spike Recovery Report

Page 5 of 8

SDG Number: 2017-1365

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-130757PSD

Matrix: W

Lab Sample ID 1203774860

Instrument: VOA9.I

Analysis Date: 04/26/2017 20:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	102	102	59-132	5	0-20
75-05-8	PSD Acetonitrile	1250	0.00 U	1160	93	56-131	1	0-20
67-64-1	PSD Acetone	250	0.00 U	156	62	25-155	5	0-20
74-88-4	PSD Iodomethane	250	0.00 U	261	105	66-133	3	0-20
75-15-0	PSD Carbon disulfide	250	0.00 U	239	96	61-141	2	0-20
108-05-4	PSD Vinyl acetate	250	0.00 U	260	104	48-133	3	0-20
78-93-3	PSD 2-Butanone	250	0.00 U	206	82	25-143	0	0-20
108-10-1	PSD 4-Methyl-2-pentanone	250	0.00 U	242	97	61-127	1	0-20
591-78-6	PSD 2-Hexanone	250	0.00 U	229	92	33-138	3	0-20
75-71-8	PSD Dichlorodifluoromethane	50.0	0.00 U	56.4	113	33-164	4	0-20
74-87-3	PSD Chloromethane	50.0	0.00 U	51.9	104	53-139	0	0-20
75-01-4	PSD Vinyl chloride	50.0	0.00 U	55.1	110	58-140	1	0-20
74-83-9	PSD Bromomethane	50.0	0.00 U	53.1	106	59-146	3	0-20
75-00-3	PSD Chloroethane	50.0	0.00 U	50.8	102	65-129	0	0-20
75-69-4	PSD Trichlorofluoromethane	50.0	0.00 U	55.0	110	65-141	6	0-20
60-29-7	PSD Ethyl ether	50.0	0.00 U	53.2	106	69-127	1	0-20
75-35-4	PSD 1,1-Dichloroethylene	50.0	0.00 U	45.6	91	59-130	2	0-20
75-09-2	PSD Methylene chloride	50.0	0.00 U	49.0	98	62-123	6	0-20
1634-04-4	PSD tert-Butyl methyl ether	50.0	0.00 U	55.8	112	69-132	4	0-20
156-60-5	PSD trans-1,2-Dichloroethylene	50.0	0.00 U	48.0	96	65-127	4	0-20
75-34-3	PSD 1,1-Dichloroethane	50.0	0.00 U	47.7	95	67-127	5	0-20
156-59-2	PSD cis-1,2-Dichloroethylene	50.0	0.00 U	49.6	99	69-127	5	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 6 of 8

SDG Number: 2017-1365

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-130757PSD

Matrix: W

Lab Sample ID 1203774860

Instrument: VOA9.I

Analysis Date: 04/26/2017 20:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	50.7	101	66-137	1	0-20
74-97-5	PSD Bromochloromethane	50.0	0.00 U	51.9	104	71-130	6	0-20
67-66-3	PSD Chloroform	50.0	0.00 U	49.5	99	71-129	4	0-20
71-55-6	PSD 1,1,1-Trichloroethane	50.0	0.00 U	50.9	102	69-139	2	0-20
563-58-6	PSD 1,1-Dichloropropene	50.0	0.00 U	49.0	98	67-130	4	0-20
56-23-5	PSD Carbon tetrachloride	50.0	0.00 U	54.0	108	66-143	1	0-20
107-06-2	PSD 1,2-Dichloroethane	50.0	0.00 U	51.2	102	69-130	2	0-20
71-43-2	PSD Benzene	50.0	0.00 U	48.0	96	66-125	5	0-20
79-01-6	PSD Trichloroethylene	50.0	0.00 U	50.1	100	65-131	4	0-20
78-87-5	PSD 1,2-Dichloropropane	50.0	0.00 U	48.1	96	67-127	5	0-20
74-95-3	PSD Dibromomethane	50.0	0.00 U	52.4	105	72-129	2	0-20
75-27-4	PSD Bromodichloromethane	50.0	0.00 U	55.2	110	70-138	5	0-20
10061-01-5	PSD cis-1,3-Dichloropropylene	50.0	0.00 U	52.8	106	70-134	5	0-20
108-88-3	PSD Toluene	50.0	0.00 U	46.9	94	60-126	5	0-20
10061-02-6	PSD trans-1,3-Dichloropropylene	50.0	0.00 U	53.7	107	69-135	5	0-20
79-00-5	PSD 1,1,2-Trichloroethane	50.0	0.00 U	48.4	97	66-125	5	0-20
142-28-9	PSD 1,3-Dichloropropane	50.0	0.00 U	48.0	96	67-124	5	0-20
127-18-4	PSD Tetrachloroethylene	50.0	0.00 U	47.6	95	60-130	4	0-20
124-48-1	PSD Dibromochloromethane	50.0	0.00 U	58.3	117	68-143	4	0-20
106-93-4	PSD 1,2-Dibromoethane	50.0	0.00 U	52.3	105	71-127	4	0-20
108-90-7	PSD Chlorobenzene	50.0	0.00 U	47.9	96	64-124	5	0-20
100-41-4	PSD Ethylbenzene	50.0	0.00 U	48.0	96	61-130	4	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 7 of 8

SDG Number: 2017-1365

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-130757PSD

Matrix: W

Lab Sample ID 1203774860

Instrument: VOA9.I

Analysis Date: 04/26/2017 20:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	51.6	103	62-131	5	0-20
100-42-5	PSD Styrene	50.0	0.00 U	53.0	106	59-135	4	0-20
75-25-2	PSD Bromoform	50.0	0.00 U	59.5	119	64-138	4	0-20
98-82-8	PSD Isopropylbenzene	50.0	0.00 U	50.7	101	55-133	5	0-20
79-34-5	PSD 1,1,2,2-Tetrachloroethane	50.0	0.00 U	48.0	96	62-129	2	0-20
96-18-4	PSD 1,2,3-Trichloropropane	50.0	0.00 U	49.3	99	70-124	0	0-20
108-86-1	PSD Bromobenzene	50.0	0.00 U	48.4	97	62-124	6	0-20
103-65-1	PSD n-Propylbenzene	50.0	0.00 U	45.6	91	50-133	5	0-20
108-67-8	PSD 1,3,5-Trimethylbenzene	50.0	0.00 U	49.9	100	53-135	5	0-20
95-49-8	PSD 2-Chlorotoluene	50.0	0.00 U	48.9	98	56-128	6	0-20
106-43-4	PSD 4-Chlorotoluene	50.0	0.00 U	46.5	93	53-130	6	0-20
98-06-6	PSD tert-Butylbenzene	50.0	0.00 U	52.7	105	55-135	5	0-20
95-63-6	PSD 1,2,4-Trimethylbenzene	50.0	0.00 U	49.2	98	53-132	5	0-20
135-98-8	PSD sec-Butylbenzene	50.0	0.00 U	49.8	100	50-138	3	0-20
99-87-6	PSD 4-Isopropyltoluene	50.0	0.00 U	50.1	100	49-138	4	0-20
541-73-1	PSD 1,3-Dichlorobenzene	50.0	0.00 U	46.5	93	56-126	5	0-20
106-46-7	PSD 1,4-Dichlorobenzene	50.0	0.00 U	46.8	94	55-125	6	0-20
104-51-8	PSD n-Butylbenzene	50.0	0.00 U	48.4	97	43-142	5	0-20
96-12-8	PSD 1,2-Dibromo-3-chloropropane	50.0	0.00 U	61.4	123	62-141	1	0-20
87-68-3	PSD Hexachlorobutadiene	50.0	0.00 U	53.2	106	40-147	3	0-20
91-20-3	PSD Naphthalene	50.0	0.00 U	55.2	110	62-134	5	0-20
87-61-6	PSD 1,2,3-Trichlorobenzene	50.0	0.00 U	49.0	98	52-135	6	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 8 of 8

SDG Number: 2017-1365

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-130757PSD

Matrix: W

Lab Sample ID 1203774860

Instrument: VOA9.I

Analysis Date: 04/26/2017 20:03

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	51.4	103	50-133	7	0-20
630-20-6	PSD 1,1,1,2-Tetrachloroethane	50.0	0.00 U	53.2	106	71-133	5	0-20
95-50-1	PSD 1,2-Dichlorobenzene	50.0	0.00 U	48.5	97	60-125	5	0-20
71-36-3	PSD n-Butyl alcohol	5000	0.00 U	5470	109	60-140	6	0-20

Volatile
Quality Control Summary
Spike Recovery Report

Page 1 of 2

SDG Number: 2017-1365

Sample Type: Post Spike

Client ID: CAPA-17-130757PS

Matrix: W

Lab Sample ID 1203774859

Instrument: VOA9.I

Analysis Date: 04/26/2017 20:32

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

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	249	100	49-141
76-13-1	PS Trichlorotrifluoroethane	250	0.00 U	237	95	57-149
107-05-1	PS Allyl chloride	250	0.00 U	226	90	54-128
107-13-1	PS Acrylonitrile	250	0.00 U	231	92	59-129
107-12-0	PS Propionitrile	250	0.00 U	238	95	58-131
126-98-7	PS Methacrylonitrile	250	0.00 U	244	98	59-134
80-62-6	PS Methyl methacrylate	250	0.00 U	249	100	62-135
97-63-2	PS Ethyl methacrylate	250	0.00 U	235	94	60-136
78-83-1	PS Isobutyl alcohol	2500	0.00 U	2430	97	60-143
126-99-8	PS 2-Chloro-1,3-butadiene	50.0	0.00 U	47.4	95	63-146

Volatile
Quality Control Summary
Spike Recovery Report

Page 2 of 2

SDG Number: 2017-1365

Sample Type: Post Spike Duplicate

Client ID: CAPA-17-130757PSD

Matrix: W

Lab Sample ID 1203774861

Instrument: VOA9.I

Analysis Date: 04/26/2017 21:01

Dilution: 1

Analyst: RXY1

Purge Vol: 5 mL

Batch ID: 1658891

CAS No	Parmname	Amount Added ug/L	Sample Conc. ug/L	Spike Conc. ug/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
107-02-8	PSD Acrolein	250	0.00 U	288	115	49-141	14	0-20
76-13-1	PSD Trichlorotrifluoroethane	250	0.00 U	255	102	57-149	7	0-20
107-05-1	PSD Allyl chloride	250	0.00 U	238	95	54-128	5	0-20
107-13-1	PSD Acrylonitrile	250	0.00 U	256	102	59-129	10	0-20
107-12-0	PSD Propionitrile	250	0.00 U	266	107	58-131	11	0-20
126-98-7	PSD Methacrylonitrile	250	0.00 U	262	105	59-134	7	0-20
80-62-6	PSD Methyl methacrylate	250	0.00 U	264	106	62-135	6	0-20
97-63-2	PSD Ethyl methacrylate	250	0.00 U	249	100	60-136	6	0-20
78-83-1	PSD Isobutyl alcohol	2500	0.00 U	2700	108	60-143	11	0-20
126-99-8	PSD 2-Chloro-1,3-butadiene	50.0	0.00 U	49.6	99	63-146	5	0-20

Method Blank Summary

Page 1 of 1

SDG Number: 2017-1365

Client: ARSL004

Matrix: WATER

Client ID: MB for batch 1658891

Instrument ID: VOA9.I

Data File: 042517V9\9P208B1.D

Lab Sample ID: 1203774852

Prep Date: 04/25/2017 12:25

Analyzed: 04/25/17 12:25

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 1658891	1203774854	042517V9\9P203L1.D	04/25/17	1007
02 LCS for batch 1658891	1203774855	042517V9\9P206L1.D	04/25/17	1130
03 CAMO-17-130585	420673001	042517V9\9P217.D	04/25/17	1637
04 CAMO-17-130592	420673002	042517V9\9P218.D	04/25/17	1705

Method Blank Summary

Page 1 of 1

SDG Number:	2017-1365	Client:	ARSL004	Matrix:	WATER
Client ID:	MB for batch 1658891	Instrument ID:	VOA9.I	Data File:	042617V9\9P308B.D
Lab Sample ID:	1203774853	Prep Date:	04/26/2017 12:26	Analyzed:	04/26/17 12:26
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
06 LCS for batch 1658891	1203774856	042617V9\9P304L.D	04/26/17	1033
07 LCS for batch 1658891	1203774857	042617V9\9P307L.D	04/26/17	1158
08 CAPA-17-130757PS	1203774858	042617V9\9P323.D	04/26/17	1935
09 CAPA-17-130757PSD	1203774860	042617V9\9P324.D	04/26/17	2003
10 CAPA-17-130757PS	1203774859	042617V9\9P325.D	04/26/17	2032
11 CAPA-17-130757PSD	1203774861	042617V9\9P326.D	04/26/17	2101

Quality Control Data

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365		Matrix:	WATER
Lab Sample ID: 1203774852			
Client Sample: QC for batch 1658891	Client: ARSL004	Project:	QC
Client ID: MB for batch 1658891	Method: SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution:	1
Run Date: 04/25/2017 12:25	Analyst: RXY1	Purge Vol:	5 mL
Prep Date: 04/25/2017 12:25			
Data File: 042517V9\9P208B1.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: 2017-1365

Matrix: WATER

Lab Sample ID: 1203774852

Client Sample: QC for batch 1658891

Client: ARSL004

Project: QC

Client ID: MB for batch 1658891

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1658891

Inst: VOA9.I

Dilution: 1

Run Date: 04/25/2017 12:25

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 04/25/2017 12:25

Data File: 042517V9\9P208B1.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: 2017-1365	Matrix: WATER	
Lab Sample ID: 1203774852		
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: MB for batch 1658891	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/25/2017 12:25	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/25/2017 12:25		
Data File: 042517V9\9P208B1.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	48.4	50.0	97	(71%-134%)
Bromofluorobenzene	49.7	50.0	99	(70%-131%)
Toluene-d8	49.4	50.0	99	(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:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774853		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	MB for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/26/2017 12:26	Analyst:	RXY1
Prep Date:	04/26/2017 12:26	Purge Vol:	5 mL
Data File:	042617V9\9P308B.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	2.15	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: 2017-1365

Lab Sample ID: 1203774853

Client Sample: QC for batch 1658891

Client ID: MB for batch 1658891

Batch ID: 1658891

Run Date: 04/26/2017 12:26

Prep Date: 04/26/2017 12:26

Data File: 042617V9\9P308B.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	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: 2017-1365	Matrix: WATER
Lab Sample ID: 1203774853	
Client Sample: QC for batch 1658891	Client: ARSL004
Client ID: MB for batch 1658891	Method: SW-846:8260B
Batch ID: 1658891	Project: QC
Run Date: 04/26/2017 12:26	SOP Ref: GL-OA-E-038
Prep Date: 04/26/2017 12:26	Dilution: 1
Data File: 042617V9\9P308B.D	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	47.8	50.0	ug/L 96	(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
No Tentatively Identified Compounds Found				ug/L		

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365		Matrix:	WATER
Lab Sample ID: 1203774854			
Client Sample: QC for batch 1658891	Client: ARSL004	Project:	QC
Client ID: LCS for batch 1658891	Method: SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution:	1
Run Date: 04/25/2017 10:07	Analyst: RXY1	Purge Vol:	5 mL
Prep Date: 04/25/2017 10:07			
Data File: 042517V9\9P203L1.D	Column: DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		49.9	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		49.0	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		46.4	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.2	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		47.7	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		45.6	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		48.3	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		47.1	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		46.7	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		51.1	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		48.9	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		56.1	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		49.1	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		47.4	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		46.8	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		47.2	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		49.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		46.3	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		45.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.1	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		51.4	ug/L	0.300	1.00
78-93-3	2-Butanone		313	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		48.8	ug/L	0.300	1.00
591-78-6	2-Hexanone		312	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		46.7	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		49.6	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		242	ug/L	1.50	5.00
67-64-1	Acetone		321	ug/L	1.50	10.0
75-05-8	Acetonitrile		1090	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		47.4	ug/L	0.300	1.00
108-86-1	Bromobenzene		47.7	ug/L	0.300	1.00
74-97-5	Bromochloromethane		49.7	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		51.5	ug/L	0.300	1.00
75-25-2	Bromoform		55.9	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365

Lab Sample ID: 1203774854

Client Sample: QC for batch 1658891

Client ID: LCS for batch 1658891

Batch ID: 1658891

Run Date: 04/25/2017 10:07

Prep Date: 04/25/2017 10:07

Data File: 042517V9\9P203L1.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		51.6	ug/L	0.300	1.00
75-15-0	Carbon disulfide		240	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		50.8	ug/L	0.300	1.00
108-90-7	Chlorobenzene		46.5	ug/L	0.300	1.00
75-00-3	Chloroethane		50.5	ug/L	0.300	1.00
67-66-3	Chloroform		47.2	ug/L	0.300	1.00
74-87-3	Chloromethane		50.7	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		54.4	ug/L	0.300	1.00
74-95-3	Dibromomethane		49.1	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		54.3	ug/L	0.300	1.00
60-29-7	Ethyl ether		51.6	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		47.1	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		51.0	ug/L	0.300	1.00
74-88-4	Iodomethane		252	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		50.9	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		48.8	ug/L	1.00	10.0
91-20-3	Naphthalene		51.3	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		52.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		46.4	ug/L	0.300	1.00
108-88-3	Toluene		46.8	ug/L	0.300	1.00
79-01-6	Trichloroethylene		49.2	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		50.8	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		254	ug/L	1.50	5.00
75-01-4	Vinyl chloride		53.0	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		48.8	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		52.2	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		101	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		4750	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		48.2	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		46.3	ug/L	0.300	1.00
95-47-6	o-Xylene		50.5	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.5	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774854		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	LCS for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/25/2017 10:07	Analyst:	RXY1
Prep Date:	04/25/2017 10:07		
Data File:	042517V9\9P203L1.D	Column:	DB-624

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		53.4	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		52.0	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		47.9	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		51.8	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.7	50.0	97	(71%-134%)
Bromofluorobenzene	49.4	50.0	99	(70%-131%)
Toluene-d8	48.8	50.0	98	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365		Matrix:	WATER
Lab Sample ID: 1203774855			
Client Sample: QC for batch 1658891	Client: ARSL004	Project:	QC
Client ID: LCS for batch 1658891	Method: SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution:	1
Run Date: 04/25/2017 11:30	Analyst: RXY1	Purge Vol:	5 mL
Prep Date: 04/25/2017 11:30			
Data File: 042517V9\9P206L1.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		47.9	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		250	ug/L	1.50	5.00
107-13-1	Acrylonitrile		227	ug/L	1.50	5.00
107-05-1	Allyl chloride		232	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:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774855		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	LCS for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/25/2017 11:30	Analyst:	RXY1
Prep Date:	04/25/2017 11:30	Purge Vol:	5 mL
Data File:	042517V9\9P206L1.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		238	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		2190	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		234	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		243	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		234	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		236	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:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774855		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	LCS for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/25/2017 11:30	Analyst:	RXY1
Prep Date:	04/25/2017 11:30	Purge Vol:	5 mL
Data File:	042517V9\9P206L1.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	47.1	50.0	94	(71%-134%)
Bromofluorobenzene	48.9	50.0	98	(70%-131%)
Toluene-d8	49.5	50.0	99	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365		Matrix:	WATER
Lab Sample ID: 1203774856			
Client Sample: QC for batch 1658891	Client: ARSL004	Project:	QC
Client ID: LCS for batch 1658891	Method: SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution:	1
Run Date: 04/26/2017 10:33	Analyst: RXY1	Purge Vol:	5 mL
Prep Date: 04/26/2017 10:33			
Data File: 042617V9\9P304L.D	Column: DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		50.8	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		48.3	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.3	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.9	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		47.1	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		44.6	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		48.4	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		48.3	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		48.0	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		52.8	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.5	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		59.4	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		51.2	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		48.6	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		46.3	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		48.0	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		50.3	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		47.7	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		46.3	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		47.1	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		50.1	ug/L	0.300	1.00
78-93-3	2-Butanone		278	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		50.1	ug/L	0.300	1.00
591-78-6	2-Hexanone		270	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		46.8	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		50.6	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	274	ug/L	1.50	10.0
75-05-8	Acetonitrile		1090	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		49.4	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.3	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		52.2	ug/L	0.300	1.00
75-25-2	Bromoform		58.8	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 2017-1365

Lab Sample ID: 1203774856

Client Sample: QC for batch 1658891

Client ID: LCS for batch 1658891

Batch ID: 1658891

Run Date: 04/26/2017 10:33

Prep Date: 04/26/2017 10:33

Data File: 042617V9\9P304L.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		49.8	ug/L	0.300	1.00
75-15-0	Carbon disulfide		239	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		49.6	ug/L	0.300	1.00
108-90-7	Chlorobenzene		48.1	ug/L	0.300	1.00
75-00-3	Chloroethane		47.5	ug/L	0.300	1.00
67-66-3	Chloroform		47.1	ug/L	0.300	1.00
74-87-3	Chloromethane		46.8	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		56.5	ug/L	0.300	1.00
74-95-3	Dibromomethane		49.6	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		45.2	ug/L	0.300	1.00
60-29-7	Ethyl ether		49.9	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		47.6	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		52.9	ug/L	0.300	1.00
74-88-4	Iodomethane		260	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		51.6	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		48.8	ug/L	1.00	10.0
91-20-3	Naphthalene		52.9	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		53.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		47.8	ug/L	0.300	1.00
108-88-3	Toluene		47.6	ug/L	0.300	1.00
79-01-6	Trichloroethylene		49.9	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		46.1	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		249	ug/L	1.50	5.00
75-01-4	Vinyl chloride		49.4	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		48.0	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		53.4	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		102	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		4880	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		48.0	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		46.2	ug/L	0.300	1.00
95-47-6	o-Xylene		51.6	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		50.1	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number: 2017-1365		Matrix: WATER
Lab Sample ID: 1203774856		
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: LCS for batch 1658891	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 10:33	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 10:33		
Data File: 042617V9\9P304L.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		53.2	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		53.8	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		47.2	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		52.7	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	46.3	50.0	93	(71%-134%)
Bromofluorobenzene	49.1	50.0	98	(70%-131%)
Toluene-d8	48.5	50.0	97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365

Matrix: WATER

Lab Sample ID: 1203774857

Client Sample: QC for batch 1658891

Client: ARSL004

Project: QC

Client ID: LCS for batch 1658891

Method: SW-846:8260B

SOP Ref: GL-OA-E-038

Batch ID: 1658891

Inst: VOA9.I

Dilution: 1

Run Date: 04/26/2017 11:58

Analyst: RXY1

Purge Vol: 5 mL

Prep Date: 04/26/2017 11:58

Data File: 042617V9\9P307L.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		44.5	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		280	ug/L	1.50	5.00
107-13-1	Acrylonitrile		225	ug/L	1.50	5.00
107-05-1	Allyl chloride		210	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:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774857		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	LCS for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/26/2017 11:58	Analyst:	RXY1
Prep Date:	04/26/2017 11:58	Purge Vol:	5 mL
Data File:	042617V9\9P307L.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		229	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		2350	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		230	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		237	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		234	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		222	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:	2017-1365	Matrix:	WATER
Lab Sample ID:	1203774857		
Client Sample:	QC for batch 1658891	Client:	ARSL004
Client ID:	LCS for batch 1658891	Method:	SW-846:8260B
Batch ID:	1658891	Inst:	VOA9.I
Run Date:	04/26/2017 11:58	Analyst:	RXY1
Prep Date:	04/26/2017 11:58	Purge Vol:	5 mL
Data File:	042617V9\9P307L.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	47.5	50.0	95	(71%-134%)
Bromofluorobenzene	47.4	50.0	95	(70%-131%)
Toluene-d8	49.3	50.0	99	(74%-124%)

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1365	Date Collected:	04/14/2017 10:57	Matrix:	W
Lab Sample ID:	1203774858	Date Received:	04/18/2017 08:55		
Client Sample:	QC for batch 1658891	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-130757PS	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/26/2017 19:35	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/26/2017 19:35				
Data File:	042617V9\9P323.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		50.5	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		50.1	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		47.0	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		46.2	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		45.3	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		44.7	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		47.2	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		46.3	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.3	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		47.7	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		47.0	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		62.1	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		50.0	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		46.0	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		50.3	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		45.9	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		47.7	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		45.7	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		50.0	ug/L	0.300	1.00
78-93-3	2-Butanone		207	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		236	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		44.0	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		48.0	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		239	ug/L	1.50	5.00
67-64-1	Acetone	B	164	ug/L	1.50	10.0
75-05-8	Acetonitrile		1170	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		45.5	ug/L	0.300	1.00
108-86-1	Bromobenzene		45.7	ug/L	0.300	1.00
74-97-5	Bromochloromethane		48.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		52.8	ug/L	0.300	1.00
75-25-2	Bromoform		57.2	ug/L	0.300	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774858	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 19:35	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 19:35		
Data File: 042617V9\9P323.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		54.6	ug/L	0.300	1.00
75-15-0	Carbon disulfide		235	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		53.4	ug/L	0.300	1.00
108-90-7	Chlorobenzene		45.3	ug/L	0.300	1.00
75-00-3	Chloroethane		50.9	ug/L	0.300	1.00
67-66-3	Chloroform		47.7	ug/L	0.300	1.00
74-87-3	Chloromethane		51.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		55.8	ug/L	0.300	1.00
74-95-3	Dibromomethane		51.3	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		58.7	ug/L	0.300	1.00
60-29-7	Ethyl ether		52.9	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		46.2	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		51.5	ug/L	0.300	1.00
74-88-4	Iodomethane		254	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		48.0	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		46.3	ug/L	1.00	10.0
91-20-3	Naphthalene		52.7	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		51.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		46.0	ug/L	0.300	1.00
108-88-3	Toluene		44.7	ug/L	0.300	1.00
79-01-6	Trichloroethylene		48.4	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		58.6	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		54.6	ug/L	0.300	1.00
156-59-2	cis-1,2-Dichloroethylene		47.4	ug/L	0.300	1.00
10061-01-5	cis-1,3-Dichloropropylene		50.0	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		97.0	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5790	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		46.1	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		43.4	ug/L	0.300	1.00
95-47-6	o-Xylene		49.1	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		48.2	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

Page 3 of 3

SDG Number: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774858	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 19:35	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 19:35		
Data File: 042617V9\9P323.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		53.7	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		49.9	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		46.2	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		51.0	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	52.1	50.0	104	(71%-134%)
Bromofluorobenzene	48.2	50.0	96	(70%-131%)
Toluene-d8	48.5	50.0	97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774859	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 20:32	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 20:32		
Data File: 042617V9\9P325.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		47.4	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		249	ug/L	1.50	5.00
107-13-1	Acrylonitrile		231	ug/L	1.50	5.00
107-05-1	Allyl chloride		226	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: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774859	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 20:32	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 20:32		
Data File: 042617V9\9P325.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		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		2430	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		244	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		249	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		237	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: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774859	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PS	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 20:32	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 20:32		
Data File: 042617V9\9P325.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	49.0	50.0	ug/L 98	(71%-134%)
Bromofluorobenzene	49.2	50.0	ug/L 98	(70%-131%)
Toluene-d8	48.6	50.0	ug/L 97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774860	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 20:03	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 20:03		
Data File: 042617V9\9P324.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
630-20-6	1,1,1,2-Tetrachloroethane		53.2	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane		50.9	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane		48.0	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane		48.4	ug/L	0.300	1.00
75-34-3	1,1-Dichloroethane		47.7	ug/L	0.300	1.00
75-35-4	1,1-Dichloroethylene		45.6	ug/L	0.300	1.00
563-58-6	1,1-Dichloropropene		49.0	ug/L	0.300	1.00
87-61-6	1,2,3-Trichlorobenzene		49.0	ug/L	0.300	1.00
96-18-4	1,2,3-Trichloropropane		49.3	ug/L	0.300	1.00
120-82-1	1,2,4-Trichlorobenzene		51.4	ug/L	0.300	1.00
95-63-6	1,2,4-Trimethylbenzene		49.2	ug/L	0.300	1.00
96-12-8	1,2-Dibromo-3-chloropropane		61.4	ug/L	0.500	1.00
106-93-4	1,2-Dibromoethane		52.3	ug/L	0.300	1.00
95-50-1	1,2-Dichlorobenzene		48.5	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane		51.2	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane		48.1	ug/L	0.300	1.00
108-67-8	1,3,5-Trimethylbenzene		49.9	ug/L	0.300	1.00
541-73-1	1,3-Dichlorobenzene		46.5	ug/L	0.300	1.00
142-28-9	1,3-Dichloropropane		48.0	ug/L	0.300	1.00
106-46-7	1,4-Dichlorobenzene		46.8	ug/L	0.300	1.00
594-20-7	2,2-Dichloropropane		50.7	ug/L	0.300	1.00
78-93-3	2-Butanone		206	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		48.9	ug/L	0.300	1.00
591-78-6	2-Hexanone		229	ug/L	1.50	5.00
106-43-4	4-Chlorotoluene		46.5	ug/L	0.300	1.00
99-87-6	4-Isopropyltoluene		50.1	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone		242	ug/L	1.50	5.00
67-64-1	Acetone	B	156	ug/L	1.50	10.0
75-05-8	Acetonitrile		1160	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		48.0	ug/L	0.300	1.00
108-86-1	Bromobenzene		48.4	ug/L	0.300	1.00
74-97-5	Bromochloromethane		51.9	ug/L	0.300	1.00
75-27-4	Bromodichloromethane		55.2	ug/L	0.300	1.00
75-25-2	Bromoform		59.5	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1365	Date Collected:	04/14/2017 10:57	Matrix:	W
Lab Sample ID:	1203774860	Date Received:	04/18/2017 08:55		
Client Sample:	QC for batch 1658891	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-130757PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/26/2017 20:03	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/26/2017 20:03				
Data File:	042617V9\9P324.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-83-9	Bromomethane		53.1	ug/L	0.300	1.00
75-15-0	Carbon disulfide		239	ug/L	1.50	5.00
56-23-5	Carbon tetrachloride		54.0	ug/L	0.300	1.00
108-90-7	Chlorobenzene		47.9	ug/L	0.300	1.00
75-00-3	Chloroethane		50.8	ug/L	0.300	1.00
67-66-3	Chloroform		49.5	ug/L	0.300	1.00
74-87-3	Chloromethane		51.9	ug/L	0.300	1.00
124-48-1	Dibromochloromethane		58.3	ug/L	0.300	1.00
74-95-3	Dibromomethane		52.4	ug/L	0.300	1.00
75-71-8	Dichlorodifluoromethane		56.4	ug/L	0.300	1.00
60-29-7	Ethyl ether		53.2	ug/L	0.300	1.00
97-63-2	Ethyl methacrylate	U	5.00	ug/L	1.50	5.00
100-41-4	Ethylbenzene		48.0	ug/L	0.300	1.00
87-68-3	Hexachlorobutadiene		53.2	ug/L	0.300	1.00
74-88-4	Iodomethane		261	ug/L	1.50	5.00
78-83-1	Isobutyl alcohol	U	50.0	ug/L	15.0	50.0
98-82-8	Isopropylbenzene		50.7	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		49.0	ug/L	1.00	10.0
91-20-3	Naphthalene		55.2	ug/L	0.300	1.00
107-12-0	Propionitrile	U	5.00	ug/L	1.50	5.00
100-42-5	Styrene		53.0	ug/L	0.300	1.00
127-18-4	Tetrachloroethylene		47.6	ug/L	0.300	1.00
108-88-3	Toluene		46.9	ug/L	0.300	1.00
79-01-6	Trichloroethylene		50.1	ug/L	0.300	1.00
75-69-4	Trichlorofluoromethane		55.0	ug/L	0.300	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/L	2.00	5.00
108-05-4	Vinyl acetate		260	ug/L	1.50	5.00
75-01-4	Vinyl chloride		55.1	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		52.8	ug/L	0.300	1.00
179601-23-1	m,p-Xylenes		102	ug/L	0.300	2.00
71-36-3	n-Butyl alcohol		5470	ug/L	15.0	50.0
104-51-8	n-Butylbenzene		48.4	ug/L	0.300	1.00
103-65-1	n-Propylbenzene		45.6	ug/L	0.300	1.00
95-47-6	o-Xylene		51.6	ug/L	0.300	1.00
135-98-8	sec-Butylbenzene		49.8	ug/L	0.300	1.00

**Volatile
Certificate of Analysis
Sample Summary**

SDG Number:	2017-1365	Date Collected:	04/14/2017 10:57	Matrix:	W
Lab Sample ID:	1203774860	Date Received:	04/18/2017 08:55		
Client Sample:	QC for batch 1658891	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-130757PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/26/2017 20:03	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/26/2017 20:03				
Data File:	042617V9\9P324.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1634-04-4	tert-Butyl methyl ether		55.8	ug/L	0.300	1.00
98-06-6	tert-Butylbenzene		52.7	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene		48.0	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene		53.7	ug/L	0.300	1.00

Surrogate/Tracer recovery	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	48.9	50.0	98	(71%-134%)
Bromofluorobenzene	48.0	50.0	96	(70%-131%)
Toluene-d8	48.5	50.0	97	(74%-124%)

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774861	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 21:01	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 21:01		
Data File: 042617V9\9P326.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		49.6	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		288	ug/L	1.50	5.00
107-13-1	Acrylonitrile		256	ug/L	1.50	5.00
107-05-1	Allyl chloride		238	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: 2017-1365	Date Collected: 04/14/2017 10:57	Matrix: W
Lab Sample ID: 1203774861	Date Received: 04/18/2017 08:55	
Client Sample: QC for batch 1658891	Client: ARSL004	Project: QC
Client ID: CAPA-17-130757PSD	Method: SW-846:8260B	SOP Ref: GL-OA-E-038
Batch ID: 1658891	Inst: VOA9.I	Dilution: 1
Run Date: 04/26/2017 21:01	Analyst: RXY1	Purge Vol: 5 mL
Prep Date: 04/26/2017 21:01		
Data File: 042617V9\9P326.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		249	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		2700	ug/L	15.0	50.0
98-82-8	Isopropylbenzene	U	1.00	ug/L	0.300	1.00
126-98-7	Methacrylonitrile		262	ug/L	1.50	5.00
80-62-6	Methyl methacrylate		264	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		266	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		255	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:	2017-1365	Date Collected:	04/14/2017 10:57	Matrix:	W
Lab Sample ID:	1203774861	Date Received:	04/18/2017 08:55		
Client Sample:	QC for batch 1658891	Client:	ARSL004	Project:	QC
Client ID:	CAPA-17-130757PSD	Method:	SW-846:8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1658891	Inst:	VOA9.I	Dilution:	1
Run Date:	04/26/2017 21:01	Analyst:	RXY1	Purge Vol:	5 mL
Prep Date:	04/26/2017 21:01				
Data File:	042617V9\9P326.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	49.2	50.0	98	(71%-134%)
Bromofluorobenzene	48.0	50.0	96	(70%-131%)
Toluene-d8	48.0	50.0	96	(74%-124%)